THE RHODE ISLAND GEOGRAPHIC INFORMATION SYSTEM

Annual Report - 2005

The Rhode Island Department of Administration
Division of Information Technology
RIGIS Coordinator
One Capitol Hill
Providence, Rhode Island

RIGIS Executive Committee

March 30, 2006

RIGIS Annual Report 2005

PURPOSE: This report provides a synopsis of GIS activities associated with or effecting those organizations participating in the Rhode Island Geographic Information System (RIGIS) during the calendar year 2005. It highlights milestones for the year denoting progress outlined in the "2005-2010 Strategic Management Plan for the RIGIS" as adopted by the RIGIS Executive Committee in December of 2004. This document and successive annual reports in future years will amend the strategic management plan and are intended to become a part of a continuous record for corporate retention and review.

INTRODUCTION: A geographic information system (GIS) is an organizational structure, a suite of technical tools, and a geographically related database used to assimilate, analyze and depict location related or geospatial information. The Rhode Island Geographic Information System (RIGIS) is a consortium of government entities, academic institutions and private organizations that employ GIS technology and use geospatial information.

VISION: The Rhode Island Geographic Information System will be the acknowledged leader for the implementation and employment of GIS technology throughout the state and the accepted source for quality geospatial information in Rhode Island.

MISSION: To monitor, coordinate, and provide leadership for activities related to the use of geographic information system technology in Rhode Island, to support initiatives to implement or use this technology, and to manage and provide access to a common and comprehensive database of geographically referenced information that conform to RIGIS-accepted minimum standards for accuracy, completeness and metadata documentation.

VALUES: The RIGIS and its participants will preserve and rely upon an open and honest exchange of knowledge related to the use of geospatial information in Rhode Island.

SUMMARY OF ACTIVITIES AND ACCOMPLISHMENTS IN 2005:

1. **Leadership, Policy Formulation and Liaison Activities:**
    a. Quarterly RIGIS Executive Committee Meetings were held throughout the year. Minutes of these meetings can be found in Appendix A. of this annual report.
    b. The State Planning Council, the appointing authority for the RIGIS Executive Committee, increased membership by appointing three municipal tax assessors and one private sector representative.
    c. Rhode Island officially joined the National States Geographic Information Council (NSGIC) through a membership funded by the RIDOA/CIO's Office.

d. Nineteen Rhode Islanders participated in the annual Northeast Arc Users conference (NEARC2005) held in Portland, Maine in September. This regional organization has been actively supported by RIGIS members for over 20 years.
e. The RIGIS coordinator participated in and contributed to the Program Committee for the biannual New England Geospatial Information Summit (NEGIS) to be held in May of 2006 in Danvers, Mass.- (RIGIS Coordinator)
f. The RIGIS Technical Advisory Subcommittee was formed as a subcommittee of the RIGIS Executive Committee. This body is intended to provide advice on and clarification of the use of GIS technology for any organization seeking its services.
g. The RIGIS Coordinator assisted in the review of the Urban and Regional Information Association (URISA) Addressing Standards being formulated at the national level.

2. Database Management

a. State agencies and the University of Rhode Island (RIDOH, RIDEM, RIDOT, RIDOA, URI) acquired knowledge through training of ESRI web portal software for future use in better cataloging and indexing of RIGIS data. (Funded by RIDOH). The portal software is being tailored for Rhode Island's needs and is expected to be become operational at the RI Department of Health and the University in 2006.
b. The Geospatial Extension Specialist at URI established and registered a Federal Geographic Data Council (FGDC) Clearinghouse Node for selected RIGIS data accessible through the FGDC site www.fgdc.gov.
c. The Geospatial Extension Specialist at URI established a RSS feed at URI for GIS information http://www.edc.uri.edu/rigis-spf/rss.html
d. Conversion of metadata from the 1993 RIGIS standard to the current RIGIS/ FGDC standard format for 90% of the vector based data sets in the RIGIS database was completed during 2005. (URI/EDC)

3. Database Additions and Updates

a. RIDOA/RIGIS– Schools (update)
b. RIDOA/SWPP – 1976 Historic Aerial Photography
c. RIDEM – Shellfish Closure Areas, Community and NonCommunity Wellhead Protection Areas, Groundwater Classification and Groundwater Recharge Areas, 100K Hypsography
d. RIPTA – Summer and Fall Bus Stops and Bus Routes
e. RIDOT – Statewide Orthophotos for Spring 2003 and 2004

4. Database Enhancement Projects In Progress

a. RIDOA/RIGIS – Flood Zones with RI EMA and FEMA – The FEMA Map Modernization Project for Digital Flood Insurance Rate Maps (DFIRMS) is currently in progress in all Rhode Island counties.

b. RIDOA/RIGIS –TIGER Line Enhancements – With RI E-911, RIDOT and U.S. Census Region 1. The 2005 update was received and is being included in the RIGIS database.
c. RIDEM – Protected Open Space Lands – With The Nature Conservancy and local Land Trusts. The data set is approximately 50% complete.
d. RIDOT- Hurricane Evacuation Routes – With RIEMA. The data set will be complete and for use in an operational mode in early 2006.
e. RI –E911 Statewide Addressing Project – In progress or completed in 2005 - WWK, WK, CR, PA, WO
(TI,GL,EX,EP,NP, NE,MI,PR completed in prior years)
f. RI-E911 – Accepted Data Delivery for the four city (CR,NE,PR,WK) Pictometry Pilot Project
g. URI/Environmental Data Center – Emergency Evacuation Plans – With RI EMA.
h. The Providence Plan – IMS for Economic Development – With the RI EDC
i. USDA/NRCS, Fuss and O'Neil Inc. – With Providence Water Supply Board - Georeferencing Historic Aerial Photography.

4. RIGIS Data Distribution System

a. **RIGIS Web Site at URI –**Summary Statistics 1/1/05 to 11/27/05

A total of 555 GB were downloaded during this time period. (542 GB of this consists of actual geodata). The balance consists of the html and supporting files necessary to drive the site, and miscellaneous flotsam & jetsam.

The details:

- **357 GB consisted of orthorectified imagery** offered through our static image browser, offered in zipped packages in both GeoTIFF and MrSID formats. (This figure does NOT take into account the digital imagery server located at http://ortho.edc.uri.edu).

- **133 GB consisted of historical, non-orthocorrected, non-georegistered imagery** offered exclusively in MrSID format.

- **52 GB consisted of vector GIS data** and supporting metadata documents.

- **A total of 242,010 files** were requested from the on line RIGIS data distribution system during this time period.

161,943 sid files were requested. This figure consists of a total downloaded file size of 133 GB. This figure does not represent all sid files download from this site - see next item.

43,793 zip files were requested. This figure consists of a total

downloaded file size of 408 GB. This includes both raster (both GeoTIFF and MrSID format zipped into packages containing metadata) and vector geodata.

The remaining 36,274 of requests were for metadata files.

The **on line RIGIS license agreement was completed 5004** times between 3/4/2005 and 11/27/2005. We don't have a complete picture for this year due to a technical problem that went undiagnosed for some time.

- Of these 5004 logins, a very rough assessment consists of:
~3000 unique users.
~500 bogus entries.
The balance, ~1500, consist of repeat logins.

Web Site Manager's Comment: It's remarkable how popular the historical aerial images are! (Greg)
(Individual digital photo file sizes run from 3-12 mb and average about 5 mb, with over 133 Gb downloaded this amounts to a pretty constant use of this resource. I'm not sure whether the browser viewing utility we've made available is counted in the 133 Gb figure. If not I'm sure we're looking at least two to three times that volume for these historic aerials alone)

Greg Bonynge greg@edc.uri.edu
RI Geospatial Extension Specialist http://geospatial.uri.edu

University of Rhode Island Cooperative Extension
Department of Natural Resources Science
Coastal Institute - Kingston
1 Greenhouse Road T: 401-874-2180

b. Data Distribution on Optical Media (CDROM) 01/01/05-12/09/05)
36 Total Requests - All but 5 from Private Sector

Orthophotos = 39.5 GB
DEM/DRGs = 2.5 GB
Total 42 Gb

c. Financial – URI Foundation RIGIS License Account
(Proceeds from Data Distribution License Fees)
Starting Account Balance: $5433

In - $3100 to URI Foundation RIGIS Account in License Fees

Out – Lizardtech License Maintenance - $700
Supplies – (CD Media/Labels) - $300)
Printer (CD Data Distribution)- $100

Workshop Sponsorship - $150
External Disk Drives (2 NAIP and Pictometry) - $600
Ending Balance: $3683

5. EDUCATION, TRAINING AND OUTREACH

a. Formal Courses in the use and application of GIS continued at Colleges and Universities at URI -within the Natural Resources Sciences curriculum (5 courses), and within Community Planning and Development Program (1 course), at Brown within the Department of Planetary Geology (1 course) and at Rhode Island College within the Political Science/Geography Department (1 course).
b. Training sessions in the use of GIS software were offered through the Cooperative Extension Service at URI. Fuss and O'Neil Inc. started offering training courses in GIS during the year.
c. Internships supporting GIS programs were offered by RIDOT (5), RIDOA (2), RI EMA (1) and the Providence Plan (1).
d. RI GIS practioners supported and attended specialized training sessions, workshops and seminars offered throughout the year.
    1. RIGIS /URI cosponsored - GIS Internet Mapping Tools Workshop at URI - March
    2. RI Geographic Forum - Municipal GIS – Cranston – June
    3. ESRI International Users Conference Training Sessions – San Diego - July
    4. RI E911 Pictometry Software Training – Providence - July
    5. RIDOH – ESRI GIS Web Portal Software Training – URI/Providence - August
    6. Northeast Arc Users Group – Fall Conference Workshops – Portland ME - September
    7. New England URISA – GIS and Addressing – Shrewsbury MA - December
e. Presentations were made on GIS to students in K-12 class rooms at Coventry High School and Rocky Hill School in Warwick.
f. The RIGIS Listserve (RIGIS-L) at URI concerning information of interest to GIS users was reinstituted during the calendar year.

6. STATE GOVERNMENT GIS ACTIVITIES

a. Four state agencies consisting of RIDOA, RIDEM,RIDOH, and RIDOT actively using GIS continued toward a common goal to establish a unified enterprise wide system.
b. RIDOT acquired ESRI ArcGIS Server software to better enable interoperability among its various GIS applications.
c. RIDOT will be moving toward conversion of its GIS database access management software from ArcSDE Oracle to ArcSDE Sequel Server.

This will enable better future cross system compatibility among other users at RIDOH and URI that are also using the same software approach.

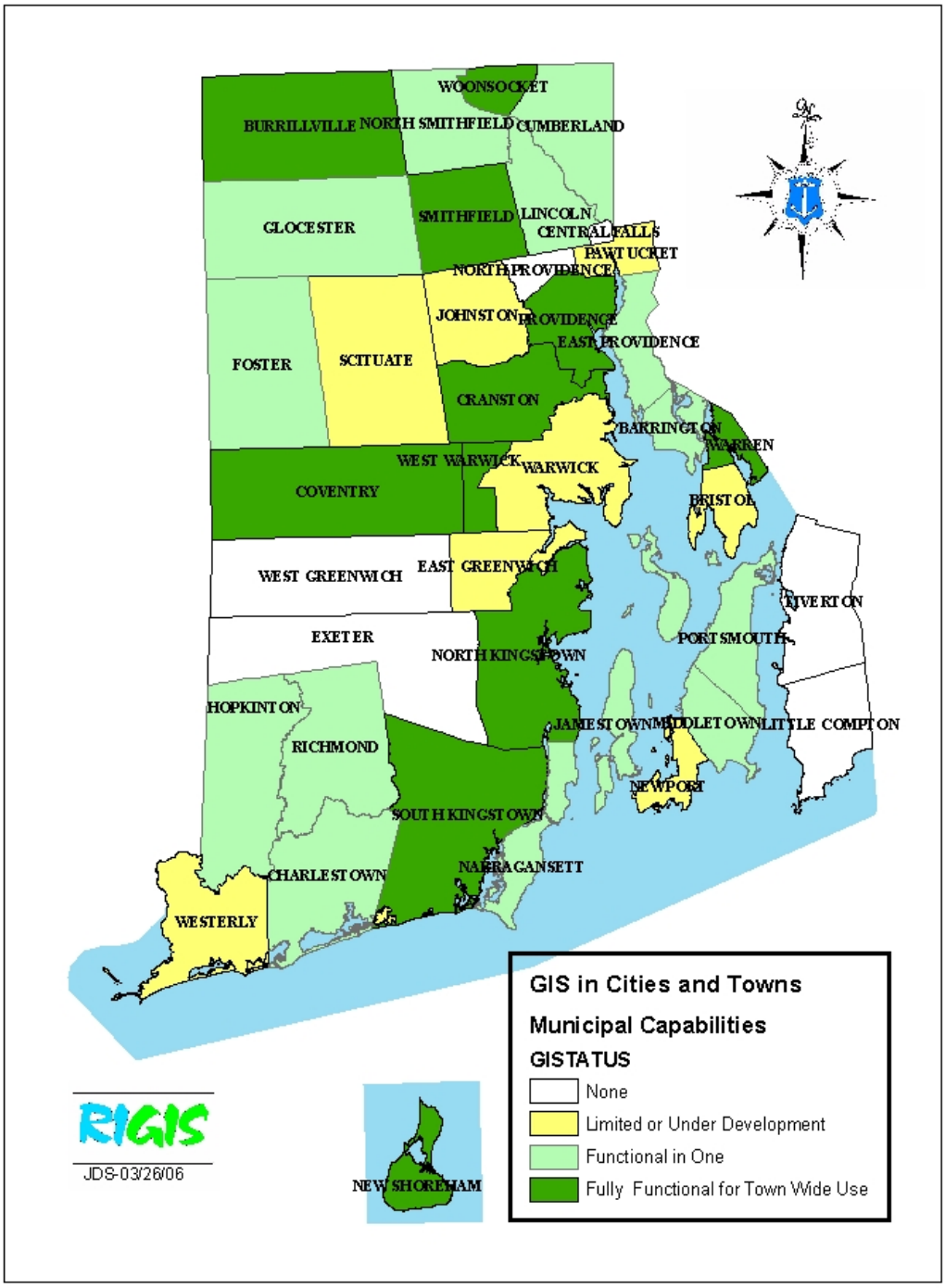
d. RIDEM upgraded their ArcIMS server for external (public) applications. The operational server is being maintained DoIT at RIDOT. The RIDOA/CIO's office purchased new ESRI ArcGIS software for that application and is supporting annual maintenance for the ArcGIS/ArcView software on that server. The application is now considered an interagency resource for external publishing of interactive maps.
e. RIDOH acquired the ESRI web portal software for accessing and managing GIS databases through web browser technology. Although this is presently an internal application within the Health Department's local database and its internal network, it is anticipated that this approach will be available for agency wide use throughout state government in the future.
f. The master price agreement for state and municipal government for ESRI software products and services was updated and renewed. The RIDOA, Division of Information Technology (DoIT) has crafted a Master Price Agreement (MPA-230) available through the state Purchasing Division. This MPA allow state and municipal government entities to exercise the purchase of technical services including GIS from listed vendors.

7. MUNICIPAL GOVERNMENT GIS ACTIVITIES:

Interest in and growth in the use of GIS technology has increased throughout the year. Approximately 80% of Rhode Island's municipalities now have some level of GIS capability and are using the technology in one or more departments in city or town hall. Expansion of municipal GIS into Tax Assessment and Public Safety (police and fire) departments in several towns has led the way. Many Rhode Island municipal towns are creating or enhancing their GIS database on new material. Grant monies from the Rhode Island Economic Development Corporation were awarded to Newport and East Greenwich for parcel database development and to Cumberland for wastewater infrastructure management. The Town of Middletown has acquired high-resolution color orthophotography (6" pixel) and is creating GIS vector from this source. The City of Providence and the Providence Water Supply Board are in the process of acquiring similar data. Several cities and towns including Cranston, Providence and South Kingstown are developing internal Internet Map Service (IMS) sites and are studying the public use of this technology for their citizens. The Providence Plan working with the Rhode Island Economic Development Corp. is developing an IMS that includes municipal parcel level data for public use in the near future.

A RI Geographic Forum session centered on municipal GIS was sponsored by RIGIS and URI and held in Cranston in June. Over 75 people representing municipal and state government and the private sector attended the event.

The below graphic reflects the status of municipal GIS in Rhode Island's cities and towns:



RI Municipal GIS and Parcel Data Status – December, 2005

Town Name	Contact	Status
Barrington	DPW/Eng	GIS in DPW/No Parcel Data
Bristol	Planning	No GIS/No Parcel Data
Burrillville	MIS/IT Ed Pienkos	Functional GIS/Parcel Data
Central Falls	Unknown	No GIS/No Parcel Data
Charlestown	Assessor Ken Swain	Older Parcel Data
Coventry	Planning Lynn Carlson	Functional GIS/Parcel Data
Cranston	MIS/IT Maria Giarrusso	Functional GIS/Parcel Data
Cumberland	Planner-	Functional GIS/Parcel Data
East Greenwich	Planning –Lee Whitaker	GIS Parcels Under Devel
East Providence	Planning – Jim Moran	GIS Parcels Under Devel
Exeter	Planning Board	No GIS/No Parcel Data
Foster	Planning – Richard Grant	Functional GIS/Parcel Data
Glocester	Planning – Ray Goff	Functional GIS/Parcel Data
Hopkinton	Assessor –	Functional GIS/Parcel Data
Jamestown	Planning–	GIS Parcels Under Development
Johnston	Building -George Corrente	No GIS/CAD Parcel Data
Lincoln	Planning/Eng-Albert Ranaldi	Functional GIS/Parcel Data
Little Compton	Planning Brd/ConservCom	No GIS/No Parcel Data
Middletown	Planning	GIS Parcels Under Development
Narragansett	Assessor-Jon Majieka	Functional GIS/Parcel Data
Newport	AdminServices-Ned Draper	Older Parcel Data
New Shoreham	GIS/Planning –Carol Baker	Functional GIS/Parcel Data
North Kingstown	GIS/MIS–Jason Albequerque	Functional GIS/Parcel Data
North Providence	Unknown	No GIS/No Parcel Data
North Smithfield	Planning –Mike Phillips	Functional GIS/Parcel Data
Pawtucket	Planning- Mike Wilcox	GIS Under Devel/CAD Data
Portsmouth	Planning – Bob Gilstien	Older Parcel Data
Providence	Planning – Bob Enright	Functional GIS/Parcel Data
Richmond	Planning –	Functional GIS/Parcel Data
Scituate	Assessor – Karen Beatty	GIS Parcels Data-ProvWater
Smithfield	Assessor –Suzzane Kogut	Functional GIS/Parcel Data
South Kingstown	GIS - Carol Baker	Functional GIS/Parcel Data
Tiverton	Planner -	No GIS/No Parcel Data
Warren	Planner –Michelle Maher	Functional GIS/
Warwick	Planning – Dan Geagan	Functional GIS/Parcel Data
Westerly	Planning –Bill Haase	No GIS/No Parcel Data
West Greenwich	Unknown	No GIS/No Parcel Data
West Warwick	Eng/DPW – Kathryn Willis	Functional GIS/Parcel Data
Woonsocket	DPW/Eng – Scott Sanford	Functional GIS/Parcel Data

John Stachelhaus – 04/15/05
For Listings of Municipal Officials go to
http://www.muni-info.ri.gov/publications.htm#directory

8. PRIVATE SECTOR SUPPORT

Regional and Rhode Island based private businesses assisted municipalities developing or enhancing city and town GIS capabilities throughout the year. This included the creation or maintenance of digital parcel level data sets in several cities and towns. Notable advancements were also attained in the development of Internet Map Services (IMS) for internal use by town government.

Private sector enterprises also assisted state agencies through the fulfillment of contract obligations for Rhode Island state government agencies. This included database development at RIDOH and applications for highway asset management at RIDOT.

9. FUNDING:

a. Grants Awarded

1. To URI/EDC: - Grantor USGS/FGDC CAP Grant Program

Establishing Framework Data Services using the OpenGIS Web Feature Service Specification provides assistance for establishing methodologies for serving and using Framework data over the Web using the OpenGIS Web Feature Service specification. A project will require formal collaboration between a data provider and a software provider.
Award $50,000 (50% in-kind match)

2. To: Town of East Greenwich: - Grantor - RI Economic Development Corporation

Development of a municipal property parcel database for East Greenwich
Award $15,000

3. To: City of Newport - Grantor RI Economic Development Corporation

Development of a municipal property parcel database for Newport
Award $15,000

4. To: Town of Cumberland: - Grantor - RI Economic Development Corporation

Development of a municipal wastewater infrastructure database for Cumberland
Award $15,000

5. To: Town of Middletown – Grantor – U.S. Department of Homeland Security

Development of high resolution digital orthophotography, parcel database, vector road centerlines and base mapping data.
Award $138,000

RIGIS EXECUTIVE COMMITTEE MEETING
March 15, 2005
USDA/NRCS Conference Room, 60 Quaker Lane, Warwick

The meeting was held in the USDA/NRCS Conference Room, 60 Quaker Lane, Warwick, RI with the following **Attendees Present**: Joe Klinger, EcoTones Inc. (Chair); Paul Jordan, RIDEM; Greg Bonynge, URI; Carol Baker, Towns of South Kingstown and New Shoreham; James Turenne, USDA/NRCS; Lynn Carlson, Brown University; Steve Kut, RIDOT; Chris Gallagan, Applied Sciences Associates; Thomas Grala, Narragansett Bay Commission; John Stachelhaus, RIDOA/RIGIS-Executive Secretary: **Observers:** Peter Bujwid, Applied Geographics Inc; Mark Goetz, Fuss and O'Neil Inc

1. December 15, 2004 Meeting Minutes - Minutes of the previous meeting of December 15th were reviewed. Tom Grala moved for acceptance and Paul Jordan seconded. The motion was passed.

2. RIGISUP04 Data Update– John Stachelhaus – RIGIS Coordinator

John announced the release of updates to the RIGIS database for December 2004. A copy of the letter covering this release listing data sets that were included in the update was distributed at the meeting and will be available on line in the near future. Data includes a new GNIS names layer, corrections and edits to the existing Census 2000 SF3, 1995 Landuse, RITown5k town lines data sets as well as updated E911, public safety and transportation data sets. New listings for aerial photography include 1976 historical photos, 2002 USGS orthophotos for northern urban RI, and statewide USDA summer of 2003 orthophotos. The data will appear on the URI site at www.edc.uri.edu/rigis as time permits personnel at the EDC to do so. CDs of the vector data included in this update will be available at no cost to existing RIGIS licensed data holders on request.

3. RIGIS Data/Web Portal at URI – Greg Bonyge- Geospatial Extension Specialist – EDC/URI

Greg announced that an initial meeting on the ESRI Geospatial One Stop (GOS) portal software was postponed to allow ESRI Boston to explore a new revision to that software prior to demonstrating its capabilities to RIGIS participants at URI and the state agencies.

He also outlined some of the plans to use this software at the Environmental Data Center at URI to support in-state GIS activities including not only RIGIS, but other interests as well. This would include not only distribution of digital GIS data sets, but links and utilities for IMS, static map products, and digital products

from others within Rhode Island as well as at the regional and national levels as well. Since standardized metadata in the FGDC format is required to use the GOS portal software, an important first step in this process will have to be the conversion of all existing metadata into that format. In the upcoming months he will be looking a ways to do this, and hopes to present a plan to due so at the next (May/June) RIGIS Executive Committee Meeting. Greg is also planning on employing a graphic designer to help with the look and feel of the web site format at the EDC/URI for this purpose.

4. Participant Activity Review

RIDEM – Paul Jordan announced that two interns have been employed for the next 10 months to update the open space data sets for the Rhode Island.

Narragansett Bay Commission - Tom Grala noted that the NBC is using GIS with a software maintenance management package for sewer infrastructure. He also updated the group on work proceeding with the CSO tunnel project in Providence.

RIDOA – John Stachelhaus announced that a new state CIO had been selected at RIDOA. Ms. Tracy Williams, formerly with the RI state Judicial Information Center, will fill that position.

John presented the RIGIS Strategic Management Plan adopted at the past December RIGIS meeting to the State Planning Council at that bodies March meeting.

Town of South Kingstown – Carol Baker announced that the NEARC Spring meeting will be held at Smith College in North Hampton, MA on May 4th. The NEARC Annual conference will be in Portland, ME September 18-20. More information and on line registration are available at www.northeastarc.org. The Northeast Water/Wastewater GIS group will be meeting in New Haven, CT on March 24th. Carol will be attending a two day training session at ESRI (Danvers) in April on parcel updating software. South Kingstown is exploring possibilities for town wide 6 inch pixel resolution orthophotography funded by US DHS.

Town of New Shoreham – Carol Baker noted that New Shoreham is using GIS software for septic system management. She has been asked to testify on the use of GIS data on the island connected with the dispute over the expansion of marina facilities.

RIDOT – Steve Kut explained that the color problems with 2003-3004 orthophotos has been resolved, but they are now seeing what appears to be coordinate registration or feature alignment problems around several bridges in the state.

GIS has been used extensively by the RIDOT maintenance and operations section this winter for snow plow routing and contractor management. This has included weather data, remote camera imagery and IMS applications.
A database of bore hole information has been delivered to RIDOT by URI for future use and archival storage.
RIDOT is exploring the use of ArcGIS Server software for use within the Department.
The telephone 511 system for notifying motorists of traffic incidents, road conditions and other factors based mainly on GIS data and mapping is nearing an operational state.

EcoTones – Joe Klinger reported that EcoTones is using GIS for cataloging site-specific information from field data collection for use within that company.

Applied Geographics – Peter Bujwid said that his company will be working with the Providence Plan on IMS web site development supporting a project for the RI Economic Development Corporation.

Applied Science Associates. – Chris Galagan outlines ASA development of a GIS software extension for ArcGIS using real time meteorological and sea surface conditions along with time series data in various and sometimes obscure formats for use by the Coast Guard. Although the completion of the project is about a year away, the applications look exciting. Paul Jordan noted that there may be some interest from the Bay Area Response Team consisting of RIDEM, URI and others for possible use in Narragansett Bay.

Fuss and O'Neill Inc. – Mark Goetz introduced himself and explained that Ann Marcotte who usually attends the meetings would be out on maternity leave. H noted that Susan Scanlon formerly of the ESRI Boston office would be joining Fuss and O'Neill here in Rhode Island. Mark offered to intercede for the RIGIS and CTGIS to establish liaison between the two state GIS groups.

Brown University – Lynn Carlson is working on a historical study using GIS to analyze 1790 population statistics in Rhode Island and Massachusetts. She also said that she'd be working for the RI WRB locating water resources in the Big River Reservoir area this summer.

USDA/NRCS – Jim Turrene announced that soils data for Rhode Island as well as nationally can be found at www.soils.usda.gov. He also noted that summer work in the coastal ponds of southern RI and Narragansett Bay has received some funding and will resume this summer as part of the CoastMap project.

RIGIS EXECUTIVE COMMI*TTEE MEETING
June 13, 2005
USDA/NRCS Conference Room, 60 Quaker Lane, Warwick

The meeting was held in the USDA/NRCS Conference Room, 60 Quaker Lane, Warwick, RI with the following **Attendees Present**: Paul Jordan, RIDEM(Chair); Peter August and Greg Bonynge, URI; Jon Boothroyd, State Geologist; Carol Baker, Towns of South Kingstown and New Shoreham; James Turenne, USDA/NRCS; Mary Gelardi, RIDOT; Mary Hutchinson, Mapping and Planning Services; Thomas Grala, Narragansett Bay Commission; Lynn Bjorklund, USGS-NGPO; Jim Lucht, The Providence Plan; Raymond LaBelle, RI-E911; John Stachelhaus, RIDOA/RIGIS-Executive Secretary: **Observer:** Susan Scanlon, Fuss and O'Neil Inc

1. **March 15, 2005 Meeting Minutes** - Minutes of the previous meeting of March 15th 2005 were reviewed. Peter August moved for acceptance and Mary Gelardi seconded. The motion was passed.

2. RIGIS Data Updates

RIDEM – Paul Jordan

Shellfish Closures for June 2005 - Permanent, seasonal and conditional shellfish closure areas in RI marine and estuarine waters in accordance with the provisions of: Title 20, Chapter 8.1 Of the General Laws of 1956, entitled "shellfish grounds".

Wellhead Protection Areas (Community and Non-Community Wells) - An overview of areas intended to be protected for the safety of community and non-community wells in Rhode Island

Groundwater Recharge Areas - Recharge area" means the land surface from which water is added to the zone of saturation for a groundwater aquifer. The recharge area for a particular well or aquifer, for instance, is that land surface from which water moves to the well or aquifer or may move to the well or aquifer under certain hydraulic conditions.

Groundwater Classification – Classification of mapped areas for all of the state's groundwater resources and establish groundwater quality standards for each class. The four classes are designated GAA, GA, GB, and GC.

RIDOA – John Stachelhaus

Schools-2004/05 - Location and contact information for public and private schools from the preschool through the university level in Rhode Island data from the RI Department of Education effective December 2004.

RI E911

Updated E911 Roads 2005 - This data set contains street center lines for all highways, roads, and streets for the entire state of Rhode Island dated 12/15/2004 with corrections for zip code area attributes by RIDOA.

Pictometry International Imagery – Raymond LaBelle

Ray Labelle gave a demonstration highlighting the oblique imagery available for a four pilot city area including Cranston, Newport, Providence and Warwick. The imagery and included viewing software system are being delivered to RI -E911 and will be available to all state agencies, municipal government and state colleges and universities. Training sessions for the use of the products is being set up for the near future. (Training was held on July 20th.)

3. GPS CORS Sites, Remote Access – Jim Turenne

Jim Turenne introduced the idea for possibly establishing GPS virtual reference stations using the (3) Continuously Operating Reference Stations (CORS) now functioning in Rhode Island. His interest was increased when using GPS/RTK (Real Time Kinetic mode) for the CoastMap project on South Coastal Rhode Island. The existence of such a system would greatly enhance the ability to obtain more accurate vertical information in the field when using GPS. The basic idea would involve the capability for existing CORS sites to input satellite correction factors to a server that would be accessible to field personnel using GPS. Survey grade GPS hardware can be made capable of using this technology by Trimble Inc. During the discussion of this topic, a question arose as to who would operate and maintain the server.

4. The Providence Plan/Economic Development Corporation (RIEDC) IMS Site – Jim Lucht

Jim Lucht provided a demonstration of an IMS site that the Providence Plan is developing for the RIEDC. He explained that the RIEDC seeing the utility of using GIS for their business concerns has contracted the Providence Plan to develop an IMS utility for furthering economic development interests in the state. The site uses data from RIGIS, 11 cities and towns, and commercially available data obtained through the RIEDC. Applied Geographics of Boston is providing technical assistance in customizing the site with ESRI IMS software. The site, still under development, has property parcel and address search capabilities, and general theme area tabs for property information by city or town, as well as site suitability analysis, and census demographic and business locator query and mapping functions.

5. RIGIS Data/Web Portal at URI – Greg Bonyge- Geospatial Extension Specialist – EDC/URI

Greg announced that The Cooperative Extension Service and the Environmental Data Center at URI have submitted a proposal to USGS under the 2005 Cooperative Agreements Program (CAP) for the development of an enhanced Web feature services technology at URI for data distribution. (URI has since been awarded the grant to proceed with the project.)

Greg announced that a metadata clearinghouse site for certain RIGIS data layers has bee established and registered with the FGDC. It can be found www.fgdc.gov under "clearinghouses".

He also noted that Mark Christiano at the EDC has begun a project to convert RIGIS legacy metadata to the FGDC content standard format. An FGDC metadata clearinghouse site has been established using Z39.50 technology and will be registered with the FGDC in the near future.

Greg is working with a graphic design specialist to modify the existing RIGIS data distribution site at URI. He will have an on line survey form available to question users as to their preferences on what should be included on the RIGIS site at URI in the future. He requested that 'we spread the word" to increase input from the survey.

6. MassGIS Draft Municipal Plan Standards – John Stachelhaus

John Stachelhaus introduced draft standards that MassGIS is working on to offer towns in the Commonwealth guidelines for the submission of digital plans for engineering projects and subdivisions in cities and towns. He suggested that RIGIS might want to consider a similar effort and asked for input from the members present.

Carol Baker said that South Kingstown had offered something similar a few years ago, but the private surveying and engineering community didn't appear very interested. In the case of South Kingstown, there hasn't been many problems in getting or working with digital plans, and Carol didn't think the effort was that necessary.

Mary Hutchinson said the Middletown has had a requirement for a few years that digital plans must be submitted for larger subdivisions. Again, there does not seem to be a need for further action in that town. She also noted that some smaller companies are not producing digital files and requiring them to do so would place a hardship on them

7. **Round robin participant reports** were abbreviated by agreement of the committee due to a lack of time.

Jon Boothroyd-URI Geosciences – Jon announced that he would be working with USA Corps of Engineers LIDAR data on the south coastal areas studying coastal change this summer. It was also noted that The Providence Water Supply Board would be considering LIDAR for analysis of the Scituate Reservoir water shed.

Carol Baker – South Kingstown – Carol noted that the E911 roads data was not suitable for use with software used by the South Kingstown Police Department with IMC software. The address ranges for roads was limited to existing dwelling units on the roads. Although Carol was able to improve on this for South Kingstown, it does appear that this will put limitations for this data when doing address match geocoding. (After looking into this, it was realized that RI E-911

and its consultant Microdata GIS had internal reasons for coding the address ranges in this fashion. Through joint efforts of RIGIS partners with interests in roads data, we will attempt to improve on this in the future.)

RIGIS Executive Committee Meeting
Wednesday Sept. 28th 2005

NRCS Conference Room 60 Quaker Lane - Warwick

Meeting Minutes

Attendees: Joe Klinger- Ecotones Inc.-Chair; Greg Bonynge- URI; Christopher Galagan-Applied Sciences Asso.; Al DiOrio- RI Board of Registration for Professional Land Surveyors; Paul Jordan-RIDEM; Steve Kut-RIDOT; Tom Grala-Narragansett Bay Commission; Carol Baker-Towns of South Kingstown and New Shoreham; Lynn Carlson- Brown University; Anne Marcotte- Fuss and O'Niel Inc. (Observer); John Stachelhaus- RIDOA/DoIT-RIGIS Executive Secretary

Review of Minutes of June 2005 Meeting- The minutes of the June 2005 RIGIS Executive Committee meetings were reviewed. John Stachelhaus noted that the comments by Carol Baker as to the nature of address ranges in the E-911 roads data sets did in fact limit the usefulness of this data set with respect to automated geocoding. The intent of RI E-911 and their consultant was not to use address ranges on road centerlines for that purpose. They rely on the addresses of individual building points for that purpose. John noted that he will be working with US Census Region 1 in Boston to make newer TIGER roads that are or will be based on RIDOT 1:5000 scale geography and RI E-911 road names more suitable for geocoding purposes.

Carol moved for acceptance of the minutes, the motion was seconded and passed.

1. **Annual review of RIGIS Strategic Plan** – John Stachelhaus-RIGIS
John noted that the RIGIS Strategic Plan as accepted by the Committee in December of 2004 would be due for evaluation at the end of this calendar year. He suggested that all members review the document, submit comments to him via email and be prepared to discuss it in more detail at the next (November/December) meeting. John will be working on a draft annual report based on items in the Strategic Plan to be prepared prior to the next meeting.

2. **Update on Web Data Portal at EDC/URI** – Greg Bonynge-URI

Greg Bonynge the Geospatial Extension Specialist representing URI has been working on a new face for the RIGIS distribution system that will be based on ESRI's web portal tool kit. He and other members of the committee from RIDOA, RIDEM, RIDOH and RIDOT and URI attended ESRI training sessions on the use and implementation of the portal tool kit in August. The training was funded by RIDOH through the efforts of Steve Sawyer. (Steve has implemented a web portal based on the ESRI software at RIDOH that will be using it internally for RIDOH purposes.)

Greg had the software installed and running on a Laptop and demonstrated some of its capabilities for the attendees. The software is based on an ability to read and extract information from spatial metadata files. This includes searches on keywords, spatial extents and listed creators or distributors of spatial data. A map viewer utility within the portal software can provide access to map data available on IMS or WMS sites. A map creator utility will also allow clients to build maps with ArcExplorer software running on the server hosting the portal software. An application utility also enables users to input and create metadata information based on minimally compliant FGDC or ISO standards. A capability to allow the portal manager to establish separate channels for individual users or user groups to host more specific areas for data display and information is included in the portal software. Greg hopes to have the portal software up and running in late winter or early spring of 2006. The site will eventually replace the existing RIGIS download site, but there is an intent to run both in parallel for a period of time.

Several questions arose following Greg's presentation.

The map viewing and map creation software as it presently exists would allow users to download layers with the use of ArcGIS software. There was some concern that this could allow users to circumvent RIGIS data licensing policy and breach the integretey of the RIGIS database. Although it was pointed out that existing license policy would still be in effect and would be clearly spelled out in the metadata, this issue will be studied to ensure data security is not compromised.

A major concern was discussed with respect to setting up and managing channels. It was pointed out that unless controlled properly, information on viewpoints specific to a particular data channel manager could jeopardize an intended impartiality of the site. Although the portal manager controls setting up a channel area, occurrences could happen whereby a personal agenda or issue is presented and misinterpreted to inadvertantly show the concurrence or support of the RIGIS as a whole. It was suggested that the formation of a separate committee or RIGIS subcommittee be studied to monitor site content.

Overall the members were very much impressed and enthusiastic over the web portal software and anxious to see it move on toward full implementation. Greg noted that he will continue to keep the committee informed as to his progress.

3. **Review of the NorthEast Arc Users Conference** - NEARC05 Carol Baker – South Kingstown

Carol announced that the recently completed 20th Annual NEARC Conference in Portland, Maine drew over 500 participants and was a huge success. The conference included vendor display areas, and many presentation sessions. The availability ESRI workshops was greatly expanded over past years. Woodward and Curran of Portland served as conference chair. This was the first time that a private company has served in this capacity for NEARC. NEARC06 will be held in Mystic Connecticut and is being scheduled for November.

4. **New Data Announcements** - Steve Kut – RIDOT

Steve announced that RIDOT is taking final delivery of the 2003/04 orthophoto data set from its consultant Chas. Sells. Although there may still be some minor unresolved issues on individual images, Steve said the RIDOT will finish the detailed quality control process that has been necessary and will receive the final image package. The availability of the imagery to the public will be dependent on the delivery of the compressed (MrSID) product to the RIGIS Coordinator. John Stachelhaus noted that following his discussions with ESRI, Lizardtech, and several other independent consultants during the NEARC05 conference, the compression would be in MrSid MG3 format.

Georegistering Historic Aerial Photography – John Stachelhaus said that several groups or individuals are independently georegistering the scanned historical aerial photographs downloaded from the RIGIS website. He noted that Fuss and O'Neil was completing he Scituate reservoir watershed for the Providence Water Supply Board and through an agreement with RIGIS would supply these data to RIGIS. The USDA/NRCS is using an intern to georegister selected images as well, and Jon Boothroyd of the URI Department of Geosciences is doing similar work for images along the coast and Narragansett Bay. John suggested that better communications between these and other groups would help reduce duplication and he will attempt to coordinate these efforts.

5. **Spring 2006 Orthos** – John Stachelhaus explained that the National Geospatial Intelligence Agency (NGA) intends to obtain high-resolution (1 foot pixel) orthophotography of urban areas of Rhode Island amounting to 60% of the state in the spring of 2006 for internal use. Through the USGS, they have expressed an interest in joining in a cooperative venture to improve and expand this project including expanding coverage to 100 percent of the state. John is trying to target funding from in state interests to pursue this. He estimates that $500,000 would be needed from Rhode Island interests to

satisfy the needs of the State and NGA to complete the project. He asked that anyone within the Committee with knowledge of any additional funding sources should contact him with information.

6. **Proposed GIS Technical Review Sub-Committee**
– Paul Jordan – RIDEM

Paul outlined the concept of establishing a RIGIS subcommittee to act as an independent advisory group to assist agencies and organizations in the proper use of GIS technology for projects, studies and geospatial products. He noted with the complexity of data now available and the increased ability of software to easily manipulate it in varied ways, nontechnical managers could be drawn to conclusions that are a product of technical processes not actually supported by the data behind it. The availability of experts in the GIS field could provide a service to assist in clarifying such matters. The proposed subcommittee would be advisory in nature and become involved only on invitation of a requesting organization. Paul moved to establish such a subcommittee, John Stachelhaus seconded and the motion was passed. Volunteers include: Paul Jordan, Carol Baker, Greg Bonynge, Lynn Carlson, Steve Kut, John Stachelhaus and Anne Marcotte.

7. **Participant Round Table Review** – Cancelled due to a lack of time

8. John Stachelhaus noted the activities of the **URISA GISCorps** in the rescue and relief effort in Louisiana and Mississippi and encouraged all to visit the URISA.org site for further information. He also requested input for national **GIS Day in November**. An effort to present a GIS exhibit at the Rhode Island Statehouse was discussed. Noting that the legislature would not be in session in November, it was suggested tht such an event would be better timed for January or February. Anne Marcotte asked for information on RI schools that might be interested in GIS day activities.

RIGIS Executive Committee Meeting
Wednesday December 14th 2005

RIDOT Bridge and Maintenance Training Room
Lincoln Ave - Warwick

Meeting Minutes

Attendees: Joe Klinger- Ecotones Inc.-Chair; Greg Bonynge- URI; Christopher Galagan-Applied Sciences Asso.; Jon Boothroyd – State Geologist; Steve Sawyer-RIDOH; Paul Jordan-RIDEM; Steve Kut-RIDOT; Rob Christina-RI Water Resources Board; Maria Giarrusso-City of Cranston; Suzanne Kogut – Town of Smithfield; Kenneth Swain- Town of Charlestown; Janice Peixinho-Town of East Greenwich; Mary Hutchinson – Mapping and Planning Services Inc.; Eric Bodiker – USDA/NRCS; Carol Baker-Towns of South Kingstown and New Shoreham; Lynn Carlson- Brown University; Susan Scanlon - Fuss and O'Niel Inc.; John Stachelhaus- RIDOA/DoIT-RIGIS Executive Secretary

New members or representatives to the committee were introduced. These new members were appointed by the RI State Planning Council at that bodies' last monthly meeting of December 8th, 2005.

Kenneth Swain – Tax Assessor – Town of Charlestown
Janice Piexinho – Tax Assesssor – Town of East Greenwich
Suzanne Kogut – Tax Assessor – Town of Smithfield
Anne Marcotte/Susan Scanlon – Fuss & O'Neil Inc.

Two new representatives for existing committee member organizations were also announced.

Maria Giarrusso – GIS Manager – City of Cranston
Rob Cristina – RI Water Resources Board

Announcements: The opening of the application period for the FGDC CAP grants and USDHS CEDAP grants for municipal public safety first responders was announced. Members were encouraged to pass this information on to others that might be eligible and interested.

Review of Minutes of September 2005 Meeting-The minutes of the September 2005 RIGIS Executive Committee meetings were reviewed. Carol Baker moved for acceptance, Paul Jordan seconded and the minutes were accepted as submitted.

1. **Annual review of RIGIS Strategic Plan** – John Stachelhaus-RIGIS

John noted that the RIGIS Strategic Plan is subject for the annual evaluation for this calendar year. He also noted that the draft annual report included as a handout could be used in this evaluation, and requested input to that draft report be emailed to him by January 15th. The annual report includes a Vision Statement and a Values Statement that should be inserted into the Strategic Plan and urged members to provide their comments on these two items in particular. He also said that revisions in the Committee's membership will be included into the plan. John will continue working on the annual report to be provided to the committee prior to the next meeting. He noted that it appears that action items included in the Strategic Plan last year might appear to be overly ambitious, but it should be taken into account that this is a five year plan, and realistically action items can often and in some cases should carry over into future years.

2. Brief**ing of the RIDEM Open Space Mapping Project**– Paul Jordan-RIDEM

Paul provided an overview paper and status map of a project being conducted at RIDEM to identify and map protected open space lands in the state. For the past year Paul has been supervising two temporary employees in identifying, collecting and mapping protected open space land. This is being done in cooperation with The Nature Conservancy, (TNC) municipal government, and local land trusts. All RIDEM lands have been mapped. The status also map shows that approximately half the state consisting of most of Washington county, Jamestown, Little Compton, Bristol and Burrillville have been completed. The towns of Glocester and Middletown and the City of Newport are in progress and the rest of the state will be worked on in the next year. TNC is providing funding to employ the temporary help until April of 2006 and it is hoped that summer intern program money will be available in the spring. Feature attributes accompanying the spatial data include descriptive and owner identifying information and indications of source material, and levels of confidence in the quality of the data input processes. Maplets supporting the briefing paper indicate state/non-state ownership and indications of property protection type. Examples of different types of source material were also shown.

Ken Swain questioned how the process of providing protection for purposes of natural resource conservation was being addressed with respect to other state mandates for land use and in particular the low/moderate housing provisions for cities and towns. Although development set-asides are being used in many places, this question is of major concern to land use planners at both the local and state levels.

3. **Briefing on the RIEMA Slosh Zone Mapping and FEMA (Flood Plain) Map Modernization Projects** – John Stachelhaus

John explained that Steve Kut (RIDOT) Jon Boothroyd (State Geologist) and he recently attended a meeting at RI EMA in which the subject was the generation of new hurricane surge and inundation mapping. In that meeting a representative from the USA Corps of Engineers (COE) offered to produce GIS layers based on a computer based model using new data and the NOAA Slosh Model indicating areas that would be inundated by storm surge from varying intensity categories of hurricanes. The project would depend on the ability for RI EMA to obtain funding to get NOAA to run their model, and the suitability of elevation data for the USA COE to do the mapping. Several other participants at that meeting indicated that Light Detection and Ranging (LIDAR) data would or could be available for the necessary elevation determinations for the land based mapping, however, it was somewhat unclear as to the sources. The COE representative had confidence that the RIGIS 1997 digital elevation model (DEM) was sufficient for the task, but that was questioned as well. A high point of interest for the GIS community may be the resulting availability of better elevation data for the state, a thematic data area that is currently weak in the RIGIS database.

John also informed the committee that FEMA and their consultants are continuing to create new digital flood insurance rate maps (DFIRMS) for the state. He had available draft maps from consultants for the FEMA region I office in Boston showing project scoping either completed (Bristol) or in progress for all five Rhode Island counties well as status of field work in progress in Providence county. Project completion for Rhode Island counties ranged from the years 2006 to 2009. John advised the members, (espcially cities and towns) that they would be contacted by one of FEMA's consultants about this project. Carol Baker said she already had, and they wanted the towns to complete a 35 page questionnaire for the project scoping phase. Again, a primary interest for the RIGIS will be newer flood plain data although again, the issue as to what elevation data is available and will be used is in question.

4. Release Announcement of the 2003/04 Orthophotos. **– Steve Kut, John Stachelhaus**

Steve and John announced the release of the 2003/2004 orthophotos on CDROM in a compressed MrSid MG3 format. Greg Bonynge added that he hopes to have them up on the RIGIS website in both MrSid and TIF format within a month. An on- screen display was generated showing several photos in the south coastal areas. Jon Boothroyd was particularly pleased by the water penetration observed in those areas from the aspect of coastal erosion studies.

Steve demonstrated the recently opened Microsoft http://live.local.com internet site with the Pictometry oblique photography obtained for RI E911 through RI EMA USDHS grant money. The question was raised as to whether government users in RI are bound by the RI/Pictometry license agreement or are open for free unrestricted usage available through the Microsoft site.

Spring 2006 Orthos – John Stachelhaus explained that Lynn Bjorklund notified him in October that the National Geospatial Intelligence Agency (NGA) had lost its funding for a spring of 2006 orthophoto project. In late November

Lynn said that the project was back on again with added USDHS funding to supplement NGA. Unfortunately the money that John had located through Statewide Planning in September is no longer available and chances of finding money within Rhode Island government at this point in the 2006/2007 fiscal cycle are not good. John had also investigated obtaining additional money from USDA and NOAA for this effort, but again funds for this federal fiscal year do not appear to be available. With that in mind, he will try to work through Lynn to see that if the project is completed for portions of RI that the image data can be made available through the RIGIS for other interests in the state.

5. Participant Round Table Review

a. **Statewide Planning** – John Stachelhaus has been working on a RFP for a new land cover/land use data set based on the 2003/2004 orthophotos and the RIGIS 1:5000 scale vector data sets. The consultant will hopefully be selected later this winter to start a one year project for a new statewide data set. Technical specifications for the GIS data are similar to the 1989 and 1995 LU/LC data set.
b. **URI/EDC** – Greg Bonynge announced that he and his wife have a new baby and he is taking some time off as a result. He is however, still working from home on several active GIS related projects. The RIGIS web portal project to rebuild the RIGIS web site is progressing, but is waiting for the URI legal staff and ESRI's legal people to iron out some differences in the licesne agreement to use the ESRI web portal software. Greg is also planning on helping host quarterly outreach sessions throughout the year. The first of which will be a visit from Pete Steeves from USGS to demonstrate new tool for managing water resources through a GIS application. Greg also intends to sponsor a workshop on field use of GPS in the spring.
c. **Fuss & O'Neil** - Sue Scanlon is concentrating on continuing the training program that Fuss & O'Neil if offering to GIS users in Connecticut and Rhode Island. Six courses were given in southern New England in 2005.
d. Maria Giarrusso reported that the **City of Cranston**'s GIS/IMS site is up and running in city hall making the use of GIS more user friendly to city employees. Work also continues on improving and updating the GIS database including information on infrastructure, and the parcel data set.
e. Janice Peixinho informed the members that **East Greenwich** is just starting to implement a GIS i in town hall, but expects to realize some of the benefits of the technology as early as March of 2006.
f. Suzanne Kogut reported that **Smithfield** has updated much of their GIS data based on 1997 aerial photography. This includes the generation of 2 foot contour elevation data and updates to the parcel data sets.

g. Ken Swain noted that the parcel data set as it presently exists for **Charlestown** requires a lot of work to meet town needs. The town has employed a GIS analyst on a part time basis to assist and they will be looking at updating the parcel data set using orthophotography and deed research on existing town records. They are working on developing an overall project plan and funding plan for use of the technology in Charlestown.
h. Lynn Carlson from **Brown University** announced that a project she had been working on for the RI Water Resources Board mapping trails and disposal sites with GPS has been completed for the Big River Water Management area. She also noted that work for the **Town of Coventry** GIS system continues in spite of that town's management and personnel limitation. She noted that emergency management maps and a study on subdivisions are in progress.
i. Steve Sawyer reported that a plan for responding to a possible avian flu pandemic is being developed at the **RI Department of Health** utilizing GIS as a primary tool. Dr. Gifford, the new Director at RIDOH has been very supportive of use of GIS within the agency. Steve also reported that training in GIS software for responding to catastrophic disasters (CATS) is being offered through the federal Centers for Disease Control (CDC).
j. Mary Hutchinson of **Mapping and Planning Services** has assisted the RI Water Resources Board by completing a build-out analysis using RIGIS data and an analysis model originally developed Applied Geographics Inc. of Boston Mass. She is also assisting the Town of Middletown, RI developing or enhancing their town GIS database using recently acquired high resolution orthophotography (6" pixel) and digital vector lines work developed from that imagery.
k. Rob Christina explained that he is just getting started with GIS at the **RI Water Resources Board** and is going through a self education process in use of the ArcGIS software. He will be attending training at URI this winter offered through the Cooperative Extension Service.
l. Eric Bodiker representing **USDA/NRCS** explained that Jim Turenne couldn't make this meeting, but is working with the URI EDC and Trimble Ins. to explore possibilities of a virtual reference system GPS for Rhode Island. He requested that anyone with an interest in this project contact Jim at NRCS.
m. Chris Galagan of **Applied Sciences Associates** recently attended a conference on GIS and homeland security. He was particularly impressed by the common picture presented by federal government agencies regarding data formats for data exchange during times of emergencies.
n. Jon Boothroyd, **the State Geologist**, explained and demonstrated through use of graphics the need for beach sand replenishment along beached on the south shore of Charlestown and South Kingstown. Channel dredging in the Point Judith Harbor of Refuge and boat

channel will be used to provide sand to some beaches utilizing long shore current effects to assist in the dispersion process.

o. Joe Klinger informed the group that one of his goals at **Ecotones Inc**. is in making technology usable for the clients of his company's services. He is tending to use more Autodesk/Autocad applications in his work due to the ease of use of this software for his needs. Ecotones has recently completed studies on sediment and eel grass concentrations of portions of Narragansett Bay.