L. A. Wasser
planning.
visualization
approved subdivision / conservation design alternative
Objective: visualize approved subdivision plan and conservation design alternatives that follow existing residential zoning and are similar in density to approved plan.

Partners: Centre County Planning Agency

Technology: Visual Nature Studio, 3d studio max, Poser, ArcGIS & ArcInfo (topogrid)
Design: Kelleann Foster

visualization - site design / rezoning request
Objective: visualize rezoning request / subdivision plan for halfmoon township; plan allowed for higher density development following the small town character of Stormstown Village along the corridor of route 550.

Partners: Centre Region Planning Agency
Design: Kelleann Foster
Technology: Visual Nature Studio, ArcGIS, ArcInfo (topogrid), Poser, 3d Studio Max
visualization of the John Smith voyages - 1608

near Calvert Cliffs State Park
Objective: visualize the Chesapeake Bay natural and cultural landscape and environment as experienced by John Smith in 1608.

Partners: Chesapeake Bay Gateway Program, Smithsonian, St. Mary’s City and others

Technology: Visual Nature Studio, 3d Studio Max, Poser, XFrog
data analysis planning
data collection

Centre County, PA

black data points represent existing buildings in Centre County

run model --> results

magenta data points represent new buildings following buildout analysis

growth forecasting & impact assessment - CommunityViz
Objective: use CommunityViz to perform build-out analysis and impact assessment for all municipalities in Centre County, PA; assess CommunityViz as a planning tool.

* Assessed impacts include: loss of prime farmland, water and sewer analysis (consumption, soils, etc), traffic analysis, and others

Partners: Centre County and Centre Region Planning Agencies, Township Supervisors from various municipalities in the county.

Technology: CommunityViz Extension for ArcView, ArcInfo, 3d Analyst
where students who live within the York campus service area go to school

where students who go to York Campus live (geocoded points)
Objective: analyze and assess Penn State Continuing Education service area boundaries.

Partner: Penn State Continuing Education

Technology: ArcGIS, Network Analyst extension

25 minute travel time boundaries (network analyst)
Objective: celebrate and interpret the historic Pennsylvania Mainline Canal route via a greenway connecting Pittsburgh and Harrisburg.

* GIS maps / database were utilized for education and outreach in public meetings.

Partners: many stakeholders across the state, PA Department of Environmental Protection, PA DCNR

Fact Sheets designed in Adobe Illustrator (went to press August 2002)
Objective: reclaim abandoned strip mines with sustainable, recreational off-highway vehicle (OHV) trail systems / parks.

Partners: PA DEP, PA DCNR, PA OHV, Stakeholder groups in the South / Central Portion of PA.

Technology: ArcGIS (attained through a PA DEP grant which I wrote in the Fall of 2001)
Objective: create a inventory, assessment and analysis plan document for the kettle creek Watershed.

* interdisciplinary graduate student effort
* landuse and demographic analysis were a primary focus of my analysis
* final product was a 300+ page document

Technology: ArcView 3, PageMaker, Photoshop, Excel
education.outreach
data collection (GPS) / base map

Halfmoon Township - Centre County, PA
Objective: analyze and map Halfmoon Township water system
* create educational modules that teach small water system managers how to use GIS to map, manage and analyze their water system
* Training Modules & Data: 2 part series to be available online via RGIS Web site (www.ruralgis.org).

Technology: ArcGIS, Spatial Analyst, 3d Analyst
2005 & 2006 camps - mapping halfmoon township water system using Garmin and Trimble units
this student chose to compare existing hand-digitized water system data with field acquired GPS data; students performed a variety of different analyses on water system data.
GIS BASICS
WORKING WITH ARCEXPLORER 9

PENNSTATE
Cooperative Extension
Geospatial Technology Program

ABOUT GIS

AN INTRODUCTION TO GIS

GIS stands for Geographic Information System. GIS allows you to combine and organize many layers of spatial information in a digital format — such as roads, houses, and buildings — also known as GIS THEMES. These theme layers can be combined to create maps that illustrate information about a place. We can use these maps to gain a better understanding of a place in addition to visually seeing what it is like, these layers or themes can be used for many purposes. Often, GIS can be used to make informed decisions about particular things. For instance, we can use GIS to find the best place to build a new home. Or we can use GIS to locate the best area in an area. For finding all the places we will look at why GIS is important and how it all fits into your everyday life.

THE KEY ARROW IN EACH PICTURE ON THIS PAGE REPRESENTS THE SAME VIEW:

Looking at the city of Philadelphia from the airport.

Looking at the city of Philadelphia from co-ordinates X:Y.
Objective: create a free series of ArcExplorer educational modules to promote use of geospatial technology to 4-H and other youth groups.
* hands on exercises and activities
* 3 workbooks and 1 leaders guide approved by PA 4-H and ESRI
* free downloads: ESRI, Pennsylvania 4-H, National Consortium for Rural Geospatial Innovations in America (RGIS) & PSU Geospatial Technology Program

Technology: ArcExplorer (free download) - data provided with manual; layout / content: Indesign, Illustrator & Photoshop
construction.implementation
Finished wetland mitigation project in Virginia

Virginia wetland mitigation site before

Stream restoration: soft & hard engineering installation
stream restoration: grading & installation of coir matting & live stakes
Objective: create stream restoration construction details for Environmental Quality Resources, LLC

Medium: Ink on Vellum
Objective: study art and science of stream restoration and related water quality and quantity issues in an urban context.

Illustrations: ink on vellum
publication.project promotion
Objective: provide support for the GIS for Local Government Conference - 2003-2005
* web site design and maintenance
* speaker coordination / compilation of speaker/abstract book
* database-driven (asp) online abstract and biography database
* creating of final online proceedings
Technology: html, asp, css, microsoft access
Run, Lititz Run

Community-based watershed planning succeeds in Pennsylvania.

By Leah Wasser and Michelle Brummer

Ten years ago, a few trout fishermen in southeastern Pennsylvania began improving the fish habitat in their local streams. Knowing that Lancaster County has the highest number of coldwater limestone streams in Pennsylvania, they thought it should have some of the best trout fishing in the state. But development was infringing on vegetated stream corridors, disrupting the wildlife population, and impairing natural filtration processes. Problematic agricultural practices, such as conventional tillage and cattle grazing, were contributing to erosion and downstream sedimentation. Sediment from eroding streambanks and agricultural and urban runoff had filled the once-deep, cool channel of one Lancaster County stream, Lititz Run, causing it to widen, shallow, and warm. Trout and shad populations, and the insects upon which they feed, could no longer tolerate these conditions.

Degraded stream conditions inspired the local chapter of Trout Unlimited to initiate restoration of Lititz Run from its headwaters in the town of Lititz.
Objective: provide technical support and create promotional materials for the AgMap Web site
* promoting pennsylvania agriculture
* http://agmap.psu.edu
* RGIS bulletin publish in 2006
Objective: create Web site and promotional materials to support the PA Farms project.
* web site provides educational materials and allows farmers to download maps of their home zip code
* supported by the Pennsylvania Department of Agriculture
Objective: develop curriculum for and teach Landscape Architecture 410

* Poser, SketchUp, FormZ

* Materials, calendar, updates and student work available online.

* mix of students including Landscape Architecture, Architectural Engineering, ITS and more
trastevere, italy
trastevere, italy
Spain
KETTLE CREEK WATERSHED PLAN
Typical Class “B” stream according to Rosgen Stream Profiling.
Rendering: Pencil on vellum; color added in Photoshop

SPRING CREEK RIVERS CONSERVATION PLAN (Graduate / Faculty Project)

* illustration of zoning recommendations developed to minimize development, agricultural and silvicultural impacts in riparian areas along Spring Creek. GIS mapping was also used in this analysis.
Senior Housing Development - State College, PA
Rendering: Pastel & pencil on blue print
Bald Eagle State Park, Pennsylvania
Rendering: Pastel, Pencil & acrylic paint on sepia
Pittsburgh Strip District Revitalization

bowers studio
Analysis boards from the Bowers Studio - an interdisciplinary effort between Architecture, Landscape Architecture and Architectural Engineering.

urban design: pittsburgh, pa