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Chad E. Yaindl, M.S.

Senior GIS Scientist

Mr. Yaindl is a GIS Scientist with a background in hydrology, surface water quality, water resources engineering, data management, and data visualization. He has developed nutrient and hydrologic budgets for watersheds and water bodies throughout Massachusetts and New Hampshire. Mr. Yaindl has conducted and supervised environmental field work efforts, including sampling of surface water, groundwater, sediment, and aquatic plants. He is familiar with traditional topographic and GPS-based surveying methods used in applications, ranging from groundwater well installation and cataloging to engineering and construction drawings. His work has focused on coastal watersheds, estuarine water bodies, and salt marsh restoration. Mr. Yaindl is proficient in a range of water quantity, quality, and hydraulics models, including HECRAS, HEC-HMS, ArcHYDRO, SWMM, and RMA2/4.

Areas of Expertise

- GIS & Spatial Analysis
- AutoCAD
- Water Resources/Hydrology
- Water Quality Modeling
- Environmental Statistics

Education

- M.S., Environmental and Water Resources Engineering, Tufts University
- B.S., Civil and Environmental Engineering, Lafayette College

Selected Projects

GIS Data Analysis: Managed GIS data for an allocation analysis at a former oil refinery. The analysis involved identification of pipelines and pipeline corridors, as well as characterization and cataloging of site-remediation activities and groundwater-monitoring data. The results of geospatial analysis, including remediation areas of influence, pipeline corridor areas, and areas of contaminated soil, were combined with cost data to assign remediation costs to the various owners and operators of the pipelines.

Radiation Alternatives Analysis: Prepared estimates of excavation volumes for several possible remediation alternatives at a landfill containing non-permitted hazardous waste. Volume estimates and excavation grading were prepared using ArcGIS 3D Analyst. Project deliverables included post-excavation grading plans and cross-sectional views of the landfill.

Remediation Cost Allocation Analysis: Statistically analyzed a large environmental data set to support a remediation cost allocation and modeling effort. Box plots, histograms, fitted distributions, and other statistical measures were used to characterize the data set for a wide range of contaminants of concern (COCs) and within varying project sub-areas. Managed project data using GIS, Microsoft Access, and Python.

Well Research: Conducted background research and produced maps depicting the spatial extents of adverse effects of a municipal supply well on nearby private wells.

Leaching Test Data Analysis: Managed sampling data and performed mass-transport analyses for the results of a lab-scale, long-term leaching test from solid monoliths composed of varying mixtures of cement and waste material. The data was analyzed and presented according to US EPA methodologies, including plots of concentration, flux, and diffusivity.

305(b) Watershed Analysis: Delineated watersheds for each 305(b) water body (*i.e.*, rivers, ponds, and estuaries) within Massachusetts. Watersheds were analyzed to provide the necessary data for completing a nine-element, watershed-based plan. Data, figures, and a web map were summarized on a website that allows users to select the watershed of interest and generate a basic, customizable watershed-based plan.

Estuarine Watershed Analysis: Delineated watersheds of 47 estuarine water bodies along the Massachusetts Bay coastline. Analyzed each watershed for a variety of ecological stressors and resources. The stressor and resource data was used to inform management prioritization, *i.e.*, estuaries with both sensitive ecological resources and heavy anthropomorphic stress could be prioritized for management.

Landslide Site Stabilization: Designed conveyance systems and a stormwater wetland in support of a building site stabilization effort after a landslide in western Pennsylvania.