



Huff & Huff, Inc., THE RELEASE

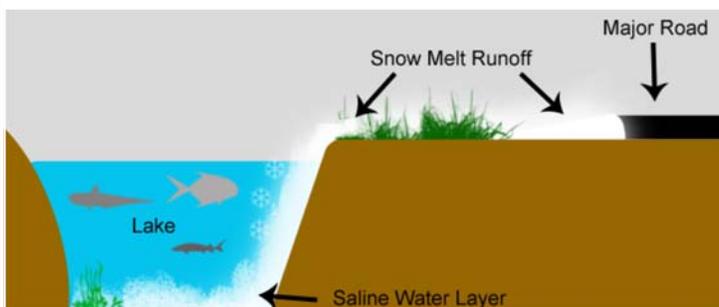
a subsidiary of GZA GeoEnvironmental, Inc.

FALL 2016

CHLORIDE TOXICITY CONSORTIUM FORMED

The chloride water quality standard in Illinois is a *not-to-exceed* 500 mg/L. In urban areas, this standard is routinely exceeded during highway de-icing runoff in the winter/early spring months, with chloride concentrations in most urban streams reaching concentrations above 1,000 mg/L during the worst events. Recent laboratory aquatic toxicity testing suggests that the Illinois standard should be lowered to less than 200 mg/L from a chronic perspective. Such a change will require a reduction of over 80 percent in de-icing salt application during the most severe snowfall/freezing rain events. The Illinois EPA has actively encouraged watershed groups to seek a temporary variance from the chloride standard in conjunction with instituting *Best Management Practices* (BMPs) with respect to de-icing salt application to achieve the necessary reductions to meet the water quality standard. New growth in urban communities, including roadway expansions, will require chloride offsets under the current state and federal policies.

There are a number of problems with the current approach. First, while BMPs are absolutely a good practice and should be promoted, it is highly unlikely that either a 500 mg/L standard, or a 200 mg/L standard can ever be achieved. Second, the laboratory aquatic tests used for development of the standards, have all been conducted between 20 and 26°C, much warmer than winter stream temperatures. Limited laboratory toxicity testing suggest chlorides are not as toxic at colder temperatures. In addition, limited surveys on streams that achieve summer chlorides less than 200 mg/L, but exceed 500 mg/L in the winter have been shown to support healthy aquatic communities.



The Illinois Pollution Control Board will likely open a regulatory docket in 2017 to address the chloride water quality standard, (along with a number of variances being sought from the current standard). After trying and failing to get Region V EPA to fund the needed research on colder temperature toxicity, Huff & Huff has assembled a consortium of the Tollway, County, Municipal, and Industrial organizations to fund this research. An

estimated \$100,000 is needed to complete this work through the hearing process, and to date \$80,000 has been raised. The Illinois Natural History Survey is conducting the acute and chronic colder temperature (10°C) on three sensitive species and Aquatic Toxicity Laboratory is conducting the testing on a fourth species. This work is under way and will be completed in the second quarter of 2017, at which time the consortium will prepare its findings and recommendations for a winter chloride water quality standard.

This is important work for the economy in northern Illinois, and without any initiative from our regulatory agencies to undertake this work, this consortium offers the best opportunity to resolve this issue, which is taking a significant amount of resources currently devoted to variance petition preparation. We would welcome additional members to our consortium. Please contact James Huff at james.huff@gza.com for additional information.

NEW HIRE ANNOUNCEMENTS

Huff & Huff is honored and proud to announce two new talents to its roster – please welcome Jay Womack and Linda Hutchins! Linda comes to us from the East Coast, fresh off a lengthy stint at the Massachusetts Department of Conservation and Recreation. Geology and hydrology are among the skills in her wheelhouse. Jay is an award-winning landscape architect, so accomplished in his field that his knowledge overflows into the students he teaches at his Illinois Institute of Technology courses. He guides his projects in such a way that economic and environmental growth are shared goals, not mutually exclusive rivals.

There is one element critical to both their livelihood: water. For Linda, she left the varied topography of Massachusetts for our glacier-flattened Midwestern lands – but flooding issues remain a constant. Her experience includes watershed management.

Jay finds water issues one of the most challenging aspects of landscape architecture. “Water can be your friend, make it into a positive,” says Jay, noting that before water gets tagged with the derogatory label ‘stormwater’ it was, after all, known as “rain.” The drops add up quickly, Jay notes, quickly rattling off that here in the Midwest we typically receive 37.5 inches of rain per year. That makes for an annual total of 1 million gallons per acre, 80% of the time delivered in rainfall events of less than a quarter inch. Jay sees this as an excellent opportunity to incorporate water features into a landscape environment, and help prevent flooding at the same time.

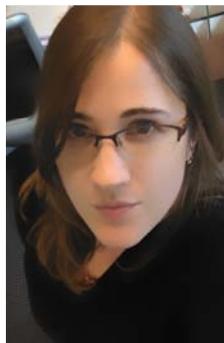


Jay in his free time volunteers for Geneva Park District and Natural Resources Committee of Geneva organizing Earth Day Celebrations and the annual Autumn Fair. On Linda’s off hours you’re likely to find her on outdoor adventures with her little dog ‘Franklin,’ and maybe even her husband too. But if Franklin is a forethought, it’s because he’s been known to accompany Linda on jobs as well, providing companionship while she makes stream measurements, or even trampling along while Linda snowshoes through a field. So perhaps we should say “Welcome to H&H, Jay, Linda...and little Franklin too!”



WAY TO GO EMILY!

Keep moving, or fall behind. Certainly this is true in the ever-expanding environmental field. At H&H, our personnel have traditionally spent their copious free time in efforts to stay on top of their chosen field. Our latest successful example is Professional Geologist Emily Sturnfield.



Emily enjoyed the fruits of many months of studying in 2016, as she earned the right to trail her name with a couple of critical initials. For Emily, it’s “P.G.” after passing the Illinois Professional Geologist test in March. She earned her B.S. from Northern Illinois University and her M.S. from Missouri State University. Specifically, her expertise includes Preliminary Environmental Site Assessments (PESAs), subsurface investigations, remediation, Underground Storage Tank (UST) removals, and special waste determination.

NEW OFFICE LOCATION ST. PAUL, MINNESOTA

We are now offering our full range of services in the great State of Minnesota! Jamie Bents, one of our Senior Project Managers, has moved to Saint Paul, MN and is ready to connect you with any GZA service. We are excited to explore opportunities in Minnesota with you. Please contact Jamie at jamie.bents@gza.com or (630) 684-4409.



The ASTM E-2247-08 Standard Practice for Phase I Environmental Site Assessments for Large/Undeveloped Properties



Although most clients are aware of the ASTM Standard Practice for conducting Phase I environmental site assessments, (known as the “E-1527-13 Standard Practice for Phase I Environmental Site Assessments”), many clients are not aware of the ASTM Standard Practice for conducting Phase I Environmental Site Assessments for large, undeveloped properties (known as the “E-2247 Standard Practice for Phase I Environmental Site Assessments”). One of the issues that is commonly encountered when conducting a Phase I Environmental Site Assessment of a large, undeveloped property is that it is impractical to walk and observe every square foot of the site being assessed. The E-2247 Standard Practice is intended to be applied to properties, such as rural agricultural sites or forestland, that are over 120 acres in size, and provides the party that is performing the Phase I (defined by the E-2247 Standard as the “environmental professional”) options for conducting the site reconnaissance (i.e., site visit) portion,

For example, for those areas on a site that may be difficult to physically observe, the E-2247 Standard allows for the use of remote sensing, such as use of aerial photographs, or the use of historic topographic maps, as a procedure for inspecting the site, then allows for the use of the aerial photographs or historic topographic maps to identify areas of potential concern (e.g., disturbed soils), and then physically inspecting the areas of concern. The E-2247-08 indicates that flyovers can serve as another option, and with recent interest in the use of aerial drones, such devices are another option for satisfying the requirements of the E-2247 Standard. In the situation in which a property cannot be accessed at all, the E-2247 Standard allows for viewing the site from nearby vantage points.

The E-2247-08 Standard also provides that “[t]he periphery of the property shall be visually and/or physically observed where accessible, as well as the periphery of all structures on the property, and the property should be viewed from all adjacent public thoroughfares. If roads or paths are observed on the property, the use of the road or path shall be identified and evaluated to determine whether it was likely to have been used as an avenue for disposal of solid waste, hazardous substances, or petroleum products.”

While not required to be used to meet the requirement to conduct “all appropriate inquiry” to satisfy the CERCLA innocent purchaser defense, (i.e., one can still use the E-1527-13 Standard Practice for large properties, if desired), the use of the E-2247-08 Standard Practice provides an option for conducting Phase I ESAs that may save a client time and money.

Going Green begins by Thinking Blue

The Midwest region receives approximately 37.5 in. of precipitation per year, or about one million gallons of water per acre per year. If you equate that to a piece of property that is even modest 25 acres, you are looking at 25 million gallons of precipitation that fall on the property – every year. With the advent of conventional development practices (large tracts of impermeable surfaces), most, if not all of that water ends up somewhere other than back in the ground where it can no longer recharge local aquifers or re-enter the ecological circle for plants and animals.



To break the cycle of conventional land development and acres of impermeable surfaces, a few simple tools can be used to make our sites more permeable, including; *rain gardens, bioswales, native habitat restoration, permeable pavers, and green roofs.*

With these tools in hand, now imagine a place where rainwater and ecology are part of every day life, where amenities around the place where you work, live, and play are developed upon a framework of design principles that reintegrate people into the environment. A place that cherishes the environment as an asset, where open space is based upon a system of living, native landscapes, and where rain is treated as a resource, not a waste product.

On every project, we try to indoctrinate this type of thinking to make the imagination a reality. In fact, it’s not as complicated as it might sound. The process begins with two design precepts that are paramount to making this dream come true — make the site more permeable, and reinvest in our native landscapes. When we do this, we are all taking a step to protect the environment and heal the earth.

HICKORY CREEK BIO-BLITZ IS A BIO-BLAST

Saturday, September 10th, 2016 marked the third annual Hickory Creek Bio-Blitz hosted by Hickory Creek Watershed Planning Group (HCWPG). Hickory Creek Watershed is host to many rare plants and animals, and a vital watershed worthy of preserving for future generations. The Hickory Creek watershed, a sub-watershed of the Lower Des Plaines Watershed, spans 109 square miles and includes 13 municipalities. Due to anthropogenic activities in the recent past, environmental degradation has occurred. This has included, but is not limited to, increasing stormwater volumes resulting in erosion, chlorides from deicing practices, and discharges of treated wastewater. As a result, a group of residents, village and county leaders, and conservation groups in 2007 created the Hickory Creek Watershed Planning Group (HCWPG) with the goal of improving the aquatic life and water quality in Hickory Creek and its tributaries.

As part of the watershed management efforts, HCWPG hosted over 50 volunteers this year as they collected macroinvertebrates and water quality samples. Bio-Blitz is a one-day aquatic assessment where volunteers assist with the collection of macroinvertebrates that are later identified by a professional aquatic biologist from Huff & Huff. The initiative is part of HCWPG's on-going efforts to conduct public outreach and establish a baseline aquatic community assessment. As HCWPG works toward implementing stormwater best management practices (BMPs, pre- and post-monitoring of water quality conditions throughout the watershed will be critical. Five sites were sampled on Hickory Creek and its tributaries this year. Macroinvertebrates collected this year include, but not limited to, caddisflies, midges, beetles, and damselflies.

The Village of New Lenox's Public Works Department provided the public with tours of its wastewater treatment plant #1. The City of Joliet Park District at Pilcher Park, Village of Tinley Park, New Lenox-VFW, and the Village of Mokena also hosted sampling sites. Congressman Foster (11th District of IL), Joliet Junior College, Tinley Park Environmental Commission, Land Conservancy of Will County, Victor Andrew High School-Green Team (Tinley Park, IL) and representatives from Joliet West High School, Tinley Park High School, and St. Thomas University (Joliet, IL) were in attendance this year. For more information: <http://www.hickorycreekwatershed.org/>.



*Volunteers sorting macroinvertebrates
Pilcher Park-Hickory Creek (Joliet, IL)*



*Congressman Foster and public tour New Lenox
Sanitary Treatment Plant (New Lenox, IL)*



*Hickory Creek 2016
Bio-Blitz
New Lenox STP Loca-
tion-Hickory Creek
(New Lenox, IL)*

Chicago District Corps of Engineers 2017 Regional Permit Program Public Notice

On **August 1, 2016** the U.S. Army Corps of Engineers, Chicago District issued a public notice to request comments on the proposed modification of the Regional Permit Program. The RP program replaces the use of many of the Department of the Army Nationwide Permits (NWPs) in the six-county Chicago region, incorporating Cook, DuPage, Kane, Lake, McHenry and Will Counties in Illinois. The RP program provides efficient means to evaluate projects requiring authorization under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Examples of changes to the RP program include:

- Clarified definition of “impact”, and removed the term “temporary impact”.
- Added the Illinois Coastal Management Program as a General Condition.
- In Regional Permits 1 (Residential, Commercial, and Institutional Developments), 2 (Recreation Projects), 3 (Transportation Projects) and 8, (Utility Line Projects); Best Management Practices were revised to provide additional guidance towards fulfilling the requirement, including examples of acceptable BMPs.
- For RP3, the **minimum** 0.25 acre impact limitation for a single crossing is removed, **so any impact triggers a requirement to seek a permit.**
- The consideration of arch-span and bottomless culverts for perennial stream crossings is no longer required for RP3.
- The 0.25 acre limit for temporary impacts (RP7) is changed to minimum necessary to complete the activity.
- Under RP3 for bridge and culvert crossings, the cross-sections up-stream and down-stream of the crossing are required and the crossing must be designed to maintain the width of the base flow channel.
- RP 9 was revised to specify that the replacement of culverts is not allowed if it impedes low water flows or the safe passage of fish and aquatic organisms.

A list of substantial changes can be found on the U.S. Army Corps of Engineers website here:
<http://www.lrc.usace.army.mil/Portals/36/docs/regulatory/publicnotices/2017RPPchanges.pdf>

The proposed 2017 Regional Permit Program in its entirety is found here:
<http://www.lrc.usace.army.mil/Portals/36/docs/regulatory/publicnotices/2017RPPdraft.pdf>

Comments are due by 10/01/16



Integrative Approach to Chloride Variance Management using Web ArcGIS

The Lower Des Plaines River Chloride Workgroup (LDPRCW) is planning to expand its water quality monitoring program during the upcoming winter months in preparation of a variance request for the winter chloride water quality standard. H&H developed watershed maps depicting the point source discharges, including stormwater outfalls locations to the extent such information was available in the public domain. In order to integrate a collaborative approach to the development of the watershed maps, H&H utilized the Web ArcGIS, a secure online interactive ESRI ARC GIS tool, to geospatially represent water resources, outfall locations, monitoring locations, and watershed features. The Web ArcGIS tool has proven to be an effective tool to link data layers with online permit reports and engage stakeholders throughout the decision making process for future chloride monitoring.

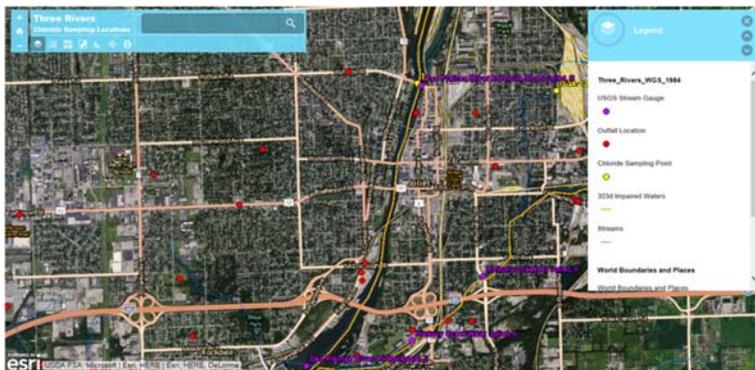


Figure 1: Web Arc GIS Tool used for Lower Des Planes River Chloride Workgroup

Huff & Huff, Inc.
Environmental Consultants
915 Harger Road, Suite 330
Oak Brook, IL 60523

Visit us on the web at:
www.huffnhuff.com



Trimble R1 Bluetooth GNSS GPS.

Geospatial Information Management and Solutions

While technology advances over the last twenty years have moved engineering and design drawings from the drawing board into the digital realm with personal computers in the office, geospatial technology has expanded the value, access and management of that information outside the office into the palm of your hands with mobile GIS.

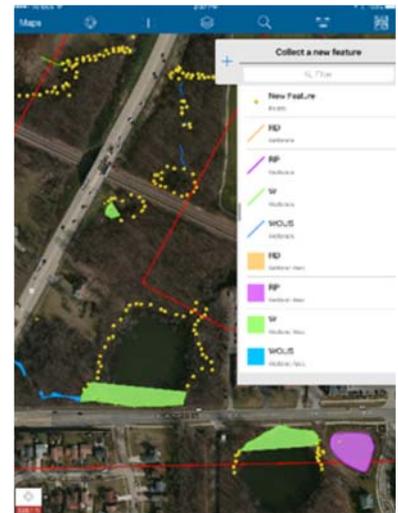
Huff & Huff employs geospatial technology built on the ESRI ArcGIS Platform using a combination of mobile, desktop, and web GIS for field inspections and documenting

(mapping) their locations along with linked standardized electronic forms and

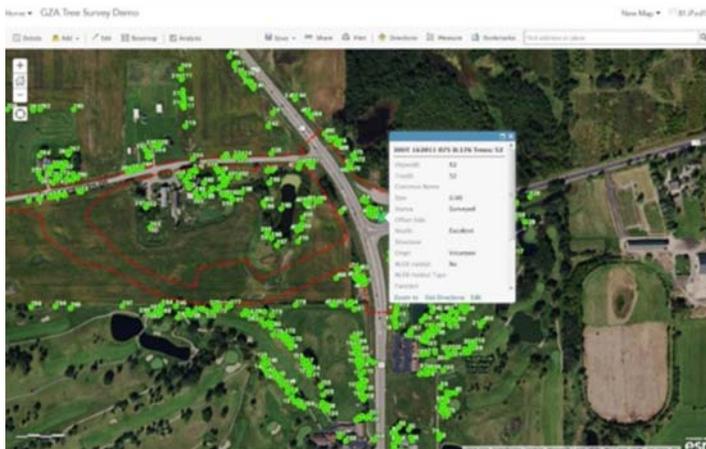
site photos. This provides an effective and efficient approach for managing field operations and inspections while providing transparency, access, and oversight for all stakeholders via a secure project web mapping application.

This approach to data collection and information management is routinely employed by Huff & Huff on numerous project types including asset management and oversight, biological resources inventory, threatened and endangered species monitoring and

protection, habitat investigations and monitoring, site investigations, contaminant and plume mapping to name a few. These tools are employed throughout the project lifecycle and are often used for stakeholder communication and collaboration as well as engaging and/or informing the public. H&H can host all the data on our secure servers or the geospatial information can be integrated into the clients own existing geospatial infrastructure.



Mobile data collection on an iPad using Esri's Collector for ArcGIS.



Screen capture of secure GIS web mapping application and dashboard for wetlands field data collection.