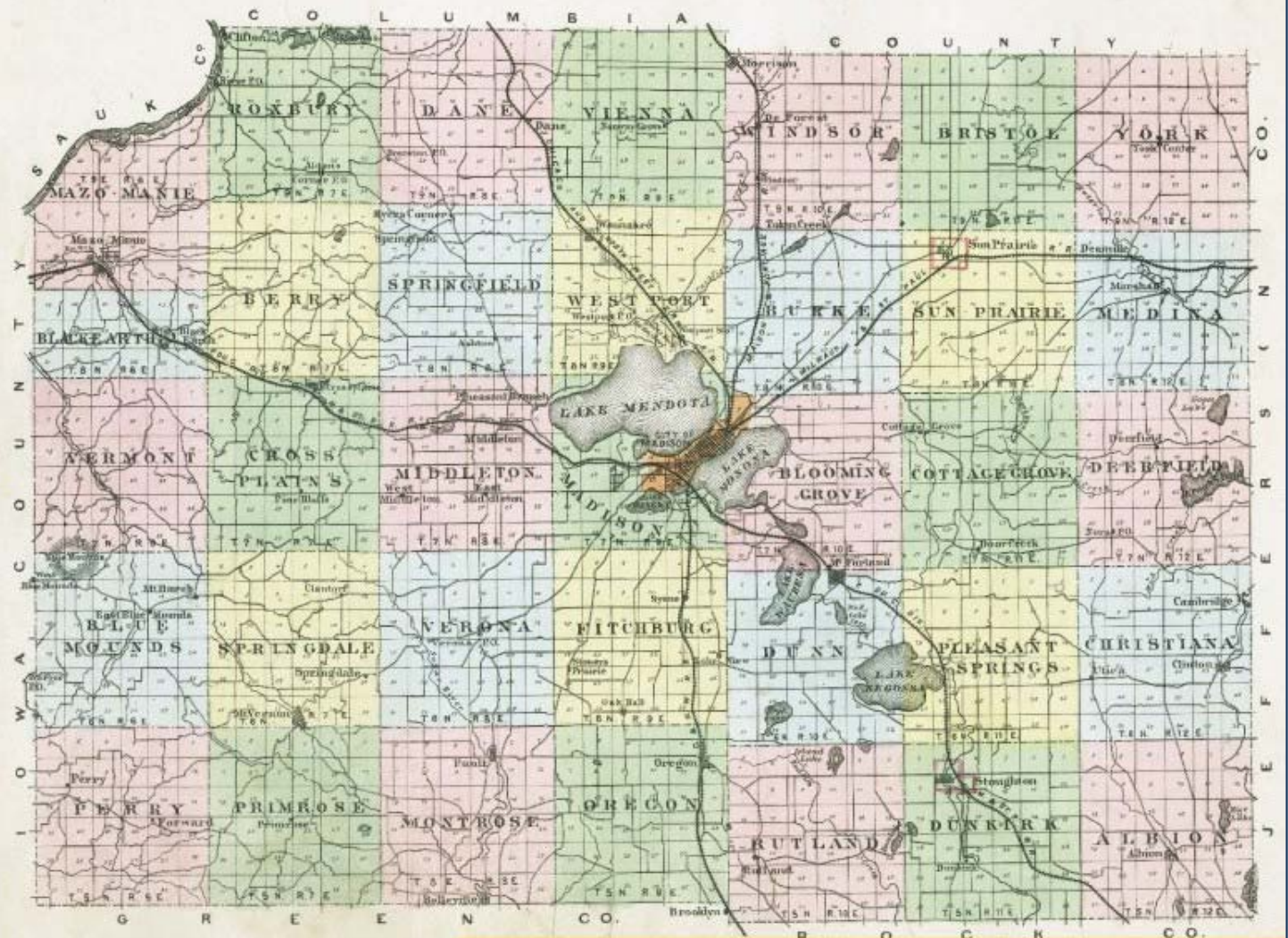


2014 Annual Report

Dane County Land & Water Resources Department

1873 Plat Map

Outline Map of DANE CO. WIS.



*What's most important is not
what we were, or even what we are,
but what we are becoming...*

Greetings From County Executive Joe Parisi

One of the greatest honors of serving as your County Executive is the work that goes into bringing people together to share ideas and develop solutions to what challenges us as a community.

Our lakes are a really big deal. They are so important to our quality of life, attract families—whether visiting for the weekend or moving here to call our community home—and are vital to our economy.

The shared efforts underway to clean them up will take a lot of cooperation, creativity, and collaborative partners to get the job done. Our common goal: Keep pollutants like phosphorus off the land and out of the water. Together, we're making good progress.

Partnering with farmers near Middleton, health care provider Gunderson Lutheran, and MG&E, this past year we started operation of a second "Cow Power" facility to keep manure off the land and convert it into enough green energy to power 2,500 homes.

We helped farmers acquire additional storage for manure, reducing the need to spread when the risk of runoff is highest.

Business planning is now complete and a new high-tech system will be installed in the Mendota watershed this year to convert millions of gallons of manure into clean water.

We are matching dollars with local communities like Middleton, Madison, and Monona to stop the unfettered, unfiltered flow of storm water straight into our lakes.

There is much more to come!

This year's Dane County budget has another \$10 million slated for lake improvement projects. We are ready to work with the partners we have pulled together to build upon our successes in the coming year and beyond. Farm by farm, field by field, we are helping farmers lead the fight against phosphorus.'

Together, we are cleaning our waters and maintaining one of the most productive dairy industries in the entire country. It's the right thing to do for our lakes, our lands, our economy, and the quality of life we love here in Dane County.

A Note from the Director

Welcome to this year's edition of the Land & Water Resources Department (LWRD) Annual Report. This is our opportunity to summarize and highlight accomplishments made during the past year—and 2014 was a particularly exciting one. Our Parks Division saw the construction of two new shelters. The shelter at Stewart Park was fashioned from trees harvested within the Dane County Parks system, including wood shake shingles taken from trees in Stewart Park itself.

In another step towards sustainability, Gunderson Health Systems commissioned the second Dane County cow-powered manure digester, converting cow waste to electricity. The digester will prevent an additional 3,600 pounds of phosphorus from entering our waterways annually, while providing electricity for 2,500 homes. Experts expect the digester to reduce local greenhouse gas emissions by 22,000 tons per year, about the same amount as 4,000 vehicles.

The 2014 county budget saw the creation of the Water Resource Engineering Division. This new division is responsible for construction-site storm water management and enforcement responsibilities as required by Chapter 14 of the Dane County ordinances.

Land Conservation Division will continue to provide planning assistance and technical service to support landowners in conservation implementation.

At the core of each of this past year's accomplishments are the hard working staff members of the Land & Water Resources Department. I heartily extend my gratitude to them for the service they provide to Dane County. Their efforts lay the groundwork for the enjoyment and protection of our natural resources. A testament to these efforts can be seen in our Annual Report, which highlights the 2,227,000 visitors to our parks and natural areas last year, and the 11,000+ landowners and contractors who received technical and planning assistance, all with the goal of keeping our soil in place and our waters clean.

I hope you enjoy our 2014 Annual Report, and if you have any questions or comments, please feel free to contact me at connors.kevin@countyofdane.com, or 608-224-3730. Stay tuned for next year's LWRD Annual Report—lots of exciting projects and developments are underway!

Kevin Connors, Director

Department Awards

Bob Rundle, Duane Wagner, Pete Jopke, Michelle Richardson, Jason Tuggle, and Rhea Stangel-Maier—

Land & Water Resources Department "Making a Difference Award"

Darren Marsh, Parks Division—Wisconsin Parks and Recreation Association "2014 Parks and Recreation Award"

Sara Kwitek, Real Estate Division—Southern Wisconsin Trout Unlimited "2014 Trout Conservation Award"

Lussier Family Heritage Center: Looking Back—and Forward

Fourteen years ago, the Lussier Family Heritage Center opened its doors to the public. A full-time manager was hired in August 2001. The previous seven years consisted of planning and fundraising, under the leadership of the former Dane County Parks Director, Ken LePine. Ken and a few other parks enthusiasts had a vision of a kiosk installed in Lake Farm Park that would display environmental and cultural information about the park and surrounding area. As discussions progressed, the concept of a multipurpose facility bringing people together for recreation, environmental education, and cultural activities began to emerge. By providing opportunities for youth and adult learning, volunteerism, recreation, and special events, the center would serve as the focal point of the park. This new facility would be available for public fee-based rental, while other educational functions, such as a historical museum, archaeological exhibits, and interpretive displays, would be developed over time.

Public use has been achieved, though funding for some of the other ideas has yet to be realized. Event bookings consist of cultural, historical and environmental education, as well as recreation. About 75% of users are government and non-profit organizations, and 25% are for-profit business and private

party users. Utilization rate has been steady 75 to 80%. It has become a sought-after destination for weddings and other special family and friends events.

The original concept of the Heritage Center will be achieved some day, but for now the Center's numerous users consider it a valued resource that benefits the community on many levels.



Lussier Family Heritage Center

Success for the Springfield Digester

The second of Dane County's two digester projects came online in the town of Springfield in 2014. This facility is owned by GL Dairy Biogas, LLC and is operated by US Biogas LLC. Approximately 25 million gallons of manure per year from three farms was processed by the facility producing enough power for 2,500 homes while removing 44,000 pounds of phosphorus from the watershed in the form of composted fiber. This export of phosphorus results in a 25% reduction in phosphorus reaching nearby surface waters or roughly 3,750 pounds annually.

The facility is unique in that it contains a 71,000 square foot composting building that allows for the phosphorus-rich fiber to be turned and composted while preventing it from coming in contact with extreme temperature and moisture conditions. This composted fiber is then removed from the facility and packed into an organic fertilizer by Purple Cow Organics, LLC. In addition to the composting building, a 15 million gallon concentrate and digestion storage lagoon is available. The lagoon allows for the facility to receive manure from other (non-participating) livestock producers that need emergency temporary storage as a result of full or failing storage. In 2015,

the Middleton Digester facility will be exploring the implementation of additional phosphorus removal technology to remove nearly 100% of the nutrients from manure. This technology would result in creating a nutrient rich substrate with 50% less volume than the manure volume currently being sent to the facility. The remaining 50% of the volume would be in the form of clean water that could either be discharged to the Pheasant Branch Creek, irrigated on growing crops, or used for livestock watering.



Springfield Manure Digester

Changes to Winter Manure Spreading Permits

The Department sent out letters to all operators who previously held Winter Manure Spreading Permits for changes in the ordinance. Permits are now valid for three years instead of in perpetuity, and Water Resource Engineering staff will be involved if the need for enforcement arises. Previously issued

permits expired on October 31, 2014. Land Conservation received 80 permit applications in 2014. Staff reviewed the spreading maps, emergency response procedures, and spreading logs, and updated the items as needed before issuing a new permit.

Real Estate Division

Dane County is committed to partnerships that protect land and water resources and provide recreational resources for our residents. Our 2014 accomplishments include:

- **Blue Mounds Natural Resource Area:** Purchased 80 acres adjacent to Brigham County Park in the Town of Vermont. The property also abuts a large block of land protected under conservation easements held by the county and The Prairie Enthusiasts. The property will be managed as a Dane County Wildlife Area and will be opened up for public hunting this fall.



Property on Crystal Lake

- **Fish Lake Natural Resource Area:** Purchased almost 80 acres of beautiful lakefront property on Crystal Lake in the Town of Roxbury. The property will provide a location for the development of a new boat launch on Crystal Lake, which is one of the key recommendations of the recently adopted Lussier County Park and Fish Lake Natural Resources Area Master Plan. The acquisition also protects 4,100 feet of natural shoreline on the south end of Crystal Lake that offers outstanding shore fishing and other recreational opportunities.
- **Westport Drumlin Prairie:** Awarded a grant to the Natural Heritage Land Trust to purchase a 5-acre restorable prairie in the Town of Westport that buffers the 200-plus acre Westport Drumlin Prairie within the DNR's Empire Prairie State Natural Area. The property will be

open to the public for hiking, hunting, trapping, cross-country skiing, bird watching, and nature appreciation. The Natural Heritage Land Trust is also exploring the possibility to use the land for growing native prairie plants that can be used for prairie restoration purposes.

- **Streambank Easements:** Purchased one streambank easement along a half mile stretch of Pleasant Valley Branch, a cold water trout stream that flows into Kittleson Valley Creek in the Town of Perry. Since 2007, the county has purchased 30 streambank easements covering 19 miles of trout streams.
- **North Mendota Trail:** Purchased a public pedestrian and bicycle easement 75 feet wide and approximately 3,500 feet long as a crucial link for the trail connection from Pheasant Branch Conservancy to Mendota County Park and Governor Nelson State Park with further trail plans north to Schumacher County Park.
- **Easement Monitoring:** Developed field activities to monitor conservation easements, agricultural easements and stream bank easements for compliance county-wide. Monitoring is conducted annually or bi-annually on over 60 properties involving hundreds of acres.
- **Crop Leases:** Managed crop leases with local farmers on nearly 3,000 acres of county-owned land. Revenues are used to provide valuable restoration and management resources for park operations. Farming is used as an effective landscape management tool that supports the local economy while lands are prepared for long-term public use.

PARC Grants Improve Community Recreation Opportunities

The Partners for Recreation and Conservation (PARC) grant program continued to be a popular and successful program in 2014. Municipalities and non-profit organizations brought forward projects that offered multiple outdoor recreational and natural resource benefits. Matching grants totaling \$688,650 in county funds were provided as follows:

City of Middleton: \$122,450 to develop a 1.5 mile bike trail linking Pheasant Branch Conservancy with Graber's Pond

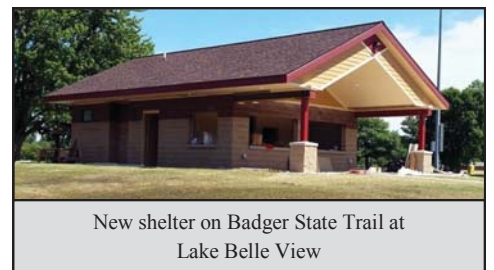
Wolf Run Association (Mazomanie): \$45,000 to construct the second phase of a two mile multi-use trail linking Mazomanie to Wisconsin Heights High School, a segment of the proposed Good Neighbor Trail

Village of Blue Mounds: \$26,408 for shelter improvements at Mounds View Park along with a new path to connect the park with the state's popular Military Ridge Trail

Village of McFarland: \$42,718 for construction of a bike trail within the Grand View Marsh Conservancy to connect the Village with the Lower Yahara River regional Trail

UW Foundation (UW Arboretum): \$122,000 for an extensive prairie and oak restoration in the UW-Arboretum south of the Beltline

City of Village of Belleville: \$169,708 for a new trail connection from the Sugar River and Lake Belle View to the Badger State Trail. \$75,000 for assistance in construction of a new shelter, restrooms, and a rest stop for cyclists using the Badger State Trail

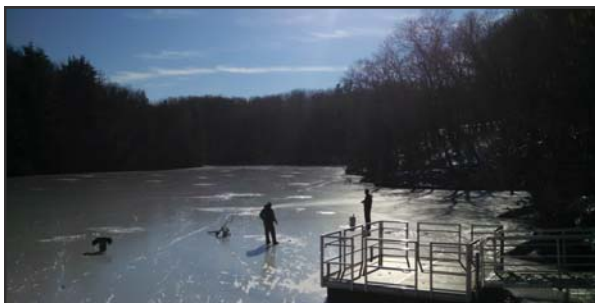


New shelter on Badger State Trail at Lake Belle View

Fitchburg: \$5,000 for interpretive signs located along the Badger State Trail focusing on Fitchburg's agricultural history

City of Madison: \$80,000 to support the construction of two splash pads in the City of Madison, located in Elver and Reindahl Parks

Parks Division



Anglers take advantage of popular fisheries beneath frozen Dane County lakes

Even with extremely cold temperatures, the winter of 2014 was conducive to great outdoor recreational opportunities. Record snows created outstanding cross-country skiing, snowmobiling and ice fishing conditions. County snowmobile trails were open for more than 70 days, which was unusual for southern Wisconsin. Dane County lakes were popular venues for thousands of winter anglers who were able to take advantage of the outstanding fisheries beneath the ice. Park facility use increased over 2013 in most areas including lake access 17%, Tenney Lock 12%, dog parks 13%, shelter use 10%, and special events 10%. Camping was also up over 8%.

The park volunteer program, which began in 1989 with the Friends of Schumacher Farm County Park, reached a 25-year milestone in 2014. Since its inception, the Friends of Dane County Parks has grown to 14 friends groups, with over 4,000 volunteers contributing more than 40,000 hours each year. Many of the original volunteers still remain active supporting the parks and county lands.

A similar passion for volunteerism and the protection of our environment can be found in the Dane County Park Commission. Many of the members have been volunteering their time for years, one member for more than 27 years. Last year, the Park Commission, working with the family of Phil and Libby Lewis and other committed park people, developed the Friends of Dane County Park Endowment through the Madison Community Foundation (MCF). The Endowment will help support the Park friends groups and volunteers, and further the mission of the county parks. MCF, a major Endowment partner, has contributed over \$500,000 to county park projects in the last several years, and the community-supported Endowment has raised more than \$230,000.

Park Development Projects:

Park Bridges

- Nine Springs Creek, Capital Springs Recreation Area
- Deer Creek, Donald County Park
- Tributary, Six Mile Creek, Waunakee Prairie Natural Resource Area

New Timber Frame Shelters

- Brigham County Park
- Stewart County Park

Trail Projects

- Brigham County Park to Military Ridge Trail
- Capital City Trail – Culvert Replacement
- Seminole Mt. Bike Trail System

Interpretive Sign Design Projects

- Donald County Park
- Gilman Mounds

Park Land Access

- Capital Springs State Park – Libby Road Parking Lot
- Capital Springs Recreation Area – Upper Mud Lake Access
- Falk- Wells Sugar River Wildlife Area
- Prairie Moraine County Park – Dog Exercise Area

Water Access Projects

- Mendota County Park Sea Wall Repair and Boat Camping Upgrades
- Token Creek County Park – Sedge Meadow Boardwalk Updates
- CamRock County Park Canoe Landing

Planning Projects:

Master Plans

- McCarthy County Park
- Silverwood County Park

Trail Plans

- Lower Yahara River Design/Environmental/Engineering
- Dane County Wayfinding Plan

Facility Planning

- Schumacher Farm Center for Rural History - Restrooms
- Token Creek Storage Building
- Libby Road Storage Building
- Silverwood Stone House Restoration – Meeting Hall
- Lake View Hill Park Nurses Dorm Historical Interpretive Area and Stormwater Management

Restoration Projects (Volunteers) - Park Naturalist

- Collected 805 pounds of prairie seed with over 90 species of flowers and grasses
- Conducted six prescribed burns on approximately 100 acres
- Supported 30 restoration projects

Park users	2,227,000
Trail users	164,000
Volunteers	3,102
Volunteer hours	39,298
Visitors to the Lussier Family Heritage Center	19,991
Visits to Dane County Parks website	156,000
Visits to reservedane.com	42,000
Special events held in parks	140
Number of boats locked through Tenney Lock	7,428

How to Frame a Shelter? Use Locally Grown Timber

Utilizing locally grown trees or reclaimed wood products for construction materials is certainly not a new concept on the commercial and residential building scene, but new to county park systems. The concept is a good fit for Dane County Parks as many properties that are purchased include old timber frame buildings that are in disrepair and should be removed. Parks operation staff is also continually removing trees throughout the



A timber frame park shelter at Pop's Knoll in Donald County Park

park system for oak savanna restoration, forest and invasive species management, and trail corridor clearing projects.

Dane County Parks constructed their first timber frame shelter at

Donald Park in 2008 out of barn beams reclaimed from a demolition project.

In 2010, a timber frame park shelter was constructed at Scheidegger County Forest, utilizing trees for building materials that were harvested from the property through recommendations of a DNR forest management plan. In 2014, two timber frame shelters were constructed, one at Brigham and one at Stewart County Park, that utilized trees harvested through a trail

building project and emerald ash borer mitigation plans.

What have we learned from four timber frame shelter projects and six years later? The cost to

construct timber frame shelters is comparable or maybe a little less than traditional park shelter construction methods. Every project will take more trees than the architect's material estimate due to the unknown quality of forest grown trees as opposed to using commercially grown timber. We also have learned timber frame construction is a specialized building practice that only a select few contractors provide. Coordinating tree harvesting and milling can be tricky as there is only a small window of time in the winter months when it should be completed.

The "locally grown" timber frame approach to park building projects has continued with two shelters to be constructed at Festge County Park in 2015, and another planned for construction at Indian Lake County Park in 2016. Timber frame shelters are also planned in the future at Lussier, Donald, Fish and McCarthy County Parks.



Newly constructed shelter at Stewart Lake County Park in Mt. Horeb

Dane County Parks Expands Hunting and Fishing Opportunities

Outdoor enthusiasts are finding new expanded recreational opportunities as the county opens more natural resource lands for public use.

Three new Wildlife Areas opened in 2014: Halfway Prairie, Falk-Wells Sugar River and South Waubesa Wildlife Areas. Though there were initial concerns regarding hunting in these areas, the concerns have not materialized. Hunting and fishing have been the most popular uses of the Wildlife Areas, with numerous inquiries related to the type of habitat, access and rules. One of the underlying themes from users, especially hunters, has been their interest in having a quality recreational experience.

Specifically they are looking for the opportunity to see wildlife and potentially the game they seek, although that has not been the top priority. They are seeing less competition and more space without seeing other users. They prefer quality habitat and environments that support more wildlife.

The county has teamed with a number of natural resource agencies to enhance these county lands including Wisconsin Department of Natural Resources Wildlife and Fish Biologists,

US Fish and Wildlife Service—Private Lands Office, and the Natural Resources Conservation Service. Partner groups have included Trout Unlimited, Dane County Conservation League, Madison Fishing Expo, and Pheasants Forever, along with the help of the Park's many friends groups and volunteers.



Trout Unlimited volunteer work crew at Falk-Wells Sugar River Wildlife Area

Improved Access Increases Popularity of Upper Mud Lake

Dane County Parks operation staff recently completed the initial construction of a new lake access facility on Upper Mud Lake in the Capital Springs Recreation Area. The new parking lot provides public winter access to perhaps the most popular ice fishing destination on the Madison chain of lakes, attracting anglers from all across southern Wisconsin and northern Illinois.

Acquiring the approximately 4.5-acre property needed for public access was no easy task. The parcel was targeted for future development in Village of McFarland future land use plans, resulting in commercial-based appraisal value. After nearly two years of many night meetings and long discussions between the landowner, Village, Wisconsin DNR and Dane County, the



Great ice fishing at Upper Mud Lake

property was eventually approved for purchase in February of 2013. The Wisconsin DNR approved two Stewardship grants to offset both the acquisition and parking lot development costs.

The efforts to purchase this property were well worth it, as on any winter day dozens and sometimes hundreds of ice anglers can be seen fishing on Upper Mud Lake. What makes Upper Mud Lake so popular? The answer is simple: outstanding pan fishing that provides winter anglers and their

families with many meals of local, fresh fish. If you have ever been curious about trying ice fishing for the first time, be sure to give the new Upper Mud Lake access a try.

Programs Encourage Community Engagement

The Office of Lakes and Watersheds (OLW) created several new programs, partnerships and water-related service projects in 2014, in order to improve the water resources of Dane County. These civic engagement efforts complement already robust on-the-ground water pollution control practices by boosting public buy-in, strengthening stakeholder support, and improving trust between local government and its partners.

There are several concrete measures of OLW's community engagement success in 2014. More than 50 community partnerships were developed or strengthened since June. Growth in our community programing is largely attributed to successful Watershed Network Gatherings and related



Water Resource Engineering staff engage young learners at East Madison Community Center as part of the "Water Explorations" program

workshops. In 2014, 106 individuals participated in Watershed Network Gatherings, representing nearly 70 organizations focused on Dane County lakes, rivers, streams and wetlands.

Participants leave with an improved understanding of how to maximize volunteer efforts, develop creative "sense of place" strategies, engage with youth, and promote watershed literacy. Heading into 2015, partnership among groups with common water resource goals is stronger than ever!

Through active recruiting, OLW expanded Dane Stewards' rolls of email subscribers to more than 600 in 2014. Dane Stewards serves as a forum for water-related volunteerism and

learning opportunities. This coordination, facilitated by OLW staff, prevents organizational overlap and promotes strategic collaboration.

In the fall, OLW staff and Dane County UW-Extension developed an after-school pilot program for elementary school students at the Meadowood Neighborhood Center and East Madison Community Center to help these young learners understand how individual actions affect local waterways. This "Water Explorations" program accomplished one of OLW's central community engagement goals: expanding opportunities within underserved communities through involvement with local watershed groups.

In 2014, OLW started the "Yahara 2070" workshop series in collaboration with the Water Climate and Sustainability Project at UW-Madison. In addition, year-round "Take a Stake" workdays ranged from clearing out shoreline and picking up trash to prairie plantings and invasive species removal. These work days were given a boost from 138 new volunteers. In 2014, OLW successfully demonstrated that coordinated watershed advocacy benefits communities and watersheds across Dane County. Strategic collaboration can bring landowners, resource managers and watershed groups together on phosphorus reduction in 2015.



Over 100 volunteers from Lands' End worked on a Take a Stake in Our Waters project at Lake Farm County Park

Office of Lakes and Watersheds Division

The Office of Lakes and Watersheds (OLW) aims to protect and improve the water resources of Dane County, and its staff coordinates with the various divisions of the Land and Water Resources Department. For example, during 2014 OLW worked closely with Administration Division staff to prevent the spread of aquatic invasive species; assisted the Parks Division with continuous improvement of our aquatic plant management program (see article on page 9) and supported Land Conservation and Water Resources Engineering staff to inform new audiences – from school-aged youth to seasoned farmers— on ways to improve water quality.



Excessive salt on the sidewalk

OLW's work with myriad external organizations was also critical to its mission. Dane County leaders are concerned about rising chloride levels in surface and ground waters. Chloride concentrations in the Yahara chain of lakes have nearly doubled in recent decades. This upward trend has coincided with increased use of de-icing salt (sodium chloride) to treat roadways, parking lots and sidewalks in winter. Too much salt (see picture above) applied to roads, sidewalks and driveways wastes money when a lesser amount will be effective.

Once salt has entered an ecosystem, it is difficult to remove, putting aquatic life at risk, as well as damaging vehicles and infrastructure. Mindful of the adverse affects of salt overuse, OLW joined a multi-agency partnership in 2014—along with Madison Metropolitan Sewerage District, Madison Area Municipal Storm Water Partnership (MAMSWaP), Madison Water Utility, UW-Madison, City of Madison Engineering, and Madison-Dane County Public Health—to develop a “Wisconsin Salt Wise” campaign. The campaign prompts homeowners, motorists, municipalities, emergency service providers, and private contractors to reduce their use of salt while keeping the public safe.

On behalf of MAMSWaP, OLW planned and implemented two workshops geared toward reducing winter salt application. Of the 100 individuals from the private and public sector in attendance, more than 80% said that they would be able to reduce the environmental impacts of winter maintenance because of the class. Many participants committed to making concrete changes to their operations, such as calibrating their deicing equipment each year.

Another OLW accomplishment was to engage diverse audiences in discussing lake, stream and watershed management issues. One example is its continued “Beyond the Water’s Edge” photography and poetry exhibitions centered around one of the county’s most precious resources: water. At exhibition events at the Lussier Community Education Center in Madison and the Crossroads Café in Cross Plains, County

Executive Joe Parisi and County Board Chair Sharon Corrigan spoke to appreciative audiences.

OLW also amended the county’s slow-no-wake zone ordinance to accommodate the movement of the Rhythm and Booms Fireworks Display to Lake Monona, and also completed a multi-year water recreation study.



County Board Chair Sharon Corrigan engages area residents at a “Beyond the Waters Edge” exhibit

2013	2014	Office of Lakes & Watersheds Accomplishments
100	601	Members of Dane Stewards listserv
19,786	14,399	Visits to www.danewaters.com
363	451	DaneWaters fans on Facebook
534	661	DaneWaters followers on Twitter
1,563	1,487	Take a Stake in the Lakes (TAS) clean-up volunteers
192	204	TAS Days events
21	32	Groups borrowing equipment from OLW-supported Water Education Resource Center
378	357	Storm drains stenciled/marked
38	27	Legally noticed LWC meetings staffed
6,920	7,213	Boater contacts by Clean Boats Clean Water staff in Dane County
	138	Volunteers participating in <i>new</i> TAS projects created by OLW
	69	Groups represented at Watershed Network Gathering (WNG)
	106	Individuals who attended WNG; many of whom attended several
	35	“At-risk” youth involved in after-school pilot “Water Explorations” program

2013	2014	Madison Area Municipal Storm Water Partnership Accomplishments
10,226	20,095	Visits to www.myfairlakes.com
91	109	Fans on Facebook
32	26	Retain the Rain workshop attendees
77	174	PlantDane! cost-share participants
5,772	10,712	PlantDane! cost-share plants sold
	102	Participants at two Winter Maintenance (salt reduction) workshops

Seasonal Scouting Enhances Aquatic Plant Harvesting



Dane County's aquatic plant harvesting program is authorized by state permits based on plant surveys and plans updated every five years

The Office of Lakes and Watersheds (OLW) staff, working closely with the Parks Lake Management staff, completed aquatic plant management plan amendments that were approved by the Lakes and Watershed Commission and Wisconsin DNR in the spring. The updated plans are for Fish, Crystal, and

Indian Lakes; Lake Kegonsa and Lower Mud Lake; Lakes Mendota, Monona and Monona Bays, Wingra, Waubesa; Jenni

and Kyle Preserve Ponds, Lagoons in Tenney Park, Vilas and Warner Parks, Verona Quarry, and the Yahara River and Upper Mud Lake.

Based on the aquatic plant surveys and management recommendations in these updated plans, Wisconsin DNR has reissued Dane County's five-year harvesting permits. Regular plant scout field observations continued to guide daily harvester locations and priorities. Also in 2014, OLW worked closely with Parks in revising the Lake Management Handbook, part of the program's continuous improvement in training and operations, in response to feedback from annual meetings with DNR, and suggestions from harvesting program staff and the public.

Partnerships Continue to Benefit Pleasant Valley Watershed

Since 2007, many public agencies and private organizations have played a significant role in reducing sediment and nutrient runoff into the Pecatonica Watershed. The Pleasant Valley Project identified locations having the highest potential phosphorus loading to the streams. Success can be measured by accomplishments in several management areas. Residue and nutrient management practices reduced erosion and phosphorus runoff. Livestock operations applied runoff control systems, fenced cattle from streams, and established pasture management systems. The final implementation phase was completed in 2014. Based on



Photo courtesy of the Wisconsin Department of Natural Resources

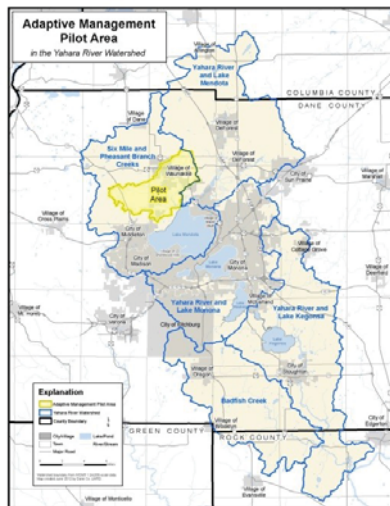
water quality data, a 37% decrease in phosphorus loadings was achieved. The highest credit rests with the landowners who partnered with the project and implemented the conservation practices. The Pleasant Valley Watershed demonstrated how government agencies, private organizations, and landowners can

partner to achieve economic benefits and water improvement goals. Maintaining the conservation practices will ensure that the farms stay economically healthy and our water resources continue to improve.

Yahara River Watershed Initiatives

Adaptive Management

Dane County Land Conservation Division (LCD) continued to work with the Madison Metropolitan Sewerage District (MMSD) and Yahara Watershed Improvement Network (WINs) on furthering the Adaptive Management effort within the Yahara Watershed. 2014 was the third year of a four year pilot project within the Sixmile Creek Watershed that is testing the Adaptive Management concept. A total of 14 conservation practices were completed in 2014 preventing approximately 450 pounds of phosphorus from entering nearby surface waters.



Harvestable Buffers

In 2014, Dane County and Yahara WINs tested a new innovative practice called Harvestable Buffers (picture). This practice allows producers to maintain agricultural productivity while also preventing sediment and nutrients from reaching nearby surface waters. A total of 15.2 acres of harvestable buffers were installed in both the Sixmile Creek and Badfish Creek Watersheds, reducing approximately 375 pounds of phosphorus.



Established buffers reduce phosphorus and sediment

Land Conservation Division

This past year, the Land Conservation Division (LCD) continued to assist landowners with planning, design, implementation, and certification of conservation practices. Landowners are required to develop a conservation plan and implement conservation practices to receive program benefits.

Conservation practices implemented include manure storage structures, contour farming, grade stabilization structures, grass waterways, wetland restoration, and grass buffers, all to ensure lasting water quality improvement. An additional 93,000 acres in Dane County were covered under plans in 2014. The Harvestable Buffer program was initiated in the Upper Yahara and Badfish Creek watersheds to further reduce phosphorus losses from cropland. The program allowed landowners to establish a perennial grass cover to reduce runoff and increase infiltration. During 2014, a major emphasis was placed on partnering resources from various private organizations and public agencies. The Yahara River watershed, including the Madison lakes, will see an increase in both technical and financial assistance to reduce the amount of phosphorous entering the water resources. Measures will include manure storage

and injection systems, erosion control practices, buffer systems, and sediment removal. This targeted approach, while working together with all levels of government, landowners, and the private sector, will achieve comprehensive solutions to resource protection.

Conservation Achievements	2014	2013	2012
Landowners Assisted	960	970	968
Landowners Applying Practices	356	403	390
Landowners Applying Engineering Practices	26	34	42
Conservation Plans Updated (ac.)	38,255	31,864	33,148
Conservation Plan Status Reviews Completed	744	309	569
Conservation Plans Actively Being Applied	558	642	539
Tolerable Soil Loss Rate (T/Ac/Y)	4.3	4.4	4.4
Average Soil Loss (T/Ac/Y)	3.7	3.7	3.7
Cropland that Exceeds T (%)	8.6	8.2	8.3
Winter Manure Spreading Permits (total)	111	111	111
Conservation Practices	2014	2013	2012
Nutrient Management Plans (ac.)	93,734	90,624	63,459
Streambank Protection & Restoration (ft.)	3565	1,358	12,334
Grassed Waterways (ac.)	21.1	19.6	25
Grassed Buffers and Filter Strips (ac.)	167.1	32.7	64.4

Sustainability Grants Bring Department Upgrades

As part of the 2014 budget, a grant program was created for departments to pursue projects that advance the county's goal of becoming more sustainable. The grants support implementation of systems that result in more efficient energy use and renewable energy production at county facilities. LWRD successfully competed for and was awarded two of these grants.

One grant was awarded to the Water Resource Engineering Division to transition from paper permit records to searchable electronic records. Currently, permit applications are submitted in paper format totaling more than 58,000 sheets annually. This project involves scanning existing records and developing systems to accept future applications in digital format. Once the conversion is complete, records will be searchable, allowing for easy file retrieval. This project is expected to save WRE approximately \$70,000 annually.

The second grant was awarded to the Parks Division to retrofit park facilities with sustainability initiatives.

- 13 low consumption toilets and urinals will replace the existing toilets and urinals.
- 10 sensor faucets will be installed to replace traditional faucets and will reduce water consumption by 85% and eliminate wasteful use.
- 20 bathrooms will be equipped with occupancy sensors that will reduce energy consumption and wasteful use of electricity. Lights will be installed within bathrooms to reduce electricity use during daylight hours.
- LED restroom and parking lights will be installed to replace existing lighting and will greatly reduce electricity consumption.

A Year of Success for the Park Endowment

Thanks to many partners committed to preserving and enhancing our Parks, the Friends of Dane County Parks Endowment Fund grew by a remarkable 54.7% in 2014 and is now valued at over \$232,000!

This endowment was started in 2013 by Dane County Executive Joe Parisi, working with the Parks Commission, as a way to build upon and protect the legacy of our one-of-a-kind system of county parks.

The Endowment will bolster park educational programming, better connect kids and families with the outdoors, assist in

project planning, support the amazing efforts of our system of parks volunteers, and ultimately increase the over two million people who visit Dane County Parks each year.

Whether working to create prairies and oak savannahs, getting our youth involved with agriculture and outdoor education, or helping build our park infrastructure, strengthening the foundation of this endowment ensures many bright tomorrows for Dane County's Parks. For more information visit the Friends of Dane County Parks Endowment page at: www.countyofdane.com/lwrp/parks/endowment.aspx

Water Resource Engineering Division

The Water Resource Engineering (WRE) Division administers the Dane County Erosion Control (EC) and Stormwater Management (SM) ordinance.

Urban Water Quality Grant Program



Lakeview Basin in the City of Middleton

The county celebrated its tenth year of the Urban Water Quality Grant (UWQG) Program in 2014. A 75% cost-share was available for the county’s top ten urban target areas that produce the most sediment and phosphorus. This program provides incentives to municipalities to install best management practices that will provide efficient, cost-effective treatment of urban runoff. In 2014, the county awarded three UWQG projects; \$600,000 in

cost-shared dollars, which will result in the removal of 40,000 pounds of sediment annually, once constructed.

Integrated Nowcast/Forecast Operation System (INFOS) for the Yahara River Chain of Lakes

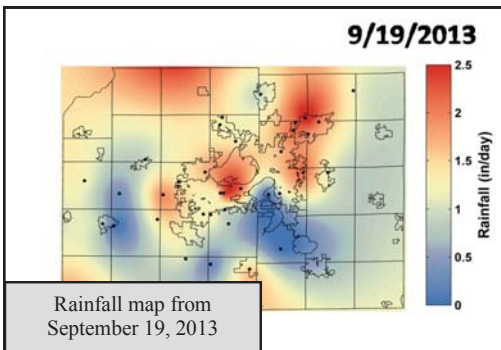
The online Integrated Nowcast/Forecast Operation System (INFOS) serves as a reliable planning and management tool to provide information to the community as a whole. The website (www.infosyahara.org) displays water currents and flows in the Yahara River and its chain of lakes in Dane County. The INFOS website provides current (or nowcast) weather and water observations, gathering data from several sources, such as the National Oceanic and Atmospheric Administration, United States Geological Survey, and the University of Wisconsin-Madison. In addition, a suite of models were developed to predict hydrologic runoff from the surrounding watersheds, hydraulic river flows and water levels, and hydrodynamic lake circulation and temperature. The modeling tools have also been used to identify potential locations of choke sections in the Yahara river, such as the Waubesa Railroad Trestle. Furthermore, the website is updated periodically with enhancements aimed at providing information to the public.

Sites	Submittals Reviewed	Active Sites	Inspections Performed	Contacts Initiated	Noncompliance Notices Issued	Stop Work Orders Issued	Citations Issued
County Administration	771	546	1341	735	11	12	4
Local Administration with Intergovernmental	162	83	1112	139	1	-	-
TOTAL	933	629	2453	874	12	12	4

1. Municipalities with intergovernmental cooperative agreements with Dane County to provide plan review and site inspection services included: the Villages of Cambridge, Deerfield, Oregon and Waunakee and the Cities of Middleton, Stoughton and Sun Prairie.

Mapping Rainfall in Dane County

Rainfall dispersing over the landscape generates runoff water that enters our streams and lakes. Runoff is dependent on the characteristics of the rainfall event such as intensity, duration, and spatial variability. The spatial variability of rainfall can be recognized from rainfall maps. Furthermore, these maps provide awareness of locations of runoff water that is entering



Rainfall map from September 19, 2013

lakes and streams. Understanding runoff is important for evaluating flooding and delivery of nutrients which are responsible for feeding

toxic algal blooms in our lakes. One source of rainfall data is provided from government stations (e.g. USGS, NOAA, NWS, local municipalities). The number of government stations in Dane County are sparse and thus the generation of rainfall maps would be generalized maps and would not describe the spatial variability of rainfall in Dane County.

However, a second source of rainfall data can be obtained from personal weather stations, filling spatial gaps of government station data. Personal weather stations are a relatively inexpensive device and, for example, are installed by a homeowner to entertain their weather curiosity, a school for education purposes, or a gardener for appropriate watering amounts. Over the past five years (2010-2014), government stations have grown from 10 to 18 station locations while personal weather stations have grown dramatically from 23 to 66 stations within Dane County. Water Resource Engineering uses both government station and personal weather station data, yielding a dense rainfall network throughout Dane County for mapping rainfall amounts. Rainfall maps are displayed through the Integrated Nowcast/Forecast Operation System (INFOS). For real-time (up to the hour) maps, see www.infosyahara.org/rainfall.



Personal weather station installed at LaFollette Dam

Administration Division

The Administration Division functions as a one-stop shop for internal and external Land & Water Resources customers. Quality customer service and departmental support is the primary mission of this Division. In 2014, the Division acquired a new Marketing and Outreach Coordinator position which laid a foundation for a more consistent presence on the internet and in print.

Office Management
 Marketing/Outreach
 Grants Coordination Website Management
 Parks Reservations/Permits
 Water Resource Coordination
 Endowment Management
 GPS Project Management Payroll Services
 Front Line Customer Interaction
 GIS Mapping Services
 Accounts Payable
 Budget

Thank you for your support!

The Friends of Dane County Parks Endowment thanks these organizations for their generous support:

The Madison Community Foundation	WISC-TV / Channel 3	Foley & Lardner LLP
Dane County Conservation League	Culver's Foundation	Fontana Sports Specialties
Dean Health Plan	MGE Foundation	GRAEF
The Cambridge Foundation	Madison Metropolitan Sewerage District	Sugar Maple Traditional Music Festival
SVA Plumb Financial	American Transmission Company	
Savannah Village Livable Communities	Lundgren's Sign Service	
Madison Fishing Expo	Vandewalle & Associates	
WEA Trust	Friends of Capitol Springs	

Welcome and Farewells

Welcome: Adam Lipscomb—Park Ranger, Parks Division
 Erika Hotchkiss—Marketing & Outreach Coordinator, Administration Division

Farewell: Marcia Hartwig—Community Engagement and Storm Water Education Coordinator, Office of Lakes and Watersheds (to Alliant Energy Center)
 Pat Sutter—County Conservationist, Land Conservation Division (Retired)

Contact Us

Dane County Land & Water Resources Department

Lyman F. Anderson Agriculture and Conservation Center
 5201 Fen Oak Drive, Room 208
 Madison, WI 53718
 Phone: 608-224-3730 Fax: 608-224-3745
www.countyofdane.com/lwr



Dane County Land & Water Resources Department Mission Statement

Dane County citizens value the quality of the county's natural, historic, and cultural resources, recognize the connection between these resources and their own quality of life, and expect these resources to be improved and sustained for present and future generations.

The Dane County Land and Water Resources Department exists to ensure the protection and enhancement of Dane County's natural, cultural, and historic resources; to provide the county's citizens with a broad array of accessible, high quality resource-based recreational services and facilities; and to support citizens, communities, local governments and other agencies and organizations in their resource management and protection activities.

The Department pursues its mission, alone and in collaboration with other agencies and organizations, through a mix of strategies that includes and combines resource management, program delivery, education and outreach, policy development, oversight, data management, technical assistance, responsiveness, and excellent customer service.