Manage and Conserve Water and Energy Resources

Implementation Action Area #1: Implementing Energy and Water Retrofit Programs

Action	Lead Implementers	Specifics
Develop a framework for retrofit program administration	CMAP, City of Chicago, City of Rockford	Implement the Chicago Region Retrofit Ramp-Up program, which was funded in April 2010 at a level of $25 million by the U.S. Department of Energy (DOE).

Implementation Examples:

- Following grant award, CMAP contracted with the Center for Neighborhood Technology – Energy (CNT Energy) as lead implementation agency of Chicago Region Retrofit Ramp-Up (CR3), which would eventually become the Energy Impact Illinois (EI2) program.
- After developing an implementation plan and overall budget framework, CMAP/CNT Energy contracted with 15 additional subgrantee organizations to develop and deliver on the three key barriers to energy efficiency adoption in the region: 1) access to information, 2) access to finance, and 3) access to a trained workforce.
- All contract procurements and grant obligations were completed by DOE deadline (11/18/2013).
- By 9/30/2013, EI2 programs across the single and multifamily residential sector will have completed nearly 6,100 retrofits to at or above 15% energy savings, resulting in an estimated $2 million in energy savings among participants annually.
- By 9/30/2013, EI2 commercial programs will have identified nearly $40 million in near-term energy savings project recommendations across 22 million square feet of commercial space in the Chicago region. These recommendations will be utilized to conduct retrofit work in participant buildings to decrease energy use by 20% over the next 5 years.

Action	Lead Implementers	Specifics
Provide a financial framework for retrofit programs	State (DCEO), municipalities, utilities, lending institutions	Support the development and delivery of financing products targeted across retrofit customer segments. Help support a market transformation to broaden retrofit demand and to give private lenders the confidence to lend to customers for energy efficiency measures. Provide case study data that shows that energy savings are an effective and dependable cash flow stream that can be used to secure loans. Utilities and municipalities should emulate programs as the ones the Illinois Department of Commerce and Economic Opportunity (DCEO) is currently administering for financing energy and water efficiencies by partnering with retailers to conduct rebate programs to replace appliances/fittings with more efficient models.

Implementation Examples:

- Energy Impact Illinois, in partnership of DCEO, local utilities, and other key stakeholders as part of the EI2 Retrofit Steering Committee, developed and deployed four energy efficiency finance programs across multiple building sectors during the fall of 2011.
- **Energy Savers Multifamily Program –** Administered by Community Investment Corporation (CIC) and CNT Energy, this program utilized EI2 funding and built upon their already successful multifamily retrofitting program that provides financing, technical assistance, construction oversight and annual performance monitoring for participating buildings owners. Through 9/30/2013, Energy Savers will have loaned out more than $3 million to local building owners and retrofitted close to 2,600 units to at least 15% energy savings annually.
- **Delta Residential Retrofit Program –** This $3.5 million program managed by the Delta Institute provides low-cost competitive financing for single-family homeowners who own 1-4 unit buildings in the Chicago region. Homeowners who take part in this program can complete comprehensive energy efficiency upgrades, which includes insulation and air sealing repair, furnace/boiler and AC replacements, and Energy Star appliance upgrades, to achieve at least 15% energy savings in their homes. In addition to financing, a limited-time $1,750 rebate incentive toward the cost of a home retrofit was available from August 2012 to September 2013, which drove extensive demand in the program and allowed for the completion of over 3,000 home retrofits in the region.
- **IFF Nonprofit Retrofit Program –** Nonprofit organizations looking to make energy efficiency improvements were able to take advantage of low-interest loans and specific project-related incentives to make energy efficiency improvements to their buildings. Over the course of this program, 19 nonprofit organizations representing 400,000 square feet of commercial space participated in the audit-phase of the program. 9 of these organizations moved forward with comprehensive retrofits of their buildings to at least

15% energy savings and utilized $2.4 million in private investment available through IFF to make these improvements.

- **SCIenergy Commercial/Industrial Program –** SCIenergy was contracted to provide over $1 million in Technical Assistance funding to conduct commercial/industrial energy efficiency predevelopment studies for a number of commercial sites within the CMAP region. These predevelopment studies were the first step for accessing SCIenergy's innovative Managed Energy Services Agreement (MESA) – an energy efficiency financing model that provides investment capital for major infrastructure improvements to commercial properties to create cost savings while still meeting the comfort and service obligations of the tenants' lease agreements. Through this effort, SCIenergy helped identify $11.4 million in near-term efficiency opportunities across over 5.5 million square feet of commercial space and is currently in working with participant organizations to move forward with their MESA model.

Action	Lead Implementers	Specifics
Increase access to a trained workforce	State, trade associations, community colleges, Workforce Investment Boards	Develop a regional training center for certified efficiency work. Establish consistent standards and certifications for workers and contractors and create a network to match building owners with certified contractors. Create a "central broker" to match trained job-seekers to businesses seeking certified workers.

Implementation Examples:

- Energy Impact Illinois (EI2) created just over 100 jobs over the 3 year cycle of the program, including both skilled trade and professional jobs.
- Centers for New Horizons (CNH), an EI2 contractor, held several roundtables promoting the program and informing contractors of any remaining qualifications they needed to participate in the EI2 program.
- CNH also developed an inventory of training centers and educational opportunities available for contractors seeking energy efficiency specialization training.
- CNT Energy developed a contractor model to assist contractors with completing necessary rebate paperwork as well as provided educational opportunities and staff support for improved quality of work.

Action	Lead Implementers	Specifics
Increase access to information concerning retrofits	Chicago Regional Retrofit Steering Committee (DCEO, CMAP, City of Chicago, utilities, nonprofits)	Develop a regional information center for connecting building owners to qualified contractors and financial products, conduct outreach via community-based/trade associations and Chambers of Commerce, use energy audits and web-based applications to provide information to building owners, and introduce marketing and branding strategies for retrofits. Expand the use of financing that is already available, such as the funding from the EEPS.

Implementation Examples:

- The EI2 website (http://energyimpactillinois.org) served as a clearinghouse for information about energy efficiency upgrades, rebates, and financing.
- The EI2 call center served as the primary point of contact for residents with the region and was promoted as the only phone number a City of Chicago resident could call to participate in the Retrofit Chicago program.
- The EI2 Road Maps – developed as part of the contract with PositivEnergy Practice – provided commercial office spaces step-by-step, investment-case scenario designed to help buildings achieve a 20% energy reduction commitment made as part of their participation in the Retrofit Chicago Commercial Building's Initiative.

Implementation Action Area #2: Integrating Land Use Planning and Resource Conservation

Action	Lead Implementers	Specifics
Create model codes/ordinances	CMAP	Assist communities in amending or adopting codes for water conservation by providing ordinance language and related resources. Assist implementation by making available guidance for model review processes.

Implementation Examples:

- CMAP used its model ordinance for water conservation to guide development of a conservation program and ordinance in the Village of Orland Park as part of an LTA project.
- The Metropolitan Planning Council, working with CMAP, undertook a water conservation ordinance implementation effort with the municipalities that are part of the Northwest Water Planning Alliance, focusing particularly on outdoor water use restrictions.
- CMAP supported the City of Chicago's efforts to introduce an energy benchmarking and disclosure ordinance as a means of tracking energy usage city-wide, which passed the City Council on September 11, 2013.

Action	Lead Implementers	Specifics
Accelerate use of efficient appliances/fixtures through green code adoption	Counties, Municipalities	Amend ordinances to reflect requirements of the Illinois Energy Efficiency Building Act and expand on it to include items such as appliances and fixtures. Utilize Energy Star Portfolio Manager/Energy Performance Indicator or other performance indicators for energy efficiency review in commercial and residential buildings.

Implementation Examples:

Action	Lead Implementers	Specifics
Provide technical assistance to local governments	State (DCEO), CMAP	Encourage incorporation of sustainability plans or codes in local planning practices during energy-related grant award processes by prioritizing funding to communities that have taken these initiatives. Allocate funding for the development of green codes. CMAP should offer conservation coordination assistance to communities that wish to employ water conservation practices.

Implementation Examples:

- Through its Local Technical Assistance Program, CMAP has specifically developed water conservation plans in Evanston (Evanston Water Conservation and Efficiency Plan) and Oak Park (Oak Park Water Conservation and Efficiency Plan) as well as a new water conservation code for the Village of Orland Park.
- MPC, CMAP, and the DuPage Water Commission completed a four-part educational workshop series for water conservation managers and others interested in water conservation. The team then selected the Village of Westmont as the recipient of water conservation implementation assistance, which is expected over 2013-14.
- CMAP energy staff assisted in the development of a number of LTA sustainability plans – for example, Park Forest and Morton Grove– providing specific information about energy efficiency opportunities for communities to implement as part of a sustainability plan.

Action	Lead Implementers	Specifics
Promote rainwater harvesting for non-potable indoor uses	State, counties, municipalities, nonprofits	Local governments should ensure that existing regulations do not prohibit the indoor handling of rainwater. Collaborate in executing informational/demonstrational efforts for the implementation of rainwater harvesting. Amend ordinances and codes accordingly.

Implementation Examples:

- Public Act 97-0852 was passed in 2012 to require the Illinois Department of Public Health to modernize the Illinois Plumbing Code to better protect natural resources, for example by developing standards for reuse of non-potable water.

Action	Lead Implementers	Specifics
Increase commitment to conservation in the Lake Michigan Service Region	State (IDNR), CMAP	Encourage Lake Michigan Service Region permittees to develop conservation plans and set conservation targets that can be reported to IDNR. Encourage annual water audit reports that follow the International Water Association and American Water Works Association standard water balance protocol while eliminating the maximum unavoidable loss allowance. Conserving Lake Michigan water by individual permittees is in the interest of the region because it would potentially make Lake Michigan water available to more communities. Permittees should make information available online to encourage increased engagement in conservation activities. CMAP should use its relationships and access to communities to assist IDNR with outreach efforts to achieve these recommendations. CMAP should develop a reporting framework/template for communities to demonstrate water management activities to the Lake Michigan Management Section. CMAP should encourage communities to publicize their water conservation milestones.

Implementation Examples:

- Rule proposed by IDNR in spring 2013 meet many of the specific recommendations of this action area, including elimination of the unavoidable loss allowance and encouraging water conservation by Lake Michigan users.
- CMAP is collaborating with IDNR Office of Water Resources in an LTA project to evaluate the reasons for water loss at specific utilities in the region and propose conservation strategies, a project expected to continue through 2013.

Action	Lead Implementers	Specifics
Identify and protect sensitive recharge areas	State (ISWS, ISGS), CMAP, counties, municipalities	CMAP should lead a collaboration to identify SARAs, prioritize those most important for protection, and develop and disseminate model ordinances to ensure their preservation.

Implementation Examples:

- As part of Water 2050, CMAP developed an initial identification of sensitive aquifer recharge areas based on an earlier effort in McHenry County. This initial work was incorporated into the green infrastructure mapping that CMAP developed in collaboration with Chicago Wilderness in 2011-12 (the Green Infrastructure Vision, available at http://www.cmap.illinois.gov/green-infrastructure).

Action	Lead Implementers	Specifics
Encourage the integration of resource conservation in land use planning	State (DCEO), CMAP	Use planning grant programs to assist communities in incorporating resource conservation in local comprehensive planning. Encourage communities to indicate available future water supplies for projected population growth in comprehensive plans.

Implementation Examples:

- A number of projects undertaken through CMAP's Local Technical Assistance program have focused on resource conservation in land use planning, including the Village of Lakemoor Comprehensive Plan and especially the Village of Campton Hills Comprehensive Plan, which recommended strategies for protecting water supplies and preventing degradation of important natural resources, among others.

Action	Lead Implementers	Specifics
Adopt policies to encourage attainment of zero water footprints/water neutrality for large scale projects	Municipalities, water utilities	Water utilities should require large-scale projects to seek water neutrality. Project sponsors should work with utilities to set an annual water budget following an audit that identifies water saving mechanisms. Project operators should then adhere to the water budget. If the budget is exceeded, as determined by water billing triggers, operators would contribute to local conservation efforts to offset that amount elsewhere in the system.

Implementation Examples:

Action	Lead Implementers	Specifics
Implement urban and community forestry programs	Counties, municipalities, park districts	Adopt minimum standards for tree coverage in development projects along with tree preservation and maintenance regulations. Undertake these programs through park districts in public sites. Incentives should be provided for residents to plant trees, such as discounted sales and/or planting assistance.

Implementation Examples:

Action	Lead Implementers	Specifics
Use green infrastructure practices to manage stormwater in new development and redevelopment	Counties, municipalities	Ensure that stormwater management using green infrastructure is integrated in the planning and design phase of development projects. Use infill or redevelopment as opportunities to promote retrofits with green infrastructure in developed areas. Require maintenance plans in the stormwater management permitting process that specify maintenance activities and indicate responsible parties. These plans should be transferrable with property deeds.

Implementation Examples:

Action	Lead Implementers	Specifics
Implement green infrastructure retrofits	Counties, municipalities	Watershed plans for developed areas should identify potential green infrastructure retrofits, such as rain gardens, green streets, parking lot bioretention, and so forth. These plans should be used to help secure capital funding for retrofits.

Implementation Examples:

Implementation Action Area #3: Pricing

Action	Lead Implementers	Specifics
Utilize full cost pricing to incentivize more efficient water use and to fund conservation programs	Illinois Commerce Commission, CMAP, municipalities, utilities	Municipalities should decouple water utility budgets from the municipal general revenue fund and ensure that revenues collected from water billing meet capital and operations and maintenance (O & M) budgets. Utilities should implement metering and appropriate bill designs. Utilities should ensure that bills reflect the full cost of treatment and delivery of water. CMAP should offer technical assistance on conservation pricing and rate-setting.

Implementation Examples:

- CMAP worked with the Illinois-Indiana Sea Grant and the University of Illinois Extension to develop the Full-Cost Water Pricing Guidebook in 2012. This resource helps make the case for full-cost pricing to water utilities and elected boards in the region. Since publication, staff have been holding workshops and conducting technical assistance to encourage the adoption of full-cost pricing.

Action	Lead Implementers	Specifics
Institute stormwater utility fees	Counties, municipalities	Local governments with stormwater management responsibilities should charge dedicated user fees to property owners to cover the costs of maintaining stormwater infrastructure. Such fees should be directly linked to the amount of impervious area on a site. With these revenues in hand, local governments should consider taking maintenance responsibility for stormwater infrastructure on private property, as property owners may not be willing or able to do so.

Implementation Examples:

- CMAP published "The Value of Stormwater Utilities for Local Governments in the Chicago Region" in 2013 in order to help explain the benefits of stormwater utilities. The General Assembly passed HB 1522 to allow DuPage and Peoria Counties to implement stormwater utility fees, which was signed into law as Public Act 98-0335 in 2013.
- In January 2013, the Village of Downers Grove became the latest municipality to institute a stormwater utility fee. Other municipalities are investigating the viability of setting up a stormwater utility.

Implementation Action Area #4: Funding

Action	Lead Implementers	Specifics
Use State Revolving Funds as mechanism for implementing water conservation measures	State (IEPA)	Develop criteria that prioritize PWSLP to utilities that adopt full-supply cost pricing structures in their water billing. Require that water supply utilities develop conservation plans that set annual water use targets to be reported to IEPA as a condition for granting loans.

Implementation Examples:

Action	Lead Implementers	Specifics
Use the Green Project Reserve for energy and water efficiencies	State (IEPA)	Utilize the 20 percent of the State Revolving Funds for water and energy efficiency projects, such as retrofits to pumps and treatment processes, irrigation equipment, reuse of rainwater/stormwater, leak detection equipment, and on-site clean power production.

Implementation Examples:

- In September 2013, CMAP began discussions with IEPA on how to improve the distribution of incentive dollars for manufacturing pumps in wastewater treatment facilities.

Action	Lead Implementers	Specifics
Implement Energy Performance Contracting	Counties, municipalities, utilities	Contract with private ESCOs to identify energy savings potential. Offer cost sharing or loans for property owners for improvements to be paid by consequent cost savings resulting from the installation of energy efficient equipment and fixtures. ESCOs provide guarantees that cost savings will be attained; if not, they pay the difference.

Implementation Examples:

- DCEO, which is responsible for leading much of the public sector investment in energy efficiency throughout the state, offers the Energy Performance Contracting Program that utilizes the ESCO model through its Illinois Energy Now program.

Action	Lead Implementers	Specifics
Pursue innovative financing mechanisms for retrofits	State (General Assembly, IFA), counties, municipalities, utilities, lenders	Explore the use of PACE financing, Green Loan Programs, New Market Tax Credits, Energy Efficiency Ratings Incentives, revolving loan funds and loan pools, etc. for funding energy and water efficiency programs. Form partnerships required to implement these programs with utilities, lending institutions and contractors.

Implementation Examples:

- Local gas and electric utilities have partnered with AFCFirst Financial Corporation to bring on-bill financing to consumers who wish to make energy efficiency improvements to their homes. Participants are able to purchase high-efficiency products like appliances or HVAC equipment through their local utilities and pay back the cost over time through their monthly bills. More information can be found at http://www.ilenergyloan.com.

Action	Lead Implementers	Specifics
Establish comprehensive energy and climate change policy	Federal (Congress)	Address greenhouse gas emissions economy-wide by such actions as improving the carbon content of fuels, reducing industrial emissions, and limiting emissions from electricity generation, as well as establishing policies to promote energy conservation and renewable energy. The federal government should have a strong role in this area.

Implementation Examples:

- Recent U.S. EPA regulatory initiatives have focused on greenhouse gas emissions.

Implementation Action Area #5: Local Governments as Early Adopters of Sustainable Practices

Action	Lead Implementers	Specifics
Implement green infrastructure demonstration projects	Counties, forest preserve and conservation districts, municipalities, park districts	Local governments in the region should implement green infrastructure demonstration projects with regular performance monitoring to further evaluate the applicability of such measures to local conditions. They should utilize available staff and technical expertise/resources to construct and maintain green infrastructure facilities and perform seasonal monitoring, modifying designs to adapt to local conditions as necessary. Local governments should partner with developers in establishing demonstration projects by offering financial assistance/cost share with construction costs.

Implementation Examples:

- CMAP energy staff assisted in the development of a number of LTA sustainability plans – for example, Park Forest and Morton Grove – providing specific information about energy efficiency opportunities for communities to implement as part of a sustainability plan.
- CMAP energy staff provided insight and guidance on the energy efficiency section of during the development of the Will County Sustainability Plan.

Action	Lead Implementers	Specifics
Utilize green infrastructure practices in all public improvement projects	State (IDOT, IDNR), counties, forest preserve and conservation districts, municipalities, school and park districts	All governmental bodies that undertake construction activities should implement policies that require the use of site-appropriate green infrastructure practices for stormwater management.

Implementation Examples:

Action	Lead Implementers	Specifics
Consolidate water supply and wastewater treatment services to achieve energy efficiencies and economies of scale	COGs	Local governments should investigate coordinating or consolidating water utilities to enhance cost-effectiveness and lower financial risks. The expansion of existing water supply plants should be emphasized over the development of smaller plants for individual utilities. A common funding stream for plant expansion could be obtained by tapping into collective resources.

Implementation Examples:

Action	Lead Implementers	Specifics
Consider devoting the cost of power under franchise agreements to retrofit and rebate programs instead	Municipalities	Municipalities often receive free electric service by utilities as compensation for granting the franchise privilege of using the municipality's public rights of way for the delivery of electricity.[1] Discussion should be initiated to use the funds instead for retrofit and rebate programs.

Implementation Examples:

[1] ComEd, Get rate information through tariff documents, under "Rider FCA - Franchise Cost Additions," see http://tinyurl.com/2eqkzwk.

Action	Lead Implementers	Specifics
Utilize renewable energy generation in water utilities	Municipalities, utilities	Municipal utilities should seek to employ solar and wind energy to generate all or part of the power required for utility operations. Unused power can be sold back to the grid.

Implementation Examples:

Action	Lead Implementers	Specifics
Develop energy and water efficiency and conservation strategies	Municipalities	Communities should develop a baseline analysis of energy and water use, broadly identify potential efficiency and conservation measures, and analyze the feasibility of implementing them, including the availability of financing. This strategy should be used as an input to local comprehensive planning and as a guide to implementation.

Implementation Examples: