

Integrated Water Resources Planning

December 5, 2011
Project Update

Metropolitan Planning Council



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Issues to Address Tonight

- Integrated Water Resources project and team overview
- Community survey results
- Project team findings
- Priority issues



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Issues to Address on December 19

- Strategic goals and objectives for integrated water resources management
- Project team's recommendations on how to achieve those goals and objectives
- Implementation next steps



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Integrated Water Resources project and team overview



Sustainable Communities
Attainable Results



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Project Team

- Metropolitan Planning Council: www.metroplanning.org
- Center for Neighborhood Technology: www.cnt.org
- Chicago Metropolitan Agency for Planning: www.cmap.illinois.gov
- CBI Task Force



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CBI Task Force

Lake Zurich CBI Task Force	Organization	Role/Expertise
Ed Glatfelter	Retired from Alliance for GL, retired from ISWS, retired from Central Lake Water Authority	utility management, water resources planning
Mark Emory	Christopher Burke Engineering	wastewater and stormwater engineering
Paula Worthington	University of Chicago, Harris School of Public Policy	local public finance and cost-benefit analysis
Cary McElhinney	US EPA Region 5	WaterSense, water efficiency, liaison to US EPA
Jeff Edstrom	Environmental Consulting and Technology	water/energy nexus, Member of ISAWWA Water Efficiency Committee
Jeff Mengler	Cardno Entrix	conjunctive water use, ecosystem protection
Marty Jaffe	University of Illinois-Chicago, Center for Urban Planning and Public Administration	urban planning, local government management, regional water supply planning
Jim Mann	Retired director of Ill. Clean Energy Foundation	former lawyer for Lake Michigan allocation requests
Peter Wallers	EEI	water systems management, Northwest Water Planning Alliance
Caitlin Feehan	MWH	wastewater projects, sustainable water planning and green infrastructure
Killian Tobin	Innovyze	data tracking, modeling, asset management
Owen Keenan	M.E. Simpson	infrastructure performance



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Process

- Memorandum of Understanding
- Collection of data, maps, reports, etc.
- Community survey
- Stakeholder interviews
- Analysis and draft recommendations
- Community meeting
- Presentation to Village Board (Dec. 5)
- Presentation to Village Board (Dec. 19)
- Final recommendations report



Memorandum of Understanding

Scope of Services:

The purpose of the Integrated Water Resources Management Team (hereafter known as the "Team"), led by the Metropolitan Planning Council (MPC) and consisting of the Chicago Metropolitan Agency for Planning, Center for Neighborhood Technology, University of Illinois Extension, and Illinois-Indiana Sea Grant, is to advise the Village of Lake Zurich as it develops an integrated water resources plan addressing water supply, wastewater, and storm water management. The Team will be comprised of members from the above agencies as well as a CBI Task Force of technical experts from a variety of fields - public or private utilities, engineering, planning and design, real estate development, plumbing, water management, finance and cost analysis, and resource economics - that will provide their expert knowledge and assistance to complete the work.

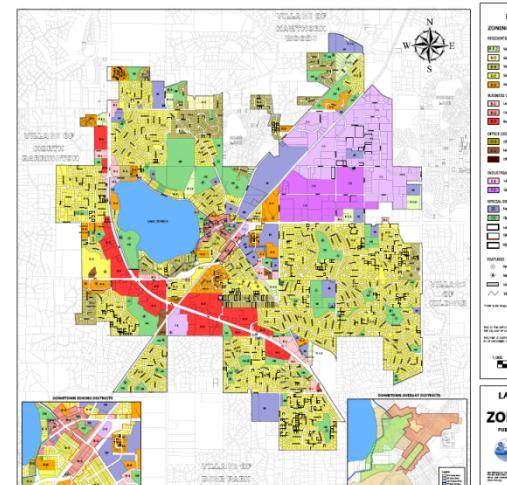
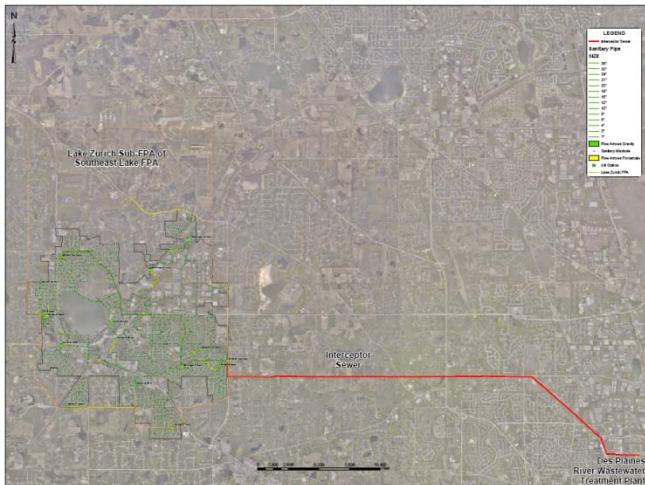


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Information collection (examples)

1992 I&I Study (Volumes 1-3)	2010-11 Road Salt Budget	2011-2012 Stormwater Budget	Green Mechan Code TOC.pdf	App for Allocation June 2009
2008 Water Survey.pdf	2010-11 Stormwater Budget	Historic Water Residential Water Usage Chart.pdf	IDOT MS4 IL 400493 Inspections	Draft Water Study Phase I
2009 - Sanitary Survey 2.pdf	2010-11 Utilities Budget	Water capacity and water usage and wastewater loads.xls	IEPA Violation Notices to Lake Zurich	Feasibility Study Sept 2008
2009-Sanitary Survey 1.doc	2011-12 Road Salt Budget	Emergency response plan.pdf	Illinois State Water Survey SDCS2008-04.pdf	Groundwater Uncertainty
Billing Summaries 08-10.pdf	2011-12 Utilities Budget	Energy bills	Lake Zurich Form Based Regulations.pdf	... ETC.



Stakeholder interviews (July 12)

- Current and former Village officials and staff
- Homeowners Associations
- Chamber of Commerce and businesses
- School District
- Lake County Stormwater Mgmt.
- Lake County Wastewater Mgmt.
- Lake County Forest Preserve
- Watershed groups
- Parks Dept., Fire Dept.



Community Survey results



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Community Survey Representation

	Survey (n = 260)	2010 Census
Gender, percent male	62.7%	49.4%
Age		
25-34	12.3%	9.4%
35-44	18.4%	15.5%
45-54	26.5%	19.3%
55-64	30.7%	11.9%
65+	9.0%	7.9%
Race, percent white	97.1%	86.7%
Education, BA Degree	45.5%	30.4%
Income		
Less than 75,000	27.5%	40.8%
75,000 – 99,999	21.3%	21.2%
100,000 or more	50.58%	42.1%

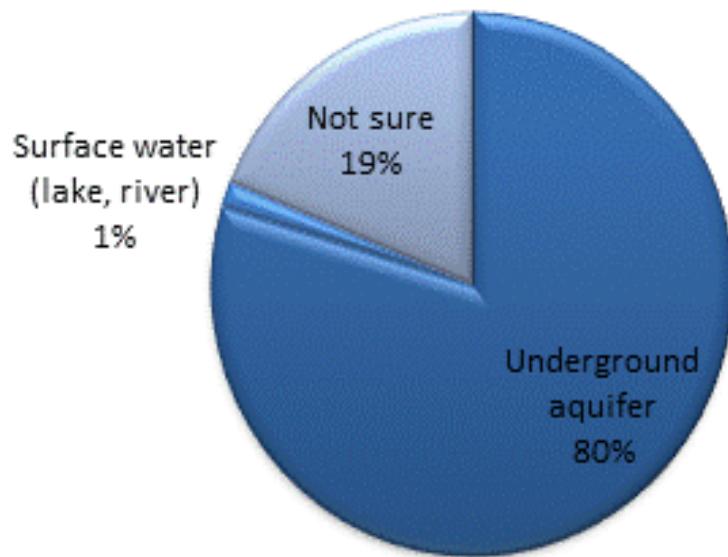


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Community Survey results: Water source

What is the source of the water that is delivered to your home?



Community Survey results: Stormwater

- My home never floods: 73.5% (186)
- Where do you think stormwater in your community goes after it enters a storm drain or roadside ditch?

Directly into surface water without treatment	41.5% (105)
To a wastewater treatment plant, and then to surface water	26.1% (66)
Not sure	28.9% (73)
Other	3.6% (9)

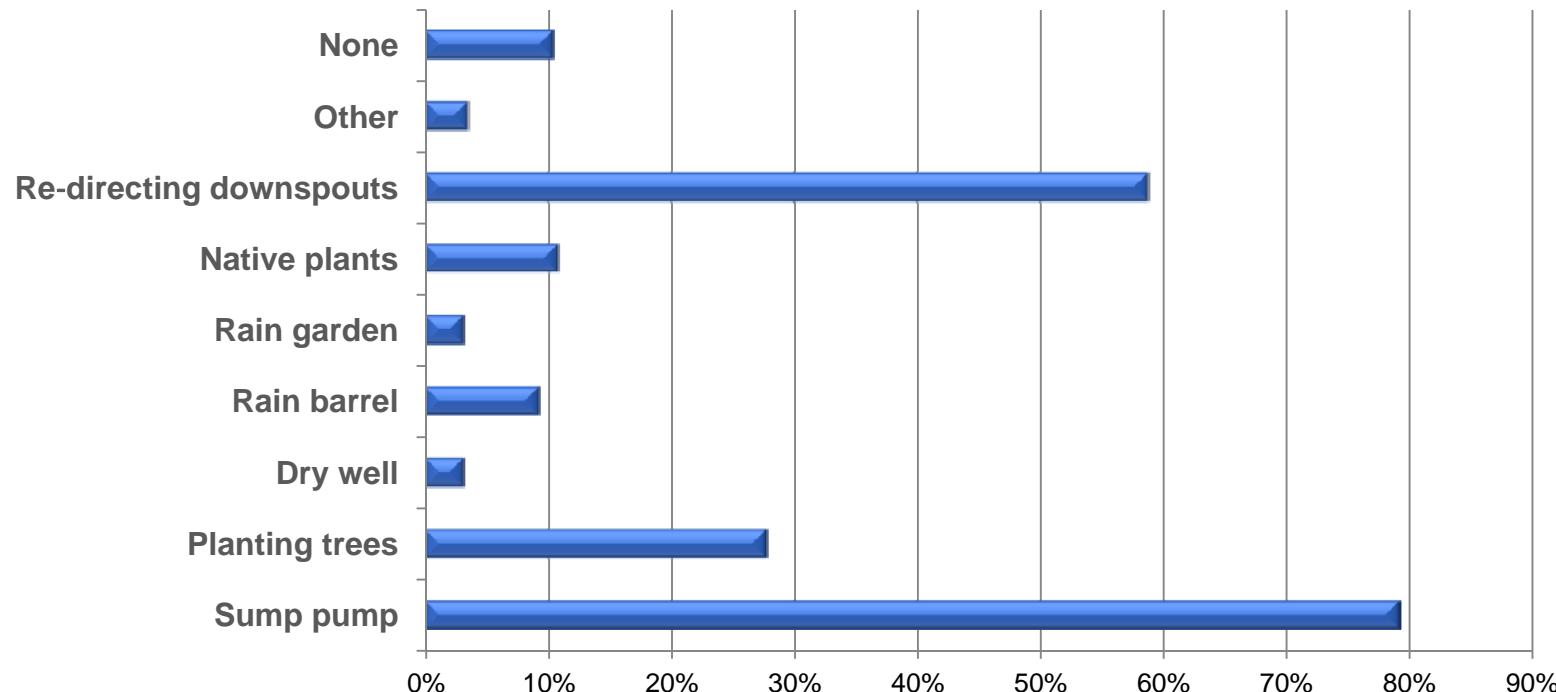


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Community Survey results: Stormwater

Have you ever used any of the following to manage stormwater on your property?



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Community Survey results: Future water choices

How often does your household drink bottled water at home?

Never	17.8% (46)
Infrequently	25.6% (66)
Sometimes	16.7% (43)
Frequently	15.1% (39)
Always	24.8% (64)

What percentage of all your household's drinking water consumption at home comes from bottled water?

Response: **35.6% (258)**

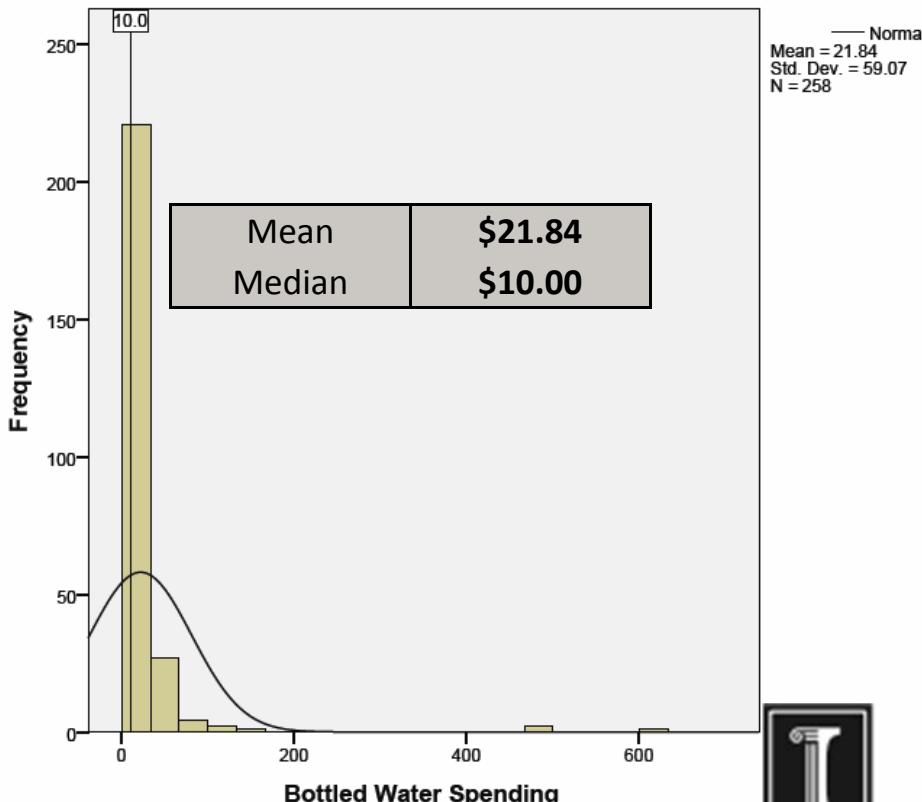
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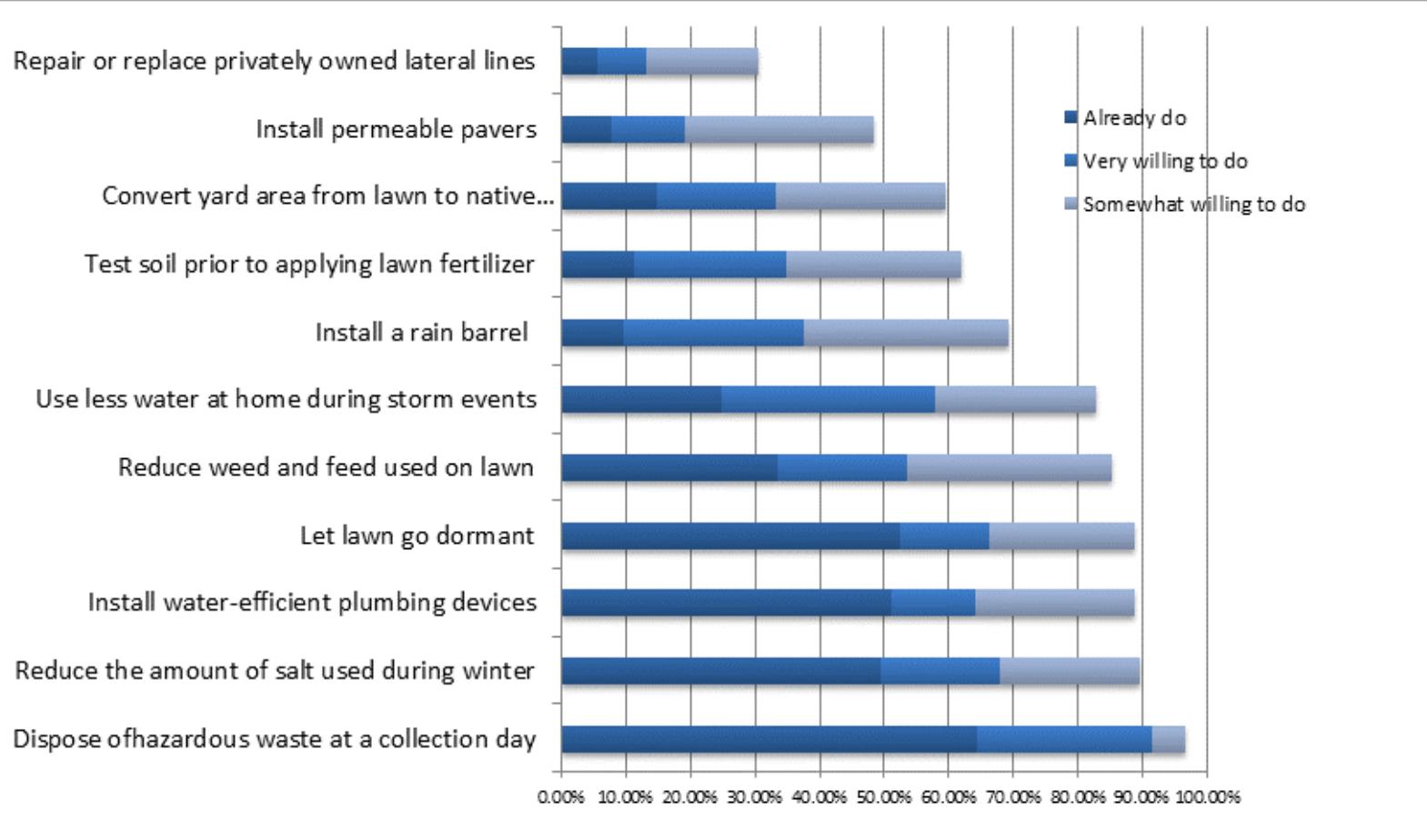
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How much does your household spend on bottled water each month?

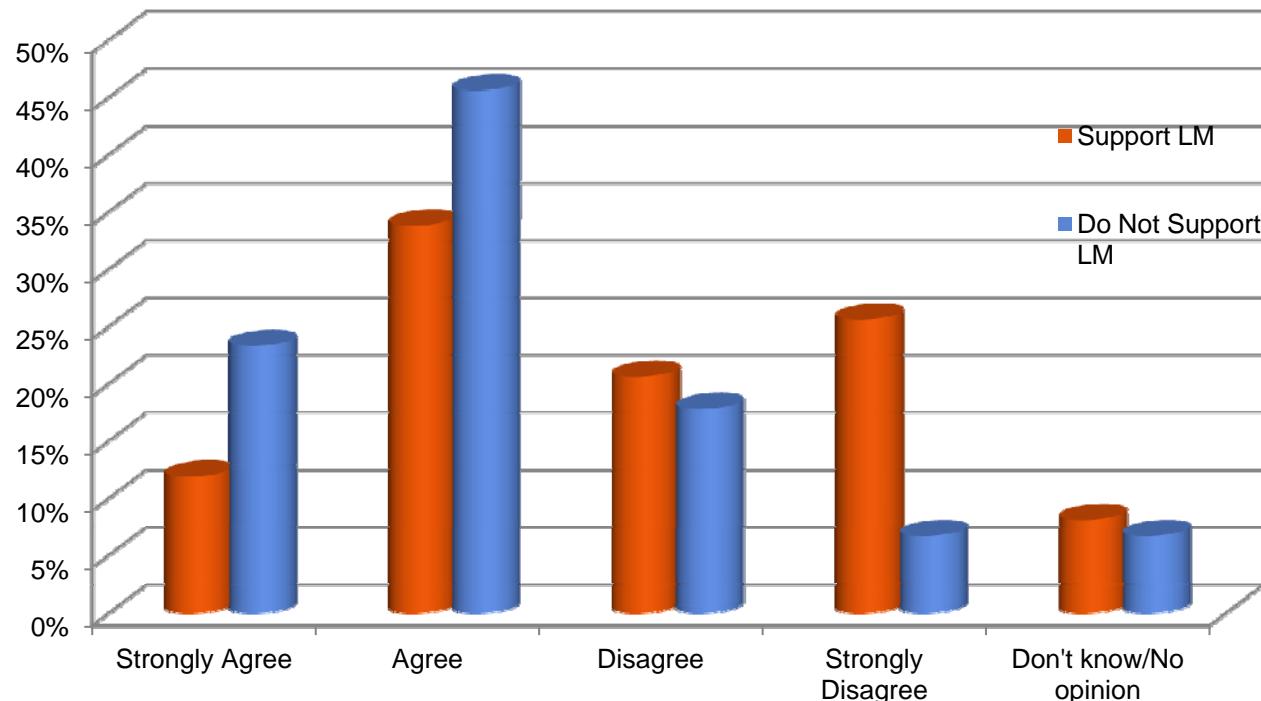


Community Survey results Future water choices



Community Survey results Future water choices

I like the taste of unfiltered water that comes directly from the faucet

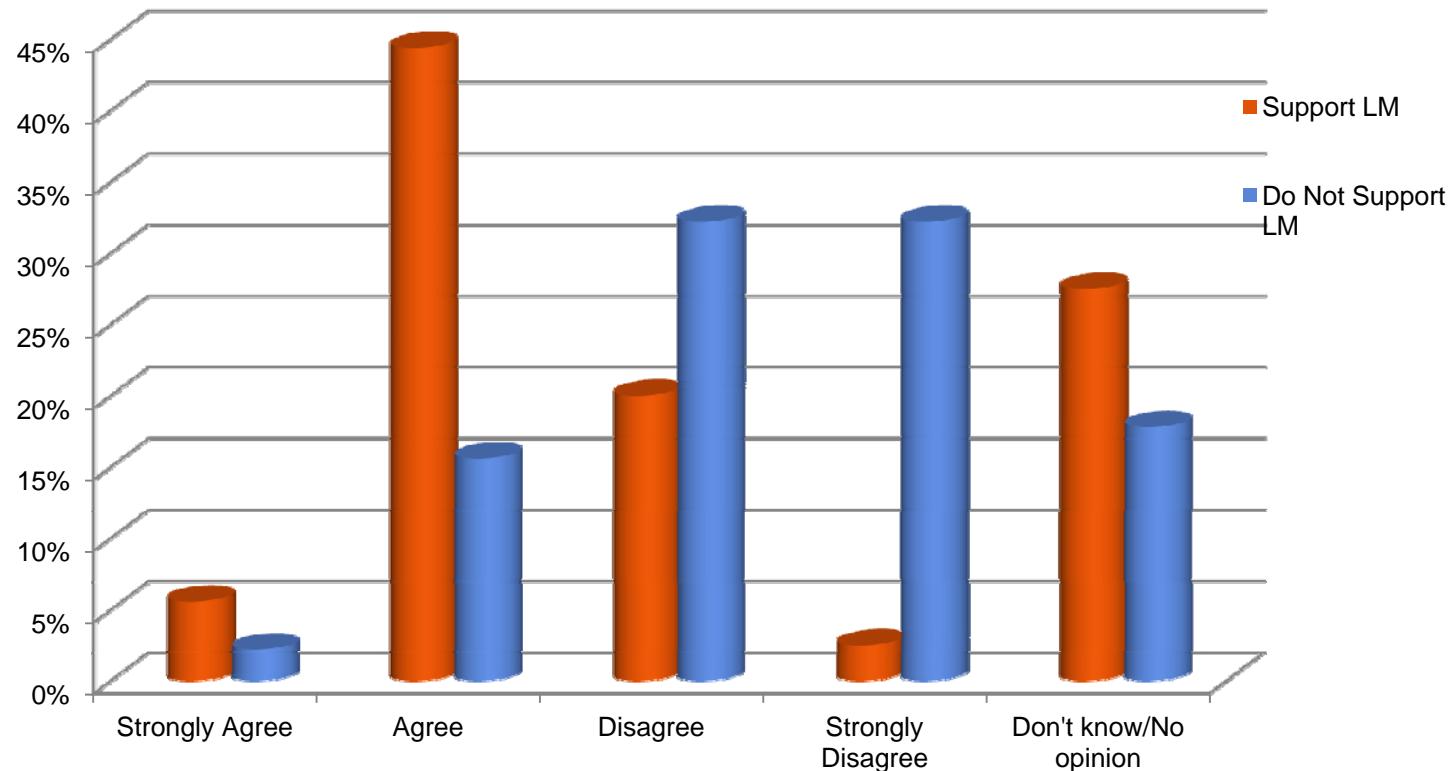


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Community Survey results Future water choices

There is a possibility of a water shortage in
Lake Zurich in the near future



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Sea Grant
ILLINOIS - INDIANA

A SNAPSHOT of project team findings



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Positive things to build on:

- No systemic flooding issues
- No immediate threat of water supply shortage
- High concentration of industry create opportunities for high-impact green infrastructure, water reuse, etc.
- Existing desire and preliminary plans to redevelop/shape the “new” downtown with green infrastructure
- Water supply infrastructure is mostly new and in good condition
- Water quality meets all required standards
- Public Works staff and Village leadership committed to sustainable water resource management, open to external review
 - i.e., leakage monitoring, advanced metering, monthly billing



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A few things to improve upon:

- Inflow & Infiltration and wastewater peaking
- Condition and management of wastewater system
- Revenues fall short of costs
- Isolated pockets of repeated, serious flooding
- Perception of flooding issues doesn't match extent of problem
- Retention pond maintenance (no funding, unclear responsibilities)
- Hilly terrain and high number of water ways increases risk of downstream water quality problems
- No defined level of service leads to varied understandings about cost of service
- Minimal communication/education by the Village about water, stormwater, and wastewater issues



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Opportunities to take advantage of:

- Interest in industrial reuse of harvested rainwater for irrigation or non-potable uses
- Community survey indicates a willingness of many residents to be a part of solutions, and perhaps a willingness to pay for dependable water
- Existing templates for more informative bills, educational materials, etc.
- Parks Dept. could readily incorporate stormwater management into its property management, partner with wetlands groups, etc.
- Recent government turnover creates chance to articulate a new vision for the future
- Deep aquifer water largely protected from manmade contaminants



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Things to be aware of:

- Increasing frequency of severe weather and precipitation events make flooding, downstream water quality problems more likely
- Pending stormwater management regulations (directly affect Lake Zurich) and wastewater management regulations (indirectly affect Lake Zurich) could increase costs
- Deep aquifer levels are declining
- A shift to Lake Michigan water means giving up some degree of control over costs
- Possible water treatment regulations for emerging contaminants could increase costs of Lake Michigan water
- A shift to Lake Michigan water also means incurring additional costs, on top of current debt obligation for past investments



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Priority issues



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Priority issues

- Infiltration and inflow
 - No comprehensive assessment in 20 years
 - Strains the wastewater system, contributes to overflows at Lake County treatment plant
 - Unlikely that Lake County would be interested in managing/paying for wastewater interceptor so long as I&I issues exist
 - Distributed management responsibility
 - Water source is irrelevant
 - Expensive to fix



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Priority issues

- Condition of wastewater interceptor
 - Strained capacity, deteriorating condition
 - Providing service to new customers/communities as a way to make up for budget shortfalls increases strains on capacity
 - Unlikely that Lake County would be interested in managing/paying for wastewater interceptor so long as it is in this condition
 - Water source is irrelevant
 - Expensive to fix



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Priority issues

- Stormwater
 - Isolated pockets of flooding create perception of systemic flooding
 - High water quality (i.e. Lake Zurich) requires high level of protection, low water quality (i.e. Echo Lake) also requires high level of protection/remediation
 - Could be a constraint for downtown redevelopment, or a marketing opportunity
 - Little formal “green infrastructure” in Village
 - Distributed management responsibility
 - Water source is irrelevant
 - Costly, and there is no dedicated funding stream



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Priority issues

- Finances
 - Costs are increasing and will increase, but rates are not keeping up
 - Water budget raids obviously deplete available funds to address current problems
 - Cannot depend on federal grants or new connection fees
 - Modeled demand is not matching up with water sold
 - No revenue generated in association with stormwater management services, despite high incurred costs
 - Two “incentives” (i.e. senior discount and winter-based waste charges) are actually disincentives for wise water use



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Priority issues

- Lake Michigan
 - Residents/businesses think they are not sufficiently informed
 - Strong chance that LM allocation will be available in the future, but no guarantee
 - Possibility that treatment regulations/costs would increase; LZ would have no control (but radium-related costs could also increase, and LZ would have no control there either)
 - Debt obligations continue for past investment, plus new debt
 - Cost of radium removal would decline, but not disappear
 - Opportunity to provide water and wastewater services to neighboring communities, but existing infrastructure is already strained



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What to expect next

What to expect next

- Final task force report will provide recommendations through the language and framework of the Village's Strategic Plan (example below)
 - Strategic Goal 1. Ensure long-term water availability, wastewater stewardship, and sustainable stormwater management.
 - *Design and implement a systematic capital planning process for the performance of water, wastewater, and stormwater-related infrastructure (both gray and green) to meet projected needs of residents, businesses, and ecosystems.*
 - Explanation of what this entails, what information is required, how it should be communicated, etc.



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What to expect next, cont.

- Presentation of full assessment and recommendations to Village Board on Tuesday, December 19, 7pm
 - *Please provide feedback before then*
- Draft final report delivered in December
 - *Please provide feedback*
- Final, public-ready report delivered in January
- Determine which short-term implementation steps are most desirable
- Determine level of Village, MPC, CNT, and CMAP partnership going forward



Resources to take advantage of now

- Water 2050 - www.cmap.illinois.gov/water-2050
- What Our Water's Worth – www.chicagolandh2o.org
- Green Values calculator - <http://greenvalues.cnt.org>
- Illinois Green Infrastructure Grant -
www.epa.state.il.us/water/financial-assistance/igig.html
- Illinois Indiana Sea Grant – <http://www.iisgcp.org/>
- WaterSense - www.epa.gov/WaterSense



Thank you!

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