



Chicago Metropolitan
Agency for Planning

Orland Park Water Conservation Project

May 2, 2012

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Presentation Content

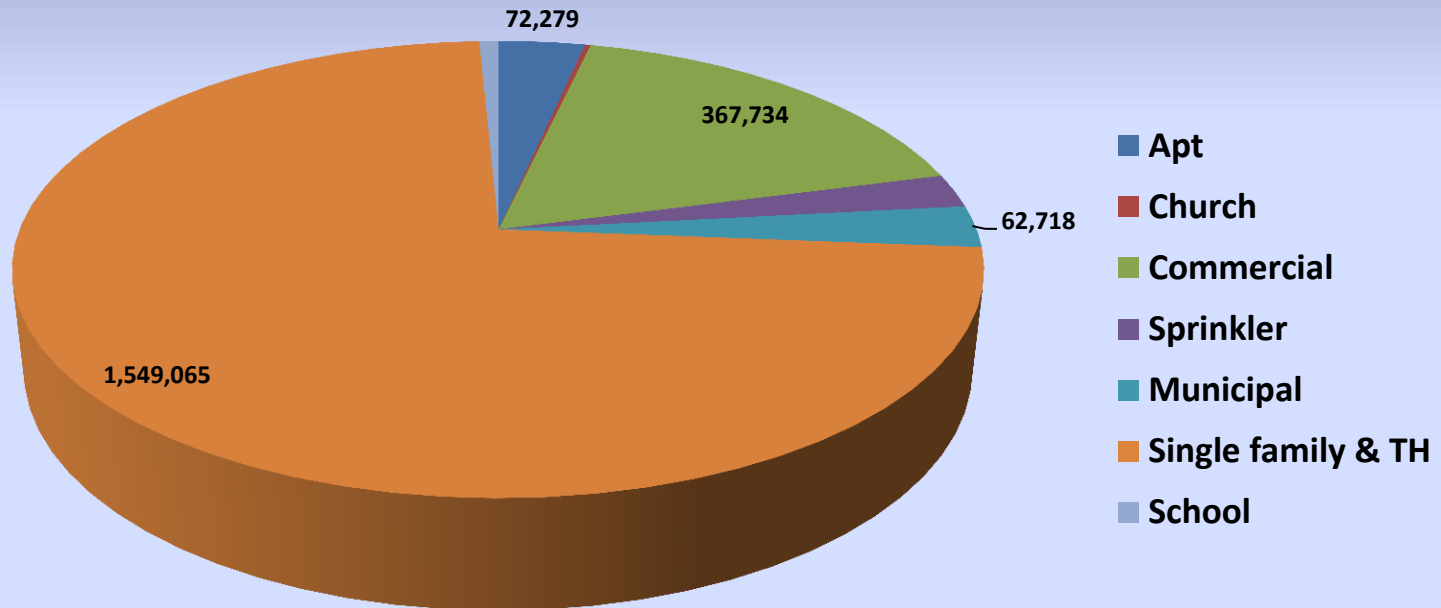
- **Project progress**
- **Water use analysis**
- **Water use facts**
- **Ordinance recommendations**
- **Program recommendations**
- **Next steps**

Project Progress

- **Work with Smart Living Steering Committee + other community stakeholders**
 - **Public meetings and public comment: February-June 2012**
 - **Draft report review**
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Water use analysis

2011 Total consumption by sector (thousands of gallons)



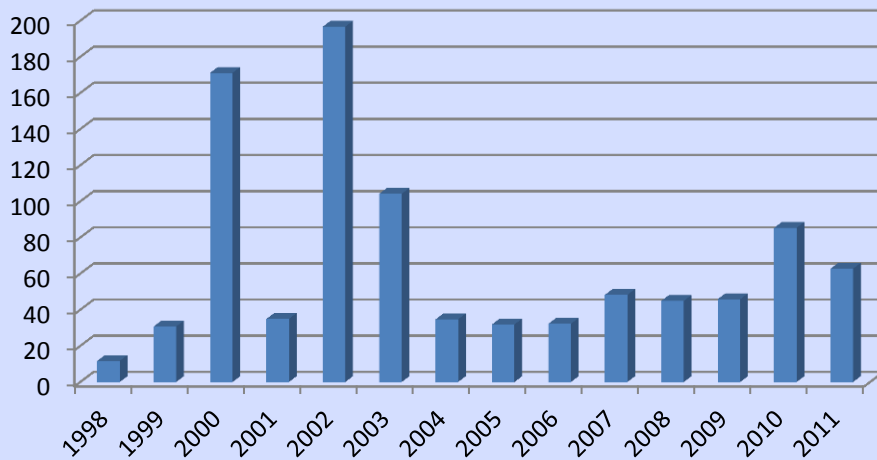
Water use analysis

Sector	Percentage water use	Accounts/sector	Sector average consumption (gallons)
Apartments	3	1,357	53,264
Places of worship	1	22	202,818
Commercial	17	1,874	196,229
Municipal	3	51	1,229,765
Single family + townhomes	73	22,339	69,344
Schools	1	22	730,545
Sprinkler	2	130	387,285

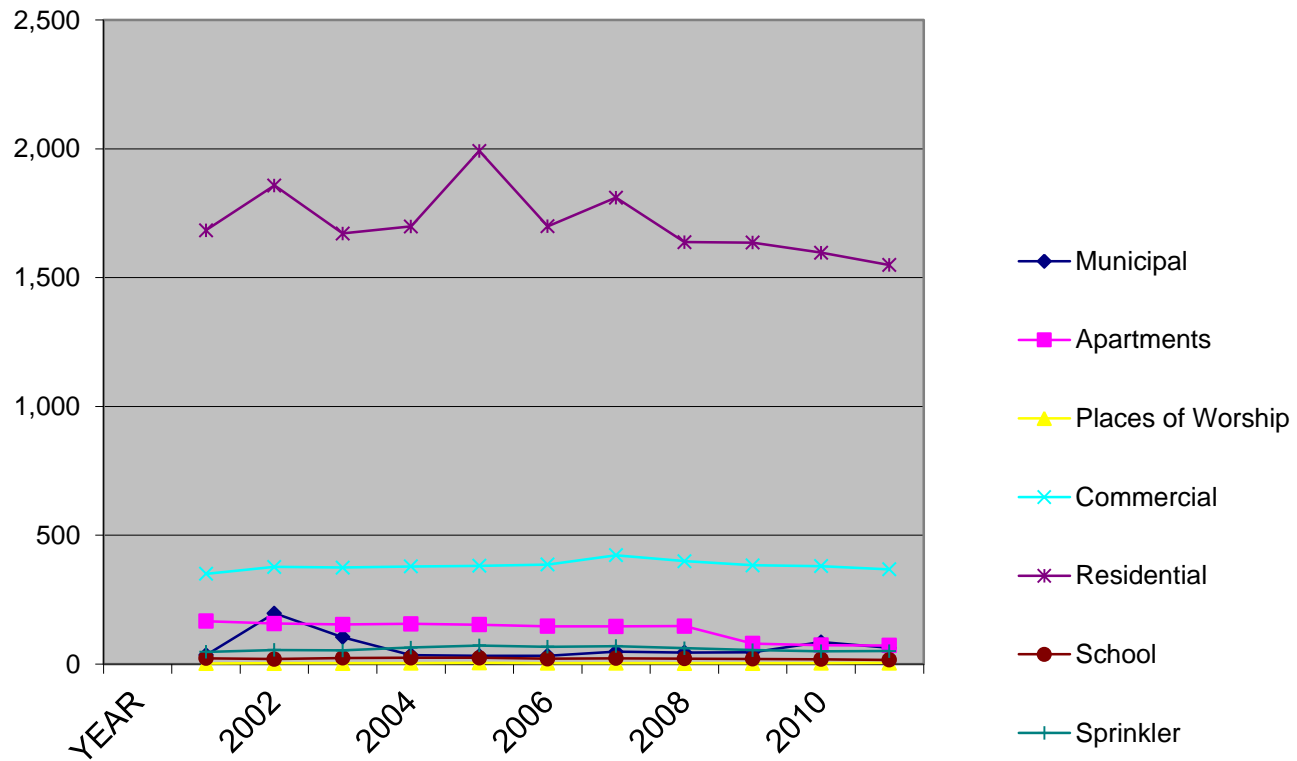
2011 Average consumption by sector

Water use analysis

Municipal water use 1998- 2011 (millions gallons)

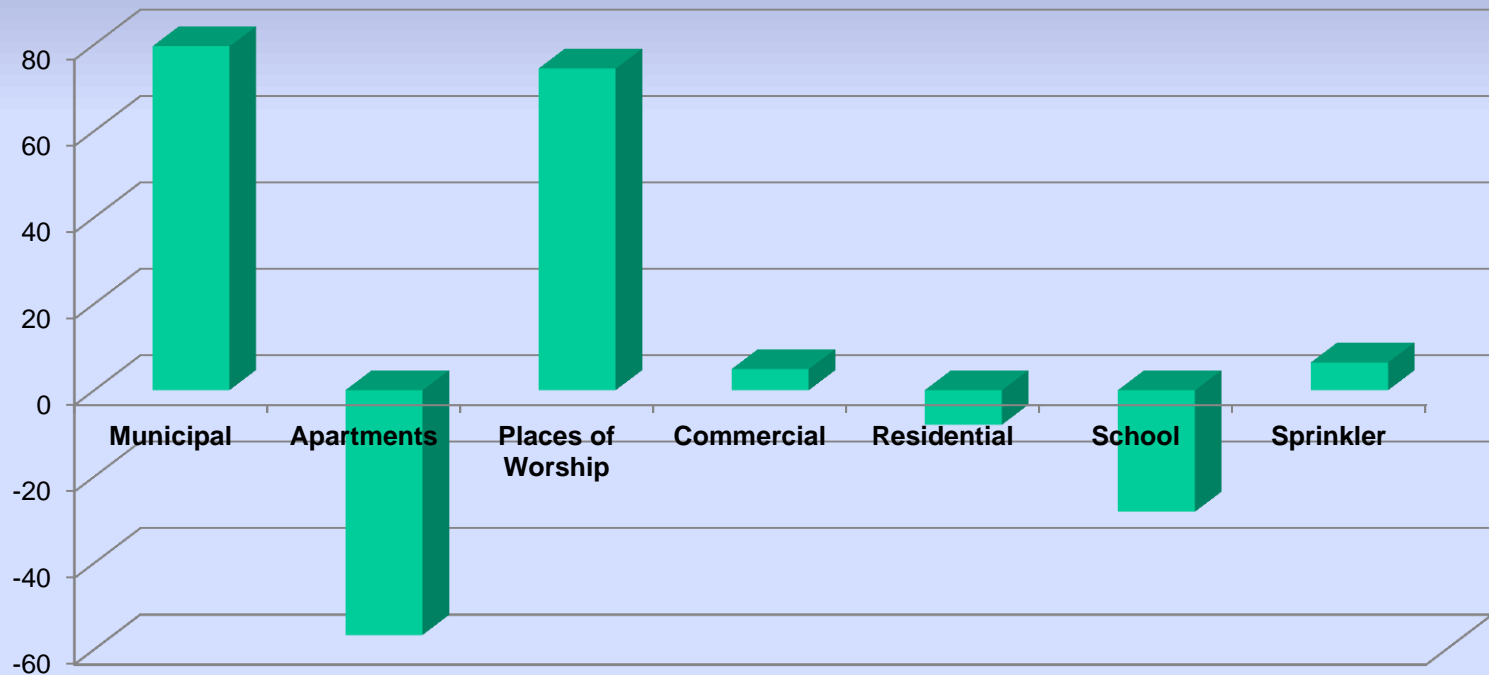


Water use analysis



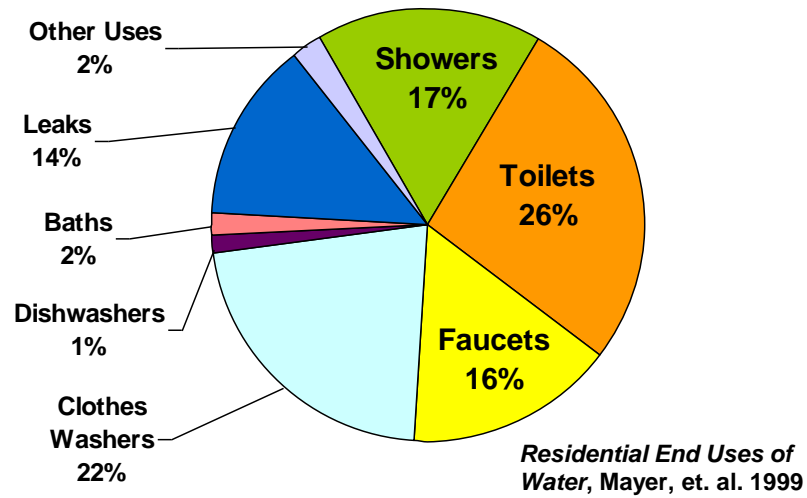
Water use analysis

Percentage change in water consumption by sector 2001-2011

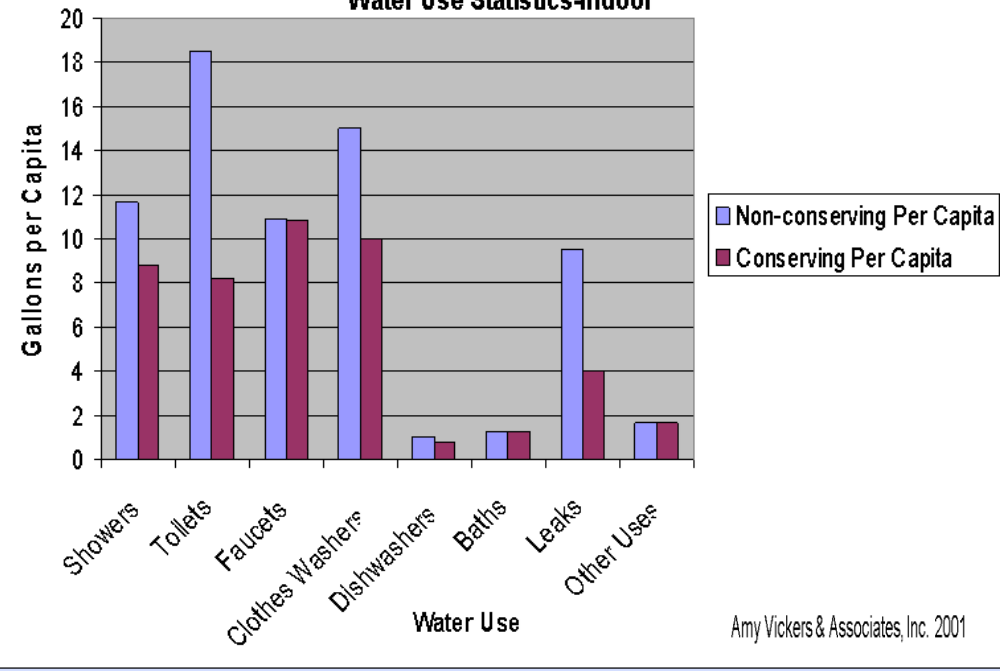


Typical household indoor water use

Daily Residential Indoor Water Use



Water Use Statistics-Indoor



Existing ordinances

- **Existing Water Conservation provisions are spread across:**
 - **Title 4 of the Village Code (in multiple chapters)**
 - **Multiple sections of the Land Development Code (in terms of water use and water infrastructure)**
 - **Municipal Department Policies (e.g. Public Works as public utility's implementation of best management and current practices)**
 - **Police Monitoring for outdoor water use during Summer Restrictions**
 - **Plumbing and Building Codes**

Existing Ordinances

- 1. Anticipated water usage for development - Title 4, Chapter 1, Additional Conditions 4-1-6(i)**
 - 2. Pricing: Title 4, Chapter 3, Water Charges and Rates 4-3-1-1(A)**
 - 3. Restrictions on outdoor water use (7:00 – 11:00 year round and odd/even during 5/15-9/15): Title 4, Chapter 8, 4-8-3. Restrictions cover all manners of irrigation but allow certain uses, e.g. golf course irrigation, construction, etc.**
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Existing Programs

- 1. Rainwater harvesting- related to water use conservation:**
 - I. Rain barrel sales: residential sector**
 - II. Stormwater cistern: non-residential sector**
 - 2. Cost-share program for rain detection devices (50% up to \$70)**
 - 3. Education/outreach**
 - I. Residential Rewards Program**
 - II. Green Tent**
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Ordinance recommendations

- New/rehabbed construction- indoors
 - **Toilets (water closets).** No toilet shall have a flush volume greater than 1.6 gallons per flush (gpf).
 - **Faucets.** No faucet shall have a flow volume greater than 2.2 gallons per minutes at 60 psi (pounds per square inch).
 - **Showerheads (for the residential sector only).** The maximum flow rate for showerheads shall be 2.0 gallons per minute at 80 psi in accordance with ASME A112.18.1/CSA B125.1.
 - **Dishwashers.** Dishwashers shall comply with US EPA ENERGY STAR Program Requirements.
 - **Clothes Washers.** Clothes washers shall comply with the EPA ENERGY STAR program requirements.
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Water and energy savings

Water Savings		
Fixture	Potential Water Savings (gallons)/household/day	Potential Water Savings (gallons)/household/year
Toilet	32	11,500
Lavatory Faucet	15	5,500
Showerhead	7	2,400
Clothes Washer	12	4,500
Energy Savings		
Fixture	Energy Savings (kWh)/household/day	Energy Savings (kWh)/household/year
Lavatory Faucet	0.84	307
Showerhead	0.86	315
Clothes Washer	1.4	511

\$\$ talk

- Toilet replacements:
 - Toilet costs: \$75- 600, installation costs: \$150- 500
 - Shower retrofits
 - Showerhead costs: \$4- 8, installation costs: \$0
 - Faucets
 - Aerator costs: \$0.5- 3, installation costs: \$0
 - Replacement costs: \$50- 250
 - Overall savings: \$30- 45/person/year
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Showerheads in Massachusetts

- Athletic facility
- 35 low-volume 2.5 gallons per minutes (gpm).
- Water savings totaled 328,000 gallons a year.
- Initial cost of \$300
- Annual savings of \$3,300 from reduced water, sewer, and hot water energy costs,
- Payback -one month.

- Multi-family retrofit scenario-potential

Sources of Landscape Water Waste

- **Fact: 30- 60% of residential water consumption is outdoor irrigation**
- **Poor irrigation scheduling**
- **Inefficient irrigation systems and practices**
- **Fixed notions about what constitutes attractive & functional landscapes**
 - **\$750 spent annually to seed grass**
 - **\$25 billion spent on mowers, hoses, clippers, etc.**
 - **600 million gallons of gasoline used annually for lawn mowing eqp**

Effects of Landscape Water Waste

- **Increases water costs**
- **Depletes water supply sources & other natural systems**
- **Adds to pollution from lawn & other landscape chemicals**
- **Requires considerable time, labor & energy for maintenance**

Ordinance recommendations

- New/rehabbed construction- outdoors
 - **Turf Area and Location.** Residents are encouraged to limit the combined size of turf (plus other high water use plants) to no more than 40% of the total developed landscape area.
 - **Planting.** Residents are encouraged to use native plants and/or low water use plants.
 - **Soil Depth.** Areas planted with turf grass shall have a minimum of 6 inches of topsoil depth. The soil shall be blended with compost incorporated in the top 2 inches of the native soil in a ratio of soil to compost appropriate to the local soil characteristics.
 - **Mulching.** All exposed soil shall be covered with a 2 to 3-inch layer of mulching material.

Ordinance recommendations

- New/rehabbed construction- outdoors
 - **Landscape Irrigation Equipment.** Any new system installed within residential areas (for landscape areas > X acres) must be equipped with rain and soil moisture sensing devices and freeze gauges that shut off the systems and that are approved as to number and type by the Director of Public Works/Planning.
 - Sprinkler heads must not spray onto or over any hardscape areas, including streets, sidewalks, driveways, decks, patios and buildings.
 - Strips of land less than 6 feet in width shall be irrigated by drip or micro irrigation systems.
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Ordinance recommendations

- Irrigation schedules
 - **Landscape Irrigation Days**. At even numbered addresses, landscape irrigation may occur only on Wednesdays and Saturdays. Odd numbered addresses may irrigate only on Thursdays and Sundays.
 - **Landscape Irrigation Schedules**. Between the months of April through October, landscape irrigation shall not occur between 10:00 AM and 6:00 PM. Irrigation shall not continue beyond 2 hours per irrigation day nor more than $\frac{3}{4}$ inch during the allocated schedule.
 - **Irrigation Permits**. Residents may receive permits for the irrigation of new landscape to allow watering at any time of day on any day for the initial 30 days and every other day for the next 30 days for a total of one 60-day period.
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IDOT wildflower plantings in the right-of-way



Wheaton-Warrenville South High School

4/18/2012



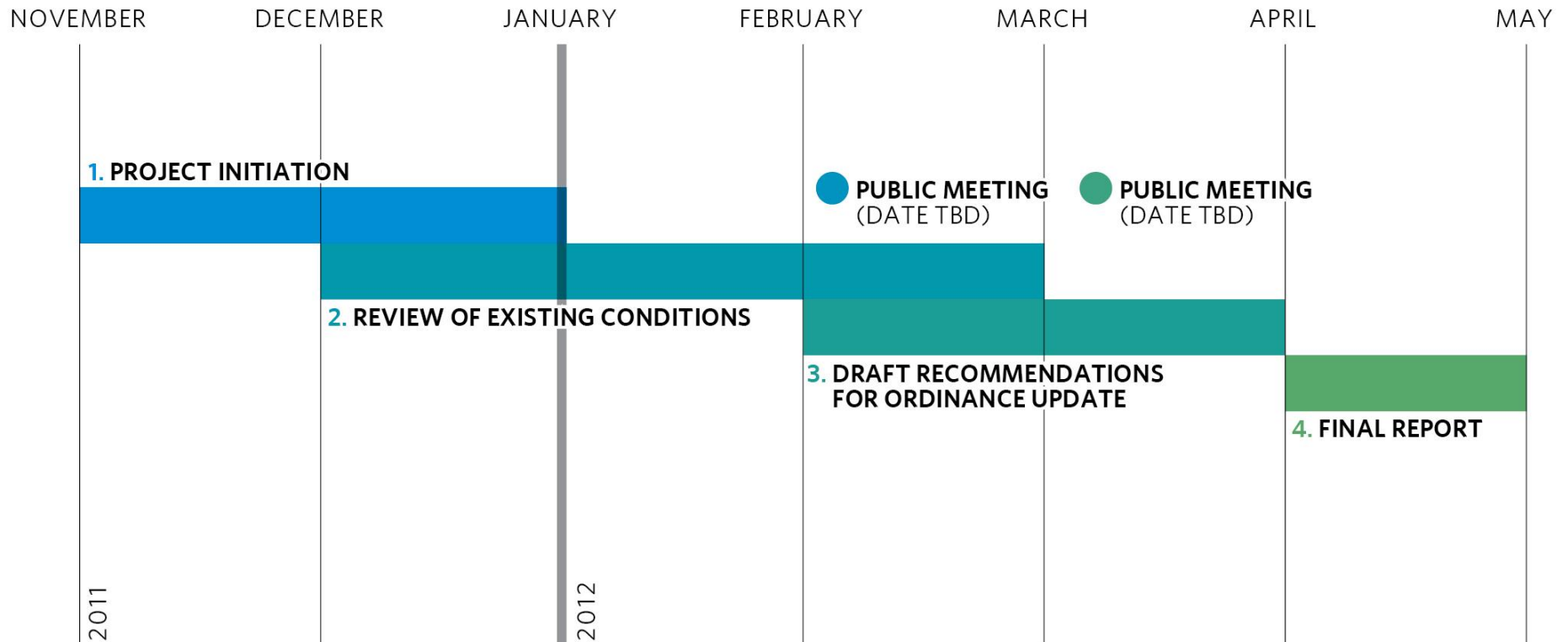
Orland Park Police Headquarters

Program recommendations

- **Education and outreach:** Residential Rewards, School Programs, WaterSense Partnership
 - **Incentives:** residential rebates, conservation kits, incentive payments
 - **Audits:** in municipal buildings, schools, places of worship, high consuming commercial accounts
 - **Sustainable landscaping:** native plantings, natural lawn care
 - **Water billing:** additional info in bills on water use and water conservation
 - **Pricing**
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Village of Orland Park Water Conservation Project



Next steps

- Next committee meetings
- Board of Trustees in June 2012
- Collaboration with the communities of the Oak Lawn water supply system (2012)
- Implementation of the CMAP Report (2013)
 - Water Resources Chapter in LDC
 - Water Use
 - Storm Water
 - Sanitary
 - Plumbing upgrades in Building Code
- Implement and Enforce Ordinances
- Build Programs and Incentives

Questions/Comments?

Thank you

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