Albany Pool Combined Sewer System Long-Term Control Plan Development

Proposed Implementation Schedule
May 10, 2011

Joint Venture Team
albany pool
CDM MALCOLM PIRNIE CHA

Albany Cohoes Green Island Rensselaer Troy Watervliet

Agenda

- Review CSS and WQ model findings
- Review recommended CSO LTCP
- Proposed Implementation Schedule
- Community by Community Impacts
- Next Steps
- Questions and Answers

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Albany Pool Baseline CSO Statistics

- All statistics are annual averages over the five year model simulation period
  - CSO Volume = 1236 Mgal
  - Wet weather flow treated at the WWTPs = 2827 Mgal
  - Pool-wide percent capture = 69.5%
  - Pool-wide treatment and floatables capture = 70.1%
  - Flow presently not disinfected at the WWTPs

Bacteria Modeling Results

Scenario	WWTP Disinfection	Headwaters	Tributaries	CSO	Exceedances (months/30 months)
Baseline	No	Baseline	Baseline	Baseline	30
1	Yes	Baseline	Baseline	Baseline	2
2	Yes	Improved	Improved	Baseline	0
2A	Yes	Improved	Baseline; Patroon Creek improved to 2009 levels	Baseline	0
3	Yes	Baseline	Baseline	85% Capture	2
4	No	Baseline	Baseline	85% Capture	30

Baseline refers to 2008 calibrated conditions

RWQ Modeling Conclusions

- CSOs do not preclude the Hudson River attaining water quality standards
- Bacteria standard is expected to be met upon implementation of WWTP seasonal disinfection and improvements to headwaters of the Hudson River and Patroon Creek
- Improvements to Hudson River continuous bacteria loads provide more effective bacteria-based water quality improvements than improvements to intermittent, wet weather-based CSO discharges

CSO Control Strategy

- Use Demonstrative Approach for CSO Control
- Achieve regulatory compliance as measured by the water quality standard for bacteria
- Optimize performance of existing infrastructure
- Incorporate WWTP and system rehabilitation projects to address current needs and reduce risk of emergency repairs
- Minimize additional infrastructure that will require additional O&M

Summary of Recommended CSO LTCP

- Disinfection Projects - $16.0 million
- WWTP Process Improvement Projects - $15.8 million
- BMPs & System Optimization Projects - $15.7 million
- Sewer Separation and Storage Projects - $32.1 million
- Floatables Control Facilities - $25.7 million
- Tributary Enhancements - $2.8 million
- Additional Pool-Wide Projects - $1.5 million

- Total Cost of Albany Pool LTCP - $109.6 million

Statistics Upon Implementation of CSO LTCP

	Baseline	Post Construction of Recommended Projects
CSO Volume (Mgal)	1236	925
Number of Events	65	65
Wet Weather Flow Treated at WWTPs (Mgal)	2827	3031
Pool-Wide Percent Capture	69.5%	77.2%
CSO Flow Receiving Floatables Control (Mgal)	27	454
Pool-Wide Treatment & Floatables Capture	70.1%	88.8%
Disinfection at WWTPs	No	Seasonal
Fecal Coliform WQ Standard Violations	30	0

Benefits of Recommended CSO LTCP

- Compliance with WQ Standards for fecal coliform
- Recurring DWOs to be addressed
- SPDES Permit compliance
- Improved conveyance of wet weather flow to WWTPs
- Maximizes WWTP wet weather capacity
- Seasonal disinfection of WWTP effluent
- Improvements to water quality of tributaries
- Reduced CSO discharge volume by 311 Mgal
- Provides floatables control for 454 Mgal

Proposed Implementation Schedule

- Immediate Water Quality Benefits
- Maintains SPDES/Consent Order Dates
- Preserves Capital for Repair & Replacement
- Maintains Affordability

Water Quality Based Goals

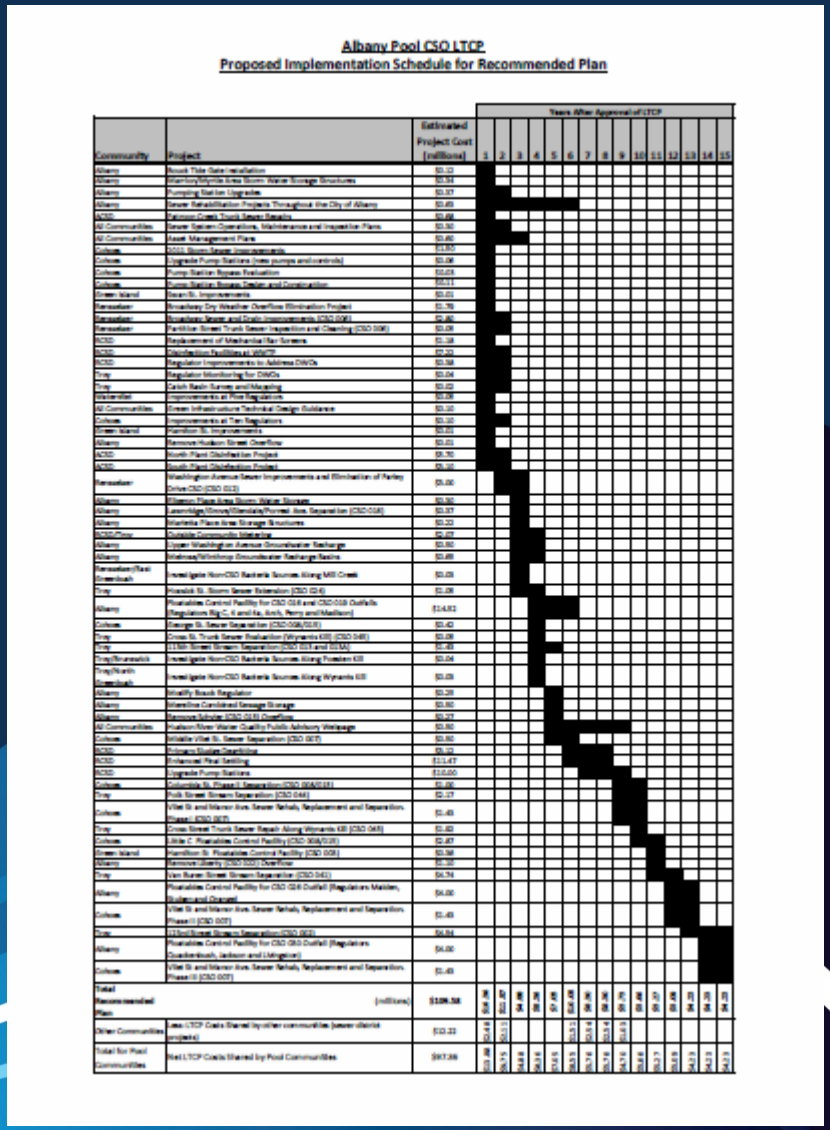
- Implement Disinfection Projects early for greatest benefit
- Perform Tributary Improvements for 24/7 benefit
- Implement Optimization projects to reduce overflows and maximize WWTP flows
- Construct Big C Floatables Control Project (FCP) for greatest early impact
- Perform WWTP and Pump Station Improvements
- Implement Satellite FCPs

Implementation Schedule Constraints

- Consent Order Compliance Dates
  - Cohoes Pump Station Upgrades
  - RCSD/Troy Dry Weather Overflows (Pending)
- SPDES compliance dates need to be met
  - RSCD Disinfection by September 2012
  - ACSD Disinfection by LTCP Approval plus 30 months
- Secured project financing (favorable low interest loans)
- Stage projects to minimize project interferences
- Year by year affordability based on projected rate increases

Proposed Implementation Schedule

- See accompanying handout for details



Albany Pool CSO LTCP
Proposed Implementation Schedule for Recommended Plan

Community	Project	Estimated Project Cost (millions)	Years After Approval of LTCP 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Albany	Knox Tide Gate Installation	$0.12															
Albany	Sterling/Myrtle Area Storm Water Storage Structures	$0.34															
Albany	Pumping Station Upgrades	$0.37															
Albany	Sewer Rehabilitation Projects Throughout the City of Albany	$0.45															
ACSD	Salmon Creek Trunk Sewer Repairs	$0.68															
All Communities	Sewer System Operations, Maintenance and Inspection Plans	$0.30															
All Communities	Asset Management Plans	$0.40															
Cohoes	2003 Storm Sewer Improvements	$1.90															
Cohoes	Upgrade Pump Stations (new pumps and controls)	$0.06															
Cohoes	Pump Station Bypass Evaluation	$0.03															
Cohoes	Pump Station Bypass Design and Construction	$0.11															
Green Island	Swan St. Improvements	$0.41															
Rensselaer	Broadway Dry Weather Overflow Elimination Project	$1.78															
Rensselaer	Broadway Sewer and Drain Improvements (CSO 006)	$2.40															
Rensselaer	Fashion Street Trunk Sewer Inspection and Cleaning (CSO 006)	$0.09															
RCSD	Replacement of Mechanical Bar Screens	$1.38															
RCSD	Disinfection Facilities at WWTP	$9.00															
RCSD	Regulator Improvements to Address DWOs	$0.58															
Troy	Regulator Monitoring for DWOs	$0.04															
Troy	Catch Basin Survey and Mapping	$0.02															
Watervliet	Improvements at Pine Regulators	$0.08															
All Communities	Green Infrastructure Technical Design Guidance	$0.10															
Cohoes	Improvements at Ten Regulators	$0.10															
Green Island	Hamilton St. Improvements	$0.61															
Albany	Remove Hudson Street Overflow	$0.21															
RCSD	North Plant Disinfection Project	$9.70															
RCSD	South Plant Disinfection Project	$9.10															
Rensselaer	Washington Avenue Sewer Improvements and Elimination of Parley Drive CSO (CSO 012)	$5.00															
Albany	Bleecker Place Area Storm Water Storage	$0.30															
Albany	Lexington/Elmira/Glendale/Normal Ave. Separation (CSO 016)	$0.37															
Albany	Marietta Place Area Storage Structures	$0.22															
ACSD/Town	Outside Community Interceptor	$1.27															
Albany	Upper Washington Avenue Groundwater Recharge	$0.90															
Albany	Melrose/Winthrop Groundwater Recharge Basins	$0.49															
Rensselaer/East Greenbush	Investigate Non-CSO Bacteria Sources Along Mill Creek	$0.03															
Troy	Hoosick St. Storm Sewer Extension (CSO 024)	$1.08															
Albany	Floatables Control Facility for CSO 014 and CSO 018 Outfalls (Regulators Rig C, 4 and 4a, Arch, Perry and Madison)	$14.81															
Cohoes	George St. Sewer Separation (CSO 006/018)	$0.43															
Troy	Cross St. Trunk Sewer Evaluation (Wynants Kill) (CSO 045)	$0.09															
Troy	115th Street Sewer Separation (CSO 015 and 016)	$1.48															
Troy/Brunswick	Investigate Non-CSO Bacteria Sources Along Poesten Kill	$0.04															
Troy/North Greenbush	Investigate Non-CSO Bacteria Sources Along Wynants Kill	$0.09															
Albany	Modify Knox Regulator	$0.28															
Albany	Interline Combined Sewage Storage	$0.80															
Albany	Sewage Solutions (CSO 019) Overflow	$0.27															
All Communities	Hudson River Water Quality Public Advisory Webpage	$0.50															
Cohoes	Mohawk View St. Sewer Separation (CSO 007)	$0.50															
RCSD	Primary Basin Deactivate	$0.12															
RCSD	Enhanced Final Settling	$11.47															
RCSD	Upgrade Pump Stations	$16.00															
Cohoes	Columbia St. Phase I Separation (CSO 004/018)	$1.40															
Troy	Polk Street Stream Separation (CSO 044)	$2.27															
Cohoes	Vliet St and Manor Ave. Sewer Rehab, Replacement and Separation, Phase I (CSO 007)	$1.49															
Troy	Cross Street Trunk Sewer Repair Along Wynants Kill (CSO 045)	$1.80															
Cohoes	Linda C Floatables Control Facility (CSO 004/018)	$2.47															
Green Island	Hamilton St. Floatables Control Facility (CSO 009)	$0.38															
Albany	Remove Liberty (CSO 002) Overflow	$1.10															
Troy	Van Buren Street Stream Separation (CSO 041)	$0.74															
Albany	Floatables Control Facility for CSO 014 Outfall (Regulators Madison, Broadway and Canal)	$4.00															
Cohoes	Vliet St and Manor Ave. Sewer Rehab, Replacement and Separation, Phase II (CSO 007)	$1.49															
Troy	115th Street Stream Separation (CSO 015)	$0.84															
Albany	Floatables Control Facility for CSO 003 Outfall (Regulators Quackenbush, Jackson and Livingston)	$4.00															
Cohoes	Vliet St and Manor Ave. Sewer Rehab, Replacement and Separation, Phase III (CSO 007)	$1.49															
Total Recommended Plan	(millions)	$139.58	$0.38	$11.90	$6.75	$11.90	$6.38	$7.05	$16.05	$8.36	$8.36	$9.75	$5.63	$8.36	$8.31	$5.36	$4.23	$4.23	$4.23
Other Communities	Less LTCP Costs Shared by other communities (sewer district projects)	$12.22	$0.38	$1.13	$0.75	$1.13	$0.38	$0.95	$1.53	$0.79	$0.79	$0.76	$0.53	$0.79	$0.79	$0.51	$0.40	$0.40	$0.40
Total for Pool Communities	Net LTCP Costs Shared by Pool Communities	$97.36		$10.77	$6.00	$10.77	$6.00	$6.10	$14.52	$7.57	$7.57	$8.99	$5.10	$7.57	$7.52	$4.85	$3.83	$3.83	$3.83

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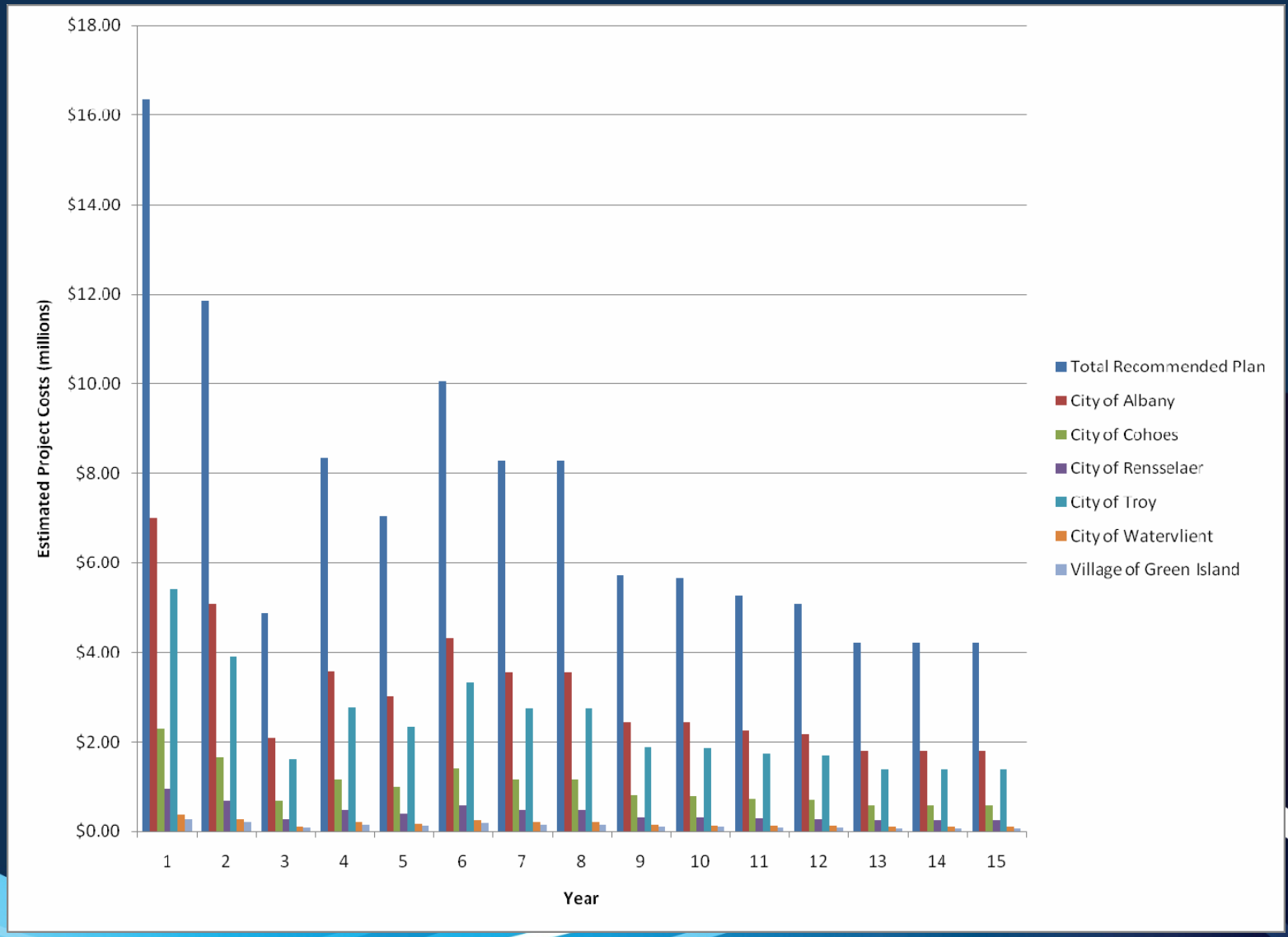
Year-by-Year Cost/Rate Assumptions

- Capital projects implemented per the 15-year schedule
- Community rate analyses requires distribution of costs
  - Cost distribution among the communities has not been agreed upon
  - Therefore, costs were distributed based on Part B allocation formula
- Other non-LTCP capital improvement plan projects included in the analysis

Year-by-Year Capital Expenditures



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EPA Financial Capability Assessment Results

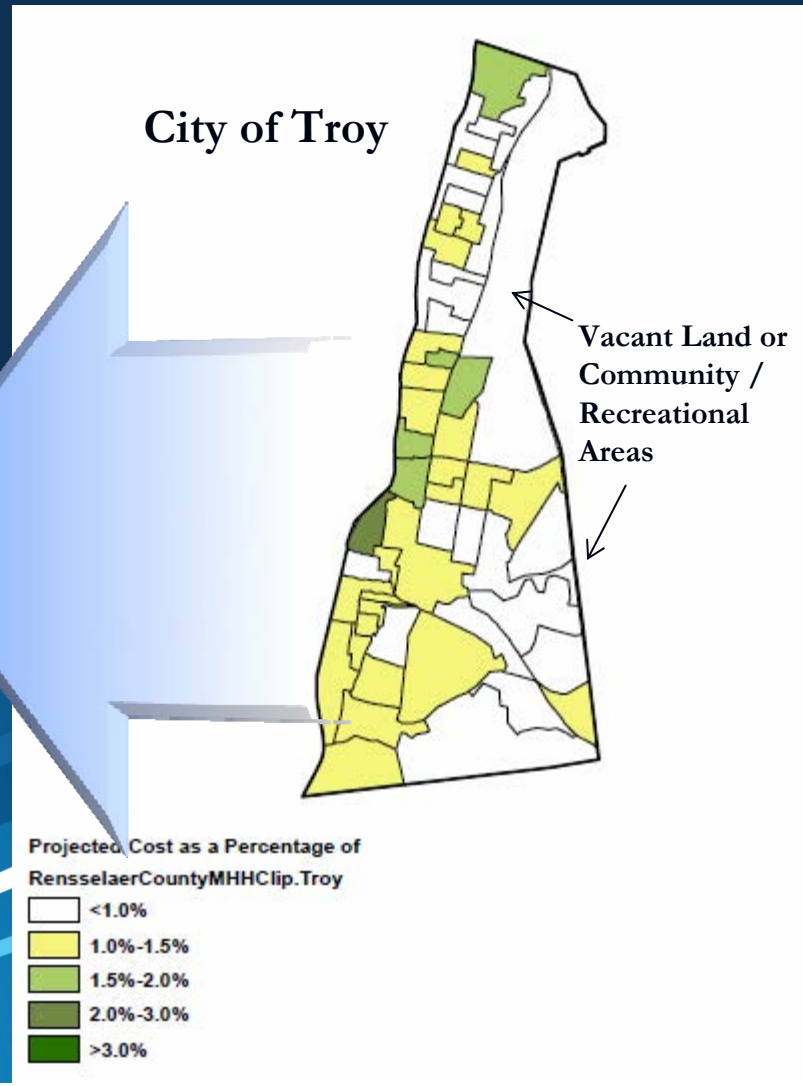
- Phase I – Residential Indicator in the “Mid-Range”
- Phase II – Average Community Financial Indicator in the “Mid-Range”
- Combined Financial Capability Matrix Score – “Medium Burden”

Significant Annual Rate Impacts Needed to Pay for the LTCP

	Year	Albany	Cohoes	Watervliet	Green Island	Rensselaer	Troy
0	2012	2%	3%	0%	3%	4%	4%
1	2013	6%	12%	0%	3%	9%	9%
2	2014	5%	15%	9%	6%	15%	10%
3	2015	4%	5%	4%	2%	7%	4%
4	2016	4%	5%	4%	5%	5%	4%
5	2017	2%	5%	4%	5%	6%	4%
6	2018	4%	10%	6%	6%	9%	7%
7	2019	9%	12%	7%	7%	12%	9%
8	2020	4%	9%	6%	6%	9%	7%
9	2021	5%	6%	5%	5%	6%	5%
10	2022	14%	6%	4%	5%	5%	5%
11	2023	0%	6%	4%	4%	5%	5%
12	2024	0%	6%	4%	5%	5%	4%
13	2025	0%	3%	3%	4%	3%	3%
14	2026	0%	3%	3%	3%	3%	3%
15	2027	0%	2%	3%	2%	3%	3%

More Significant Affordability Concerns For Low Income Areas

	Year	Est. Annual Residential Customer Cost	Avg Income (Low Income Area)	Residential Cost as a % of Income
1	2013	$368	$17,967	2.0%
2	2014	$402	$18,398	2.2%
3	2015	$417	$18,840	2.2%
4	2016	$432	$19,292	2.2%
5	2017	$449	$19,755	2.3%
6	2018	$480	$20,229	2.4%
7	2019	$523	$20,714	2.5%
8	2020	$557	$21,212	2.6%
9	2021	$584	$21,721	2.7%
10	2022	$609	$22,242	2.7%
11	2023	$635	$22,776	2.8%
12	2024	$661	$23,322	2.8%
13	2025	$679	$23,882	2.8%
14	2026	$695	$24,455	2.8%
15	2027	$711	$25,042	2.8%



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- Immediate Water Quality Benefits
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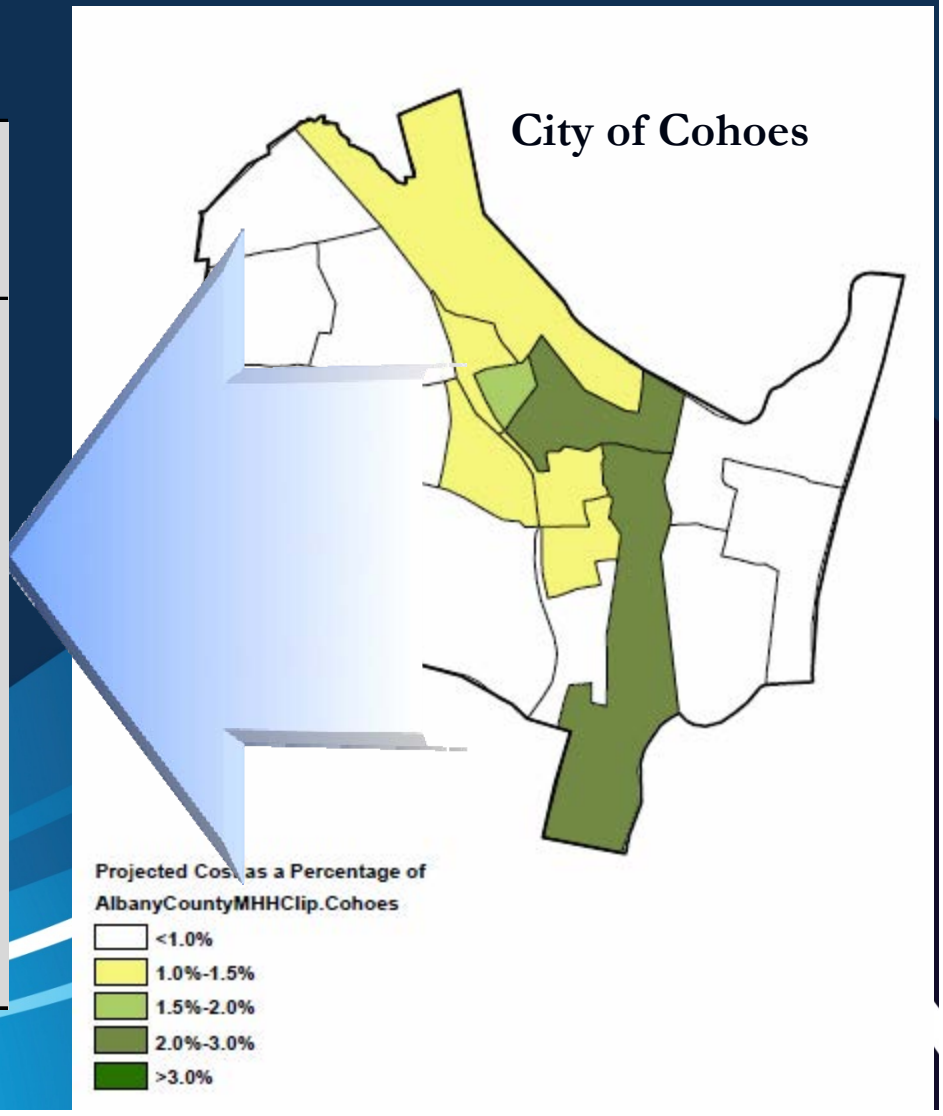
Next Steps

- Mid May – CAC Meeting to present projects and Implementation Schedule
- June 1, 2011 – Public Meeting at HVCC
- Submit CSO LTCP

Extra Slides

More Significant Affordability Concerns For Low Income Areas

	Year	Est. Annual Residential Customer Cost	Avg Income (Low Income Area)	Residential Cost as a % of Income
1	2013	$336	$22,260	1.5%
2	2014	$384	$22,772	1.7%
3	2015	$399	$23,296	1.7%
4	2016	$416	$23,831	1.7%
5	2017	$435	$24,379	1.8%
6	2018	$474	$24,940	1.9%
7	2019	$531	$25,514	2.1%
8	2020	$575	$26,101	2.2%
9	2021	$609	$26,701	2.3%
10	2022	$641	$27,315	2.3%
11	2023	$674	$27,943	2.4%
12	2024	$709	$28,586	2.5%
13	2025	$730	$29,244	2.5%
14	2026	$746	$29,916	2.5%
15	2027	$760	$30,604	2.5%



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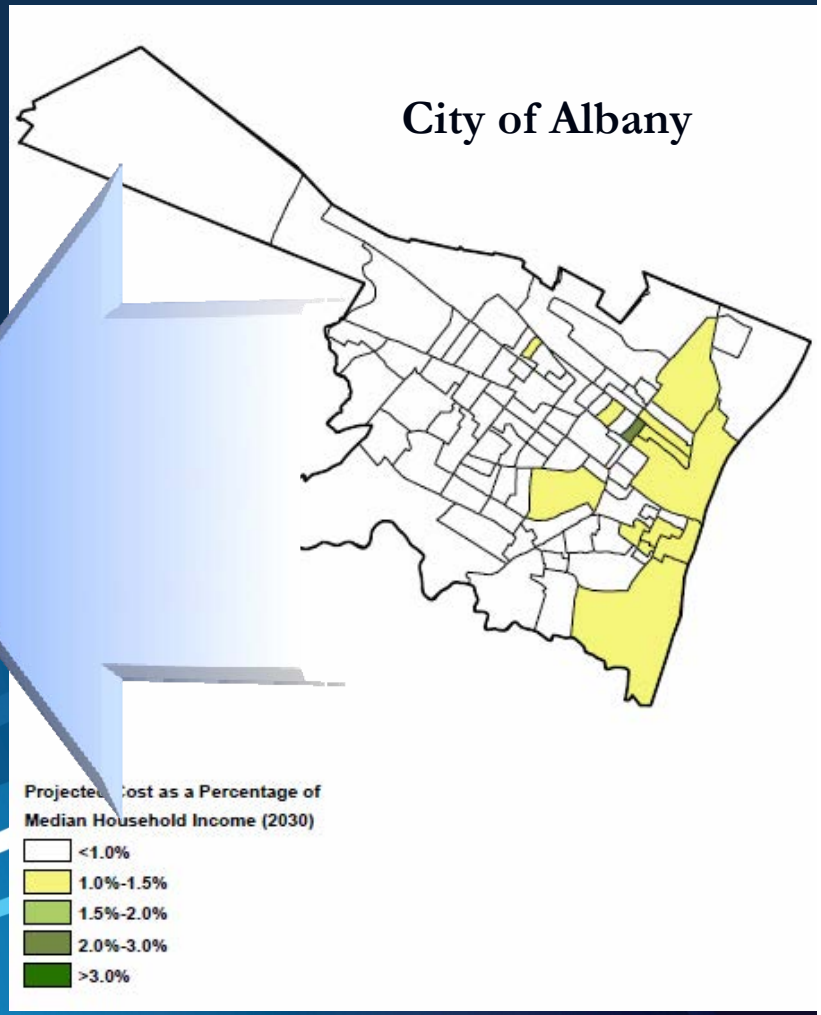
More Significant Affordability Concerns For Low Income Areas

	Year	Est. Annual Residential Customer Cost	Avg Income (Low Income Area)	Residential Cost as a % of Income
1	2013	$262	$13,697	1.9%
2	2014	$280	$14,039	2.0%
3	2015	$288	$14,390	2.0%
4	2016	$298	$14,750	2.0%
5	2017	$302	$15,119	2.0%
6	2018	$312	$15,497	2.0%
7	2019	$337	$15,884	2.1%
8	2020	$349	$16,281	2.1%
9	2021	$365	$16,688	2.2%
10	2022	$414	$17,106	2.4%
11	2023	$414	$17,533	2.4%
12	2024	$414	$17,972	2.3%
13	2025	$414	$18,421	2.2%
14	2026	$414	$18,881	2.2%
15	2027	$414	$19,353	2.1%



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