

TO: BOARD OF DIRECTORS
FROM: MICHAEL S. LEBRUN *MSL*
GENERAL MANAGER
DATE: MARCH 9, 2012

**AGENDA ITEM
F
MARCH 14, 2012**

GENERAL MANAGER'S REPORT

ITEM

Standing report to your Honorable Board -- *Period covered by this report is February 23, 2012 through March 9, 2012*

DISTRICT BUSINESS

Administrative

- Operations recruitment;
 - Mr. Lloyd Boyer has passed pre-employment screening and accepted the District's offer of employment as a Customer Service Maintenance Worker. Mr. Boyer is scheduled to start work at the District on March 19, 2012.
 - A second offer is pending.
- Staff is soliciting proposals for enclosing the office front counter to increase security. This project is included in the District's 2011-2012 Fiscal Budget.
- Maintenance of the office parking area (seal and overlay) is being scheduled for an upcoming weekend.
- Two Automatic External Difibulators have been purchased and installed. One is located at the District's Administrative offices (148 South Wilson Street) and one at the Field Office (509 Southland Street)
- A summary of Supplemental Water Project expenditures through January 2012 is attached.
- City of Santa Maria Resolution granting consent to the formation of an assessment district by NCSD – Transmittal letter and adopted Resolution attached.
- March 14, 2012 SLO County Integrated Waste Management Board Meeting Agenda (Attached, A complete copy of Agenda packet is available upon request)
- March 15, 2012 SLO Local Area Formation Commission Meeting Agenda (Attached)
- February 23, 2012 American Water Works Association "Buried No Longer" transmittal and publication (Attached).
- High efficiency washer rebate summary (Attached)

- **Next page**

Connections Summary

| Nipomo Community Services District Water and Sewer Connections | | End of Month Report 2012 | | |
|---|--------|--------------------------|--------|--|
| | Dec-11 | JAN-12 | FEB-12 | |
| Water Connections (Total) | 4232 | 4232 | 4239 | |
| Sewer Connections (Total) | 3022 | 3022 | 3035 | |
| Meters turned off (Non-payment) | 23 | 28 | 22 | |
| Meters off (Vacant) | 62 | 64 | 62 | |
| Sewer Connections off (Vacant) | 20 | 24 | 22 | |
| New Water Connections | 0 | 0 | 7 | |
| New Sewer Connection | 0 | 0 | 13 | |
| Galaxy & PSHH at Orchard and Division Sewer Connections billed to the County | 460 | 460 | | |

Water & Sewer PSHH Tract 1747 7 new houses
777 Drumm connected to Sewer
340 Ave De Socios connected to Sewer 4 apts
171 E Branch connected to Sewer

Meetings

Meetings attended:

- February 27, Finance Committee
- February 27, Capital Improvements Update with Operations and Engineering
- February 28, Tribune Editorial Review Board on Supplemental Water Project Endorsement
- February 29, Regular Board Meeting
- March 1, Human Resources Webinar on staff management
- March 1, Automatic External Defibrillator Training (all staff)
- March 1, Management Coordination
- March 2, Coordination with General Counsel
- March 5, Supplemental Water Project Ad Hoc and Bond Counsel
- March 5, Coordination with Board Officers
- March 7, Supplemental Water Project Ad-Hoc and Bond Counsel
- March 7, Southland WWTF Phase I improvements Bond/Finance Team
- March 9, SLO County Public Works Director regarding Supplemental Water

Meetings Scheduled:

- March 13, Supplemental Water project partners
- March 13, Supplemental Water Assessment Engineer, Bond Counsel and General Counsel
- March 14, Regular Board Meeting
- March 15, Finance and Audit Committee 2012-2013 Budget Kick-Off
- March 15, Supplemental Water Project Ad-Hoc and SLO County Public Works Director
- March 16, NMMA Technical Group
- March 16, Coordination with General Counsel
- March 19, Coordination with Board Officers
- March 20, Coordination with District Engineer

- *March 20, Southland Financing*
- *March 21, Supplemental Water Project Ad-Hoc and SLO County Public Works Director*

Safety Program

No accidents, incidents, or injuries to report. Automatic External Difbulator training completed by all staff on March 1, 2012.

RECOMMENDATION

Staff seeks direction and input from your Honorable Board

ATTACHMENTS

- Supplemental Water Project Expenditures through January 2012
- February 24, 2012 City of Santa Maria Transmittal Letter and Resolution
- March 14, 2012 SLO County IWMA Agenda
- March 15, 2012 SLO LAFCO Agenda
- February 23, 2012 AWWA Letter and Publication
- HEW Rebate Program Summary

NIPOMO COMMUNITY SERVICES DISTRICT
 SUPPLEMENTAL WATER PROJECT
 MONTHLY REPORT TO THE BOARD OF DIRECTORS
 (FY JUNE 30, 2012)

| REVENUES FY 2011-2012 | MONTH OF JANUARY | FISCAL YEAR 7/1/2011 TO 6/30/2012 |
|---|---------------------|---|
| Supplemental Water Capacity Fees Collected | 0.00 | 14,605.00 |
| Interest Income (monthly & quarterly posting) | 250.70 | 3,128.61 |
| Revenue Subtotal | 250.70 | 17,733.61 |
| EXPENDITURES FY 2011-2012 (1) | | |
| <u>CONSULTANTS</u> | | |
| 1590-A1 Feasibility Study (Cannon) | 0.00 | 0.00 |
| 1590-A2 EIR Preparation (Wood & Assoc) | 0.00 | 505.00 |
| 1590-A3 Estimate/Preliminary Schedule (Cannon) | 0.00 | 0.00 |
| 1590-A4 Proposed Routes/Facilities (Cannon) | 0.00 | 0.00 |
| 1590-A5 Prop 50 Grant Applicatin | 0.00 | 0.00 |
| 1590-A6 Project Support (Cannon) | 0.00 | 0.00 |
| 1590-A7 Groundwater Grant Assistance (SAIC) | 0.00 | 0.00 |
| <u>LEGAL</u> | | |
| 1590-B1 Shipsey & Seitz | 4,928.00 | 19,412.80 |
| 1590-B2 McDonough, Holland & Allen | 0.00 | 0.00 |
| 1590-B3 Richards, Watson & Gershon | 0.00 | 0.00 |
| <u>LAND ACQUISITION</u> | | |
| 1590-C1 Appraisals (Tarvin & Reeder Gilman) | 0.00 | 0.00 |
| 1590-C2 Property Negotiations (Hamner Jewell) | 1,520.00 | 9,358.67 |
| 1590-C3 Property Acquisitions | 0.00 | 2,800.00 |
| <u>FINANCIAL</u> | | |
| 1590-D1 Reed Group and Wallace Group | 0.00 | 0.00 |
| 1590-D2 Lobbying | 0.00 | 0.00 |
| <u>ENGINEERING</u> | | |
| 1590-E1 Preliminary Engineering Design (AECOM) | 0.00 | 0.00 |
| 1590-E2 Water Modeling by Carollo (City of Santa Maria) | 0.00 | 0.00 |
| 1590-E3 Alternative Water Supplies (AECOM) | 0.00 | 0.00 |
| 1590-E4 Project Information (AECOM) | 0.00 | 0.00 |
| 1590-E5 Project Design (AECOM) | 60,926.04 | 61,413.39 |
| 1590-E6 Pressure Testing | 0.00 | 0.00 |
| 1590-E7 Peer Review | 0.00 | 0.00 |
| 1590-E8 Pot Holing | 0.00 | 0.00 |
| <u>OTHER</u> | | |
| 1590-F1 FGL Environmental | 0.00 | 0.00 |
| 1590-F2 Copy/Print | 0.00 | 0.00 |
| <u>PERMITS</u> | | |
| 1590-G1 Santa Maria Valley Water Conservation District | 0.00 | 0.00 |
| <u>ASSESSMENT DISTRICT</u> | | |
| 1590-H1 Wallace Group | 51,143.79 | 83,155.20 |
| 1590-H2 SLO County Reimbursement Agreement for JPA | (16,622.90) | 11,476.99 |
| 1590-H3 Purveyor Partner Reimbursements to NCSD | 0.00 | 0.00 |
| 1590-H4 A/D Financial Advisor | 0.00 | 0.00 |
| 1590-H5 A/D Outreach/Education | 16,771.37 | 106,085.42 |
| <u>CONSTRUCTION</u> | | |
| 1590-I1 Construction Management (MNS) | 0.00 | 360.00 |
| 1590-I2 Arborist (A&T Arborists) | 0.00 | 0.00 |
| <u>SALARY AND BENEFITS (2)</u> | | |
| 1590-Z1 Wages-Capitalized | 3,621.00 | 27,068.54 |
| 1590-Z2 Payroll Taxes-Capitalized | 204.40 | 544.36 |
| 1590-Z3 Retirement-Capitalized | 920.96 | 6,720.39 |
| 1590-Z4 Medical-Capitalized | 443.54 | 1,897.28 |
| 1590-Z5 Dental/Vision-Capitalized | 55.33 | 216.28 |
| 1590-Z6 Workers Compensation-Capitalized | 14.62 | 109.29 |
| Expenditure Subtotal | 123,926.15 | 331,123.61 |
| Net Revenues less Expenditures | (123,675.45) | (313,390.00) |
| Beginning Fund Balance as of July 1, 2011 | | 2,070,224.10 |
| Ending Fund Balance as of January 31, 2012 | | 1,756,834.10 |

(1) See attached "Supplemental Water Cost Summary" for more detail.

(2) Salary and Benefits of GM and District Engineer are allocated among NCSD projects and capitalized as part of the cost of the project.

**NIPOMO COMMUNITY SERVICES DISTRICT
SUPPLEMENTAL WATER COST SUMMARY**

| A/C # | DESCRIPTION | 7/1/2004 TO 6/30/2005 | 7/1/2005 TO 6/30/2006 | 7/1/2006 TO 6/30/2007 | 7/1/2007 TO 6/30/2008 | 7/1/2008 TO 6/30/2009 | 7/1/2009 TO 6/30/2010 | 7/1/2010 TO 6/30/2011 | 7/1/2011 TO 6/30/2012 January | GRAND TOTAL |
|---------|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|----------------|
| 1645 | Reservation Fee-City of Santa Maria | 37,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 37,500.00 |
| 1590-A1 | Feasibility Study (Cannon) | 25,887.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 25,887.29 |
| 1590-A2 | EIR Preparation (Wood & Assoc) | 29,037.48 | 87,100.23 | 16,053.83 | 45,407.70 | 76,544.11 | 500.00 | 0.00 | 505.00 | 255,148.35 |
| 1590-A3 | Est/Preliminary Schedule (Cannon) | 3,706.19 | 2,602.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6,308.94 |
| 1590-A4 | Proposed Routes/Facilities (Cannon) | 5,050.07 | 520.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5,570.07 |
| 1590-A5 | Prop 50 Grant Application | 2,757.00 | 6,210.00 | 0.00 | 1,857.60 | 0.00 | 0.00 | 0.00 | 0.00 | 10,824.60 |
| 1590-A6 | Project Support (Cannon) | 0.00 | 11,797.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 11,797.44 |
| 1590-A7 | Groundwater Grant Assistance (SAIC) | 0.00 | 0.00 | 0.00 | 15,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 15,000.00 |
| 1590-B1 | Shipsey & Seitz | 0.00 | 23,095.55 | 17,564.25 | 2,201.50 | 18,224.00 | 16,601.58 | 18,664.80 | 19,412.80 | 115,764.48 |
| 1590-B2 | McDonough, Holland & Allen | 0.00 | 34,177.28 | 15,871.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 50,048.93 |
| 1590-B3 | Richard, Watson & Garshon | 0.00 | 9,472.38 | 27,954.81 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 37,427.19 |
| 1590-C1 | Appraisals (Tarvin & Reeder Gilman) | 0.00 | 0.00 | 16,170.00 | 10,000.00 | 0.00 | 8,000.00 | 3,600.00 | 0.00 | 37,770.00 |
| 1590-C2 | Property Negotiations (Hamner Jewell) | 0.00 | 0.00 | 0.00 | 0.00 | 15,250.00 | 14,748.75 | 36,481.90 | 9,358.67 | 75,839.32 |
| 1590-C3 | Property Acquisitions | 0.00 | 0.00 | 0.00 | 0.00 | 673.00 | 2,772.00 | 600.00 | 2,800.00 | 6,845.00 |
| 1590-D1 | Reed Group and Wallace Group | 0.00 | 2,809.85 | 0.00 | 0.00 | 7,585.45 | 4,476.25 | 0.00 | 0.00 | 14,871.55 |
| 1590-D2 | Lobbying | 0.00 | 0.00 | 0.00 | 38,801.11 | 38,950.00 | 54,000.00 | 9,000.00 | 0.00 | 140,751.11 |
| 1590-E1 | Preliminary Engineering Design (Boyle) | 0.00 | 6,470.33 | 223,286.67 | 103,460.19 | 2,194.43 | 0.00 | 0.00 | 0.00 | 335,411.62 |
| 1590-E2 | Water Modeling by Carollo (City of SM) | 0.00 | 0.00 | 24,942.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 24,942.00 |
| 1590-E3 | Alternative Water Supplies (Boyle) | 0.00 | 0.00 | 164,230.48 | 70,772.01 | 0.00 | 0.00 | 0.00 | 0.00 | 235,002.49 |
| 1590-E4 | Project Information (Boyle) | 0.00 | 0.00 | 0.00 | 6,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6,000.00 |
| 1590-E5 | Project Design (AECOM) | 0.00 | 0.00 | 0.00 | 0.00 | 752,319.66 | 228,952.01 | 172,785.69 | 61,413.39 | 1,215,470.75 |
| 1590-E6 | Pressure Testing | 0.00 | 0.00 | 0.00 | 0.00 | 8,682.92 | 0.00 | 0.00 | 0.00 | 8,682.92 |
| 1590-E7 | Peer Review | 0.00 | 0.00 | 0.00 | 0.00 | 7,571.05 | 37,349.25 | 12,134.80 | 0.00 | 57,055.10 |
| 1590-E8 | Pot Holing | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 29,053.05 | 0.00 | 0.00 | 29,053.05 |
| 1590-F1 | Lab Testing (FGL Environmental) | 0.00 | 0.00 | 5,047.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5,047.00 |
| 1590-F2 | Copy/Print | 0.00 | 0.00 | 740.24 | 1,022.01 | 0.00 | 0.00 | 52.07 | 0.00 | 1,814.32 |
| 1590-G1 | Permits | 0.00 | 0.00 | 0.00 | 0.00 | 130.00 | 0.00 | 0.00 | 0.00 | 130.00 |
| 1590-H1 | Assessment District | 0.00 | 0.00 | 0.00 | 0.00 | 83,030.71 | 21,227.92 | 56,931.64 | 83,155.20 | 244,345.47 |
| 1590-H2 | SLO County Reimb Agreement-JPA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 36,603.80 | 6,799.89 | 11,476.99 | 54,880.68 |
| 1590-H3 | Purveyor Partner Reimbursements to NCSD | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | (10,492.04) | 0.00 | 0.00 | (10,492.04) |
| 1590-H4 | A/D Financial Advisor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8,835.63 | 0.00 | 0.00 | 8,835.63 |
| 1590-H5 | A/D Outreach/Education | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 74,571.75 | 106,085.42 | 0.00 | 180,657.17 |
| 1590-I1 | Construction Management (MNS) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 360.00 | 360.00 |
| 1590-I2 | Arborist (A&T Arborist) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2,830.00 | 0.00 | 0.00 | 2,830.00 |
| 1590-Z1 | Wages-Capitalized | 0.00 | 29,076.92 | 35,884.51 | 28,197.08 | 31,926.57 | 50,005.29 | 46,698.55 | 27,068.54 | 248,857.46 |
| 1590-Z2 | Payroll Taxes-Capitalized | 0.00 | 587.22 | 587.42 | 455.96 | 504.53 | 2,058.44 | 1,918.13 | 544.36 | 6,656.06 |
| 1590-Z3 | Retirement-Capitalized | 0.00 | 8,418.08 | 10,344.53 | 8,110.84 | 8,690.47 | 9,443.17 | 6,729.62 | 6,720.39 | 58,457.10 |
| 1590-Z4 | Medical-Capitalized | 0.00 | 2,861.36 | 3,367.02 | 2,564.88 | 2,757.36 | 3,390.94 | 3,352.92 | 1,897.28 | 20,191.76 |
| 1590-Z5 | Dental/Vision-Capitalized | 0.00 | 0.00 | 247.90 | 328.23 | 348.15 | 459.82 | 239.83 | 216.28 | 1,840.01 |
| 1590-Z6 | Workers Compensation-Capitalized | 0.00 | 260.35 | 341.83 | 225.21 | 259.81 | 271.21 | 277.61 | 109.29 | 1,745.31 |
| | | 103,938.03 | 225,459.74 | 562,634.14 | 334,404.32 | 1,055,642.22 | 522,743.28 | 449,182.79 | 331,123.61 | 3,585,128.13 |

**NIPOMO COMMUNITY SERVICES DISTRICT
CERTIFICATES OF PARTICIPATION
DEBT SERVICE SCHEDULE**

| | PRINCIPAL | INTEREST | TOTAL DEBT SERVICE | PRINCIPAL BALANCE |
|------------------|------------|------------|-----------------------|----------------------|
| | | | | 4,000,000.00 |
| FY June 30, 2004 | 0.00 | 136,384.79 | 136,384.79 | 4,000,000.00 |
| FY June 30, 2005 | 75,000.00 | 169,950.00 | 244,950.00 | 3,925,000.00 |
| FY June 30, 2006 | 80,000.00 | 167,625.00 | 247,625.00 | 3,845,000.00 |
| FY June 30, 2007 | 80,000.00 | 165,225.00 | 245,225.00 | 3,765,000.00 |
| FY June 30, 2008 | 85,000.00 | 163,132.50 | 248,132.50 | 3,680,000.00 |
| FY June 30, 2009 | 85,000.00 | 161,198.75 | 246,198.75 | 3,595,000.00 |
| FY June 30, 2010 | 85,000.00 | 158,988.75 | 243,988.75 | 3,510,000.00 |
| FY June 30, 2011 | 90,000.00 | 156,425.00 | 246,425.00 | 3,420,000.00 |
| FY June 30, 2012 | 90,000.00 | 153,545.00 | 243,545.00 | 3,330,000.00 |
| FY June 30, 2013 | 95,000.00 | 150,397.50 | 245,397.50 | 3,235,000.00 |
| FY June 30, 2014 | 100,000.00 | 146,885.00 | 246,885.00 | 3,135,000.00 |
| FY June 30, 2015 | 100,000.00 | 143,110.00 | 243,110.00 | 3,035,000.00 |
| FY June 30, 2016 | 105,000.00 | 139,137.50 | 244,137.50 | 2,930,000.00 |

T:\DOC\FINANCE\SUPP WATERCOST SUMMARY.XLS



110 EAST COOK STREET, ROOM #3 • SANTA MARIA, CA 93454-5190 • 805-925-0951 • FAX 805-925-2243 • www.ci.santa-maria.ca.us

February 24, 2012

Michael LeBrun, General Manager
NIPOMO COMMUNITY SERVICES DISTRICT
148 South Wilson Street
Nipomo, CA 93444


RE: Formation of NCSD Assessment District

Dear Mr. LeBrun:

At its regular meeting on Tuesday, February, 21, 2012, the City Council of the City of Santa Maria adopted Resolution No. 2012-17 granting the City of Santa Maria's consent to form an assessment district by the Nipomo Community Services District. A certified copy of the above-mentioned Resolution is enclosed for your records.

Should you have any questions regarding the Council's action, please do not hesitate to contact this office or the Utilities Department.

Sincerely,



Rhonda M. Garietz, CMC
Acting Chief Deputy City Clerk

Enclosure: Resolution

pc: Utilities Department

RECEIVED
FEB 29 2012
NIPOMO COMMUNITY
SERVICES DISTRICT

RESOLUTION NO. 2012- 17

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTA MARIA GRANTING CONSENT TO THE FORMATION OF AN ASSESSMENT DISTRICT BY THE NIPOMO COMMUNITY SERVICES DISTRICT

WHEREAS, the Board of Directors of the Nipomo Community Services District ("NCSD") proposes to adopt a Resolution of Intention (the "Resolution of Intention") to initiate proceedings to consider the formation of a special assessment district designated as Nipomo Community Services District Assessment District No. 2012-1 (Supplemental Water Project) (the "Assessment District"), under the provisions of the Municipal Improvement Act of 1913, being Division 12 (commencing with Section 10000) of the Streets and Highways Code of the State of California, (the "Improvement Act"), Article XIID of the Constitution of the State of California ("Article XIID") and the Proposition 218 Omnibus Implementation Act (Government Code Sections, 53750, and following) (together with the Improvement Act and Article XIID, the "Assessment Law"), to finance the acquisition or construction of certain water improvements to be located in the City of Santa Maria (the "City"); and

WHEREAS, Section 5118 of the Improvement Act of 1911, being Division 7 (commencing with Section 5000) of the Streets and Highways Code, and Section 10303 of the Improvement Act provide that, when another public agency initiates proceedings under the Improvement Act to consider the formation of an assessment district (the "Assessment District") to include improvements within territory of the City, the City Council of the City must consent to the formation of such assessment district and approve the proposed resolution of intention of such legislative body to form such assessment district and the improvements proposed to be constructed (the "Resolution of Intention"), prior to the adoption of such Resolution of Intention by such legislative body; and

WHEREAS, the Board of Directors of the NCSD has requested that the City Council of the City consent to the formation of the Assessment District and approve the Resolution of Intention, attached hereto, and the improvements described in the Exhibit "A" to the Resolution of Intention (the "Improvements"); and,

NOW, THEREFORE, IT IS HEREBY RESOLVED by the City Council of the City of Santa Maria, California, as follows:

Section 1. The above recitals are all true and correct.

Section 2. Pursuant to the Improvement Act, the City Council of the City of Santa Maria hereby consents to NCSD's formation of the Assessment District and approve of its Resolution of Intention and the improvements.

Section 3. The foregoing approval of the City Council of the City of Santa Maria is conditional upon (a) compliance by the NCSD with the provisions of

the Assessment Law in undertaking the proceedings to consider the formation of the Assessment District and in levying any assessment upon the properties within the Assessment District; and (b) the agreement by NCSD as specified in Section 6 of the Resolution of Intention that NCSD shall hold harmless and indemnify the City, it's officers, agents and employees, and the members of the City Council from any and all causes of action, claims, losses or damages, and expenses, including attorneys fees and litigation costs resulting or arising, directly or indirectly, from the action of the City in reviewing and granting its consent to the formation of the Assessment District and approving the Resolution of Intention and the Improvements.

Section 4. The Acting Chief Deputy City Clerk of the City is hereby directed to certify and transmit a copy of this Resolution to the Secretary of NCSD.

Section 5. This resolution shall take effect immediately upon its adoption.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Santa Maria held February 21, 2012.

/S/ L. J. LAVAGNINO

Mayor

ATTEST:

/s/ RHONDA M. GARIETZ, CMC

CHIEF DEPUTY CITY
CLERK

APPROVED AS TO
FORM:


BY:



CITY ATTORNEY

CONTENTS:

BY:



DEPARTMENT
HEAD

BY:



CITY MANAGER

EXHIBIT "A"

RESOLUTION NO. _____

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE NIPOMO COMMUNITY SERVICES DISTRICT DECLARING ITS INTENTION TO ORDER IMPROVEMENTS FOR PROPOSED ASSESSMENT DISTRICT NO. 2012-1 (SUPPLEMENTAL WATER PROJECT) PURSUANT TO THE MUNICIPAL IMPROVEMENT ACT OF 1913 AND IN ACCORDANCE WITH ARTICLE XIID OF THE CALIFORNIA CONSTITUTION, AND TAKING CERTAIN OTHER ACTIONS IN CONNECTION THEREWITH

WHEREAS, the Board of Directors of the Nipomo Community Services District ("District"), desires to initiate proceedings for the formation of an assessment district (the "Assessment District"), pursuant to the provisions of the Municipal Improvement Act of 1913 (the "Improvement Act"), being Division 12 (commencing with Section 10000) of the Streets and Highways Code of the State of California, Article XIID of the Constitution of the State of California ("Article XIID"), the Special Assessment Investigation, Limitation and Majority Protest Act of 1931, being Division 4 of the Streets and Highways Code of the State of California (commencing with Section 2800), and the Proposition 218 Omnibus Implementation Act (commencing with Section 53750) of the Government Code of the State of California, and for the issuance of bonds in the proceedings under the Improvement Bond Act of 1915, being Division 10 of the Streets and Highways Code of the State of California (commencing with Section 8500) (the "Bond Act"), for the purpose of financing certain public capital water improvements (the "Improvements"), of benefit to the properties within the proposed Assessment District; and

WHEREAS, the territory proposed for inclusion in the proposed Assessment District includes parcels of land located within the District as well as certain other parcels of land located in whole or in part within the County of San Luis Obispo ("San Luis Obispo County") that, in the opinion of the Board of Directors, will be specially benefited by the Improvements; and

WHEREAS, a portion of the Improvements are proposed to be located within San Luis Obispo County and the City of Santa Maria (the "City of Santa Maria"); and

WHEREAS, pursuant to Section 10103 of the Improvement Act and Sections 5117 and 5118 of the Improvement Act of 1911, Division 7 (commencing with Section 5000) of the Streets and Highways Code, before the Board of Directors may adopt a resolution of intention initiating such proceedings, it must submit the proposed Resolution of Intention to and obtain the consent of (i) the Board of Supervisors of the San Luis Obispo County (the "San Luis Obispo County Board"), (ii) the City Council of the City of Santa Maria (the "Santa Maria City Council") to the formation of the proposed Assessment District and the approval of the Resolution of Intention and the proposed Improvements; and

WHEREAS, the Board of Directors has received consent from San Luis Obispo County Board as to the inclusion of territory outside the boundaries of the District, and has received consent

from the San Luis Obispo County Board and Santa Maria City Council for the proposed Improvements; and

WHEREAS, the public interest and convenience require the construction and acquisition of the Improvements.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Nipomo Community Services District:

Section 1. The above recitals are true and correct.

Section 2. The proposed improvements (the "Improvements") generally consist of the acquisition and financing of certain public capital water improvements as more particularly described on Exhibit A attached hereto.

Section 3. In the opinion of the Board of Directors, the Board of Directors hereby finds and determines that the public interest and convenience require that the proposed Improvements is of such a character that it directly and peculiarly affects property in one or more jurisdictions, and that the purposes sought to be accomplished by the proposed Improvements can best be accomplished by a single, comprehensive scheme of work, thereby requiring inclusion of Improvements and property that lie outside the territorial limits of the District.

Section 4. In the opinion of the Board of Directors, the Board of Directors hereby finds and determines that the public interest and convenience require that property within the boundaries of the Assessment District lying outside the jurisdiction of the District will be benefitted by the proposed Improvements, and that the consents of the legislative bodies having jurisdiction over any such property proposed to be assessed have been obtained to (i) the formation of the Assessment District and (ii) the assumption by the District of jurisdiction thereover. The consents of the legislative bodies which contain the proposed Improvements that lie outside of the boundaries of the District have been obtained to (y) the formation of the Assessment District and the proposed Improvements to be done within such territory, and (z) the assumption by the District of jurisdiction thereover.

Section 5. The District shall hold harmless and indemnify San Luis Obispo County, its officers and employees, from any and all causes of action, claims, losses or damages which may arise, directly or indirectly, from the action of the San Luis Obispo County Board in reviewing and granting its consent to the formation of the Assessment District and approving this Resolution of Intention form and the Improvements.

Section 6. The District shall hold harmless and indemnify the City of Santa Maria, its officers and employees, from any and all causes of action, claims, losses or damages which may arise, directly or indirectly, from the action of the Santa Maria City Council in reviewing and granting its consent to the formation of the Assessment District and approving this Resolution of Intention form and the Improvements.

Section 7. The Board of Directors hereby (i) finds that the public interest, necessity and convenience require the acquisition, improvement, and financing of the Improvements, and (ii) declares its intention to order the Improvements and form an assessment district to be known as the “Nipomo Community Services District Assessment District No. 2012-1 (Supplemental Water Project)” pursuant to the Improvement Act. Unless otherwise specifically provided, all Improvements and work to be funded by the Assessment District shall be made and done pursuant to the Improvement Act.

Section 8. The Board of Directors hereby declares that the territory within the boundaries hereinafter specified and described as the Assessment District is the land benefitted by the Improvements to be made and to be assessed to pay the costs and expenses thereof; that the expense of the Improvements is hereby made chargeable upon the Assessment District; and that the exterior boundaries of the Assessment District are hereby specified and described to be shown on that certain map now on file in the office of the Secretary of the District entitled “Nipomo Community Services District Assessment District No. 2012-1 (Supplemental Water Project) Assessment Diagram/Boundary Map,” which map indicates by a boundary line the extent of the territory included in the proposed Assessment District. On the original and a copy of the map of the Assessment District on file in the Secretary’s office, the Secretary shall endorse the certificate evidencing the date and adoption of this Resolution of Intention. The Secretary shall file the original of such map in his or her office and, within fifteen (15) days after adoption of the resolution fixing the time and place of hearing on the formation and extent of the Assessment District, the Secretary shall file a copy of such map so endorsed in the records of the County Recorder, County of San Luis Obispo, State of California.

Section 9. The Board of Directors hereby appoints and designates the District Engineer to perform the duties and functions of the Superintendent of Streets in connection with such proceedings.

Section 10. The proposed Improvements are hereby referred to the Assessment Engineer to make and file with the Secretary of the District a report in writing in accordance with Article XIID, Section 4 of the California Constitution and Section 10204 of the Improvement Act. The District intends to comply with the requirements of Part 7.5 of the Special Assessment Investigation, Limitation and Majority Protest Act of 1931, and hereby directs the Assessment Engineer to include in the report all of the information required in Section 2961 of the California Streets and Highways Code.

Section 11. The Board of Directors hereby determines that it is in the public interest and more economical to do work on private property to eliminate any disparity in level or size between the proposed Improvements and private property than to adjust the work on public property to eliminate such disparity.

Section 12. The Board of Directors hereby declares its intention to enter into an agreement or agreements with the City of Santa Maria and any other public agency, regulated public utility or mutual water company pursuant to Chapter 2 of the 1913 Act (commencing with Section 10100) if any of the Improvements are to be owned, managed or controlled by any other public agency, regulated public utility or mutual water company.

Section 13. Pursuant to Section 4 of Article XIII D of the Constitution of the State of California, parcels within the assessment district that are owned or used by any agency, the State of California or the United States shall not be exempt from assessment, unless the District can demonstrate by clear and convincing evidence that such publicly owned parcels in fact receive no special benefit.

Section 14. Notice is hereby given that bonds to represent unpaid assessments, and which bear interest at a fixed or variable interest rate of not to exceed twelve percent (12%) per annum, or such higher maximum interest rate as may be provided in the resolution of issuance, will be issued hereunder in the manner provided in the Bond Act, and the last installment of such bonds shall mature in not to exceed 39 years from the second of September next succeeding twelve (12) months from their date. The alternate procedure for collecting assessments and advance retirement of bonds as set forth in Part 11.1 of the Bond Act shall apply herein. Pursuant to Section 8650.1 of the Bond Act, the Board of Directors may determine that the principal amount of bonds maturing or becoming subject to mandatory prior redemption each year shall be other than the amount equal to an even annual proportion of the aggregate principal of the bonds.

Section 15. The Board of Directors hereby further declares that it is its intention to covenant that, upon default of any assessment payment due (except under certain circumstances to be specified in the fiscal agent agreement or trust indenture for the bonds) it will cause foreclosure proceedings to be brought within 150 days of such default, as permitted by Section 8830(b) of the Bond Act.

Section 16. The Board of Directors hereby further declares that it is its intention to create a special reserve fund as permitted by Sections 8880-8886 of the Bond Act.

Section 17. The Board of Directors hereby finds and determines that if the assessment proposed herein results in a surplus in the improvement fund to be provided for in the proceedings hereafter taken pursuant to this Resolution of Intention, after the improvements are acquired or constructed, the surplus shall be used or allocated in accordance with the provisions of Sections 10427 to 10427.2, inclusive, of the Improvement Act.

Section 18. The Board of Directors hereby designates the General Manager and Secretary to the Board of Directors (General Manager or Secretary depending on the context), or the designated agent of the General Manager, to collect and receive the assessments.

Section 19. Pursuant to Streets and Highways Code Section 8769, the Board of Directors hereby determines and declares that the District will not obligate itself to advance available funds from the District treasury to cure any deficiency which may occur in the bond redemption fund; provided, however, this determination shall not prevent the District from, in its sole and unbridled discretion, advancing funds for such purpose as otherwise provided in the Bond Act.

Section 20. The Board of Directors hereby further declares that the bonds issued for Assessment District No. 2012-1 shall be refundable in accordance with the provisions of the

“Refunding Act of 1984 for 1915 Improvement Act Bonds.” The specific conditions under which said bonds may be refunded include the condition that there be a reduction in the interest cost to maturity by reason of the refunding of such bonds and the condition that the refunding bonds shall bear interest at a maximum rate, and shall have a maximum number of years to maturity, not in excess of the maximum rate and years to maturity, respectively, then permitted by law. Any adjustment to assessments resulting from any such refunding will be done on a pro rata basis.

Section 21. Whenever, in the Improvement Act or in the Bond Act a notice, resolution, order or other matter relative to said proceedings for the work, acquisitions and improvements in said assessment district is required to be published, the Secretary is hereby ordered to publish such notice, resolution or other matter in the Santa Maria Times and/or the Tribune, which is hereby selected by the Board of Directors for that purpose.

Section 22. The Secretary shall transmit a certified copy of this Resolution of Intention and Boundary Map to the County Clerk of San Luis Obispo and the City Clerk of the City of Santa Maria.

Section 23. This resolution shall take effect immediately.

Upon a motion by Director _____, seconded by Director _____, on the following roll call vote, to wit:

AYES:

NOES:

ABSTAIN:

ABSENT:

the foregoing resolution is hereby passed and adopted on this ____ day of _____, 2012.

JAMES HARRISON
President of the Board

ATTEST:

APPROVED AS TO FORM:

MICHAEL S. LEBRUN

Secretary to the Board

JON S. SEITZ

District Legal Counsel

EXHIBIT A

The improvements proposed to be funded through Assessment District No. 2012-1 are briefly described as follows:

The design and construction of certain public capital water facilities, together with appurtenances and appurtenant work related thereto, including construction of a waterline to connect the City of Santa Maria water distribution system with the Nipomo Community Services District water distribution system, involving an underground pipeline with a nominal capacity of 3000 acre-feet to be installed under the Santa Maria river using horizontal directional drilling technique, the construction of a storage tank and booster station to deliver the water into the District's system, and all related permits, fees, bonds, construction management, and construction engineering (e.g. soils, survey, archeological).

PROPOSED BOUNDARIES

of

Nipomo Mesa Supplemental Water Project Assessment District No. 1

Nipomo Community Services District
State of California



1 inch = 3,800 feet

Clerk's Certificate of Filing

Filed in the Office of the Clerk of the Board of Supervisors of the County of San Luis Obispo, this _____ day of _____, 20____

Clerk of the Board of Supervisors

Clerk's Certificate of Board Approval

I hereby certify that the within map showing the proposed boundaries of the Nipomo Mesa Supplemental Water Project Assessment District No. 1, in the County of San Luis Obispo, State of California was approved by the Board of Supervisors of the County of San Luis Obispo, at a regular meeting thereof, held on the _____ day of _____, 20____ by its Resolution No. _____

Clerk of the Board of Supervisors

County Recorder's Certificate

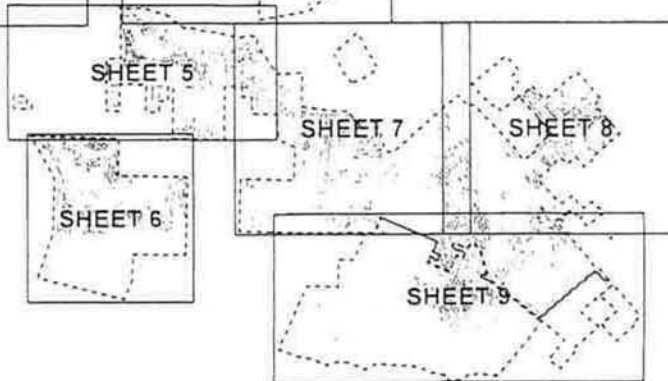
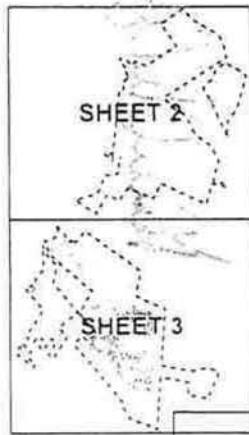
Filed this _____ day of _____, 20____ at the hour of _____ o'clock _____ m in Book _____ of Maps of Assessment and Community Facilities Districts at page _____ in the office of the County Recorder in the County of San Luis Obispo, State of California

County Recorder of the County of San Luis Obispo

County Surveyor's Certificate

Recorded in the office of the County Surveyor of the County of San Luis Obispo this _____ day of _____, 20____

County Surveyor
County of San Luis Obispo
State of California



Copy of document found at www.NoNewWpTax.com

STATE OF CALIFORNIA)
COUNTY OF SANTA BARBARA) ss.
CITY OF SANTA MARIA)

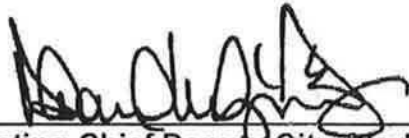
I, RHONDA M. GARIETZ, CMC, Acting Chief Deputy City Clerk of the City of Santa Maria and ex officio Clerk of the City Council DO HEREBY CERTIFY that the foregoing is a full, true and correct copy of Resolution No. 2012-17 which was duly and regularly introduced and adopted by said City Council at a regular meeting held February 21, 2012, and carried on the following vote:

AYES: Councilmembers Boysen, Cordero, Orach, and Patino,
 and Mayor Lavagnino.

NOES: None.

ABSENT: None.

ABSTAIN: None.



Acting Chief Deputy City Clerk
of the City of Santa Maria and
ex officio Clerk of the City Council

**SAN LUIS OBISPO COUNTY
INTEGRATED WASTE MANAGEMENT AUTHORITY (IWMA)
BOARD MEETING**

**March 14, 2012
1:30 p.m.**

RECEIVED

MAR - 7 2012

NIPOMO COMMUNITY
SERVICES DISTRICT

**AGENDA
San Luis Obispo Board of Supervisor's Chambers
County Government Center
San Luis Obispo, CA 93408**

-
1. **Call to Order and Roll Call.**
 2. **Welcome New Board Member and Recognize Past Board Member**

3. **Public Comments.**

Note: Any member of the public may address the Board for a period not to exceed three minutes. Any item not on the agenda, within the jurisdiction of the Board, may be presented. The Board will listen to all communication, however, in compliance with the Brown Act, no action can be taken at this time.

Americans With Disabilities Act Compliance. In compliance with the Americans with Disabilities Act (ADA), the IWMA is committed to including the disabled in all of its services, programs, and activities. If you need special assistance to participate in this meeting, please contact the IWMA clerk at least 72 hours prior to the meeting to enable the IWMA to make reasonable arrangements to insure accessibility to the meeting.

4. **Manager's Report.** Oral report by Bill Worrell.
Japan Disaster Waste in the Pacific Ocean

CONSENT CALENDAR

The following items listed below are scheduled for consideration as a group. After public comment, any member of the Board or the Manager may request an item be withdrawn from the Consent Calendar to allow discussion.

5. **Draft Minutes of the January 11, 2012 IWMA Board Meeting (Action Item - Voice Vote)**
6. **Draft Minutes of the February 22, 2012 Executive Committee Meeting (Receive and File)**

REGULAR CALENDAR

7. **Reusable Bag Outreach Program (Action Item - Voice Vote)** Consider approving a reusable bag outreach program.

Printed on 100% Post Consumer Recycled Paper ♻️ Two Sided for Source Reduction

8. **Grant Applications (Action Item - Voice Vote)** Consider approving grant applications to the Department of Resources Recycling and Recovery (CalRecycle).
9. **Cold Canyon Landfill Expansion (Action Item - Voice Vote)** Consider sending a letter regarding anaerobic digestion at the Cold Canyon Landfill.
10. **Composting Regulation Revisions (Action Item - Voice Vote)** Consider sending a letter supporting revisions to composting regulations.
11. **Paint Care Program (Action Item - Voice Vote)** Authorize the Manager to enter into an agreement with Paint Care to provide paint collection services.
12. **Battery Demonstration Project(Action Item - Voice Vote)** Authorize the Manager to enter into a contract with the Battery Demonstration Project for battery recycling services.
13. **Proposed FY 12/13 Program Goals and Status of FY 11/12 Goals (Review and Comment)** Review the proposed program objectives for FY 12/13 and review the current status of FY 11/12 objectives.
14. **Member Comments and Future Agenda Items** Discussion by Members regarding future agenda items.
15. **Closed Session.** It is the intention of the Executive Committee to meet in closed session for the following:
 - a. Conference with Legal Counsel - Existing Litigation (Government Code Section 54956.9(a)) Save the Plastic Bag Coalition v. San Luis Obispo County IWMA CV120078
 - b. Manager's Annual Review (Government Code Section 54957)
16. **Report on Closed Session**
17. **Adjournment** The next meeting is scheduled for **May 9, 2012** at 1:30 p.m. in San Luis Obispo Board of Supervisor's Chambers, County Government Center, San Luis Obispo, CA 93408.



SAN LUIS OBISPO LAFCO

Local Agency Formation Commission

Meeting Agenda

March 15, 2012 at 9:00 a.m.

If you wish to speak at the meeting, please complete a "Request to Speak" form and give it to a LAFCO staff member

Board of Supervisors Chambers
County Government Center
1055 Monterey Street
San Luis Obispo, California

Phone: (805) 781-5795
Fax: (805) 788-2072
www.slolafco.com

Commissioners: Chairman Richard Roberts, Vice Chairman Bruce Gibson, Muril Clift, Ed Eby, James R. Patterson, Duane Picanco, Kris Vardas and Alternate Commissioners Tom Murray, Roberta Fonzi, Frank Mecham, and Marshall Ochylski

Pledge of Allegiance

Call to Order/Roll Call:

Approval of the Minutes: January 19, 2012

Non-Agenda Public Comment Period:

This is the period where persons may speak on items that are not on the regular agenda. All persons wishing to speak on agenda items or during this non-agenda public comment portion of the meeting are asked to fill out a "request to speak form" and provide it to the Commission Clerk prior to the beginning of that item. Each speaker will be limited to a three-minute presentation. During public hearings, applicants or their representatives will be given the opportunity to speak first after the staff report is given and questions of the Commission have been addressed.

Consent Agenda Items:

None

Regular Matters:

A-1 LAFCO File 1-R-11: Los Robles Del Mar Annexation #15 to the City of Pismo Beach - Continued from January 19, 2012.

Commissioner Comments:

Legal Counsel Comments:

Executive Officer Comments:

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MAR - 7 2012

NIPOMO COMMUNITY
SERVICES DISTRICT

Adjournment

Information Only:

Submitted Proposals on Hold:

Annexation #1 to San Miguel CSD (San Miguel Ranch)
Annexation #23 to the Templeton CSD (Salinas River Estates)
Annexation #24 to the Nipomo Community Services District (Nipomo Hills)
Annexation #41 to the City of San Luis Obispo (Dalidio)
Annexation #71 to the City of San Luis Obispo (Bishop Knoll)
Annexation #72 to the City of San Luis Obispo (Harmony Way)
Annexation #73 to the City of San Luis Obispo (Froom Ranch)

Sphere of Influence/Municipal Service Review Updates:

City of Paso Robles SOI/MSR
City of Arroyo Grande SOI/MSR
City of Grover Beach SOI/MSR
Oceano Community Services District SOI/MSR
South San Luis Obispo County Sanitation District SOI/MSR



American Water Works Association

The Authoritative Resource on Safe Water®

6666 West Quincy Avenue
Denver, CO 80235-3098
T 303.794.7711
www.awwa.org

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NIPOMO COMMUNITY SERVICES DISTRICT

Advocacy
Communications
Conferences
Education and Training
Science and Technology
Sections

February 23, 2012

Mr. Michael Lebrun
Nipomo Community Svcs Dist
148 S Wilson St
Nipomo CA 93444-5320

Dear Mr. Michael Lebrun,

Please find enclosed a copy of a new report by the American Water Works Association titled "Buried No Longer: Confronting America's Water Infrastructure Challenge." Created with assistance from AWWA's Water Industry Technical Action Fund (WITAF), this report constitutes the most thorough analysis ever of the nation's drinking water infrastructure renewal and expansion costs. We are providing it to you as a benefit of your AWWA utility membership.

By framing the national water infrastructure challenge, the report can help your utility in at least three ways:

- It demonstrates that water utilities must set rates that reflect the cost of both providing safe water and maintaining water systems for future generations.
- It provides utilities with an excellent opportunity to tell their own infrastructure stories against the backdrop of a broader national challenge.
- It shows the need for innovative concepts like the Water Infrastructure Finance and Innovation Authority (WIFIA), which would make low-interest loans available for large infrastructure projects without adding to the long-term national debt.

We urge you to refer to this report as you engage local and national decision-makers in conversations about necessary water infrastructure investment. We hope you will also use "Buried No Longer" to speak to customers about the value of water service and the need to maintain and grow our systems for future generations.

You will find additional charts from the report and other relevant information at www.awwa.org/infrastructure.

Together as an association, we can be a powerful voice for water infrastructure renewal. Please accept this invitation to help raise "above ground" the conversation about buried water infrastructure.

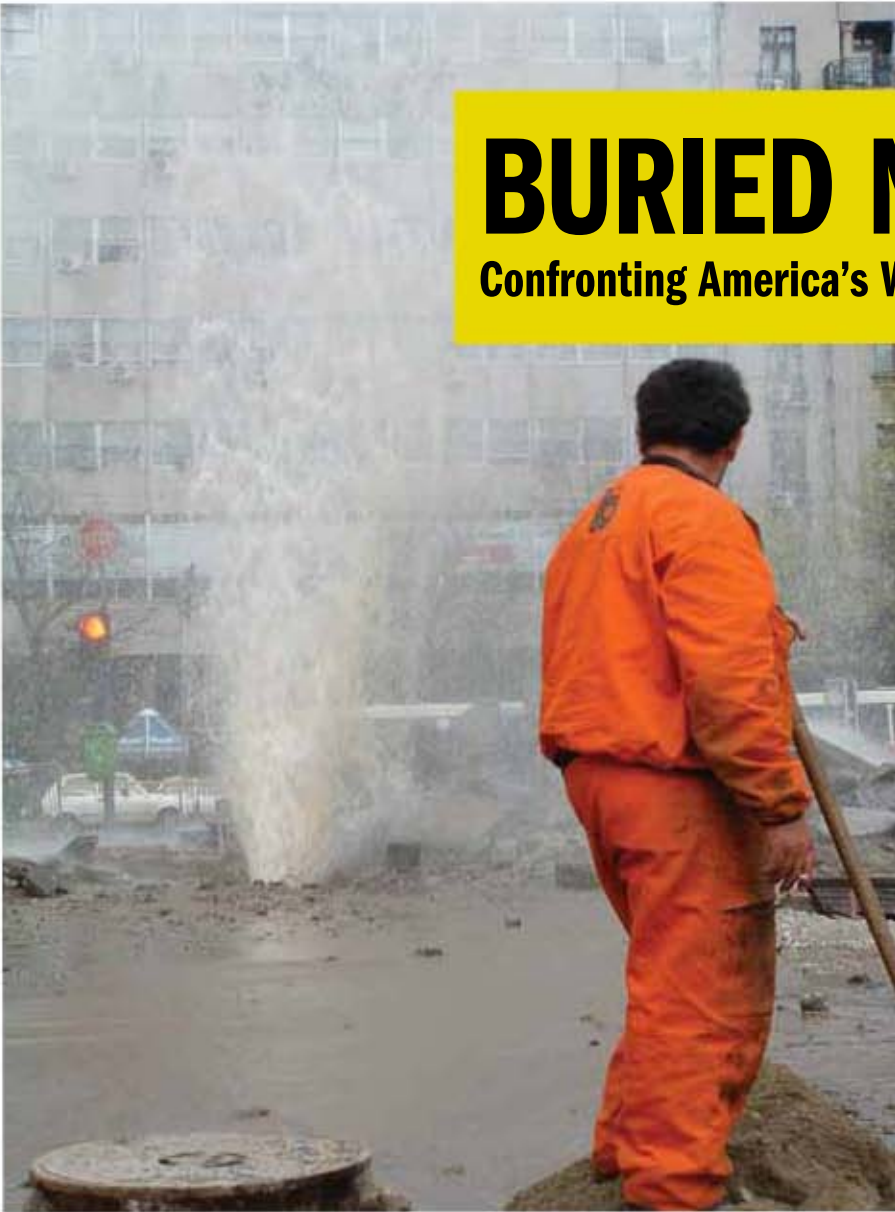
Sincerely,

David Rager, Chair
AWWA Water Utility Council

Aurel Arndt
Chair, Project Steering Committee

BURIED NO LONGER:

Confronting America's Water Infrastructure Challenge



**American Water Works
Association**

The Authoritative Resource on Safe Water®



Acknowledgments

This report was developed by the American Water Works Association under the direction of its Water Utility Council, through Stratus Consulting in Boulder, Colorado. Significant portions of the analyses described in this report were initiated or developed by John Cromwell, who unfortunately passed away before this project was completed. John was a true visionary, a wonderful friend and colleague, and an ardent believer in promoting sound management of water system infrastructure. We hope this report does proper service to John's intent, integrity and passion. Special recognition is also due to Bob Raucher, who completed the work with great attention to detail, patience and outstanding professionalism.

Haydn Reynolds is the developer of the Nessie Model and managed all the empirical investigations in this report. His continued engagement in the development of this report has been exemplary, as has been his willingness to address the many questions involved in the transition of the final report preparation from John Cromwell to Bob Raucher and others at Stratus Consulting. Finally, but not least, a number of AWWA utility members did significant work on this project, including Dave Rager (who chairs the Water Utility Council), Mike Hooker (who was WUC chair when the report was initiated), Aurel Arndt (who chairs the advisory work group on this project), and Joe Bella, John Sullivan, Richard Talley, Robert Walters, and Dave Weihrauch, all of whom made significant contributions as members of the advisory work group.

Project Funding

Funding for this project was provided by the Water Industry Technical Action fund (WITAF). WITAF is funded through AWWA organizational member dues. It supports activities, information, and analysis to advance sound and effective drinking water legislation, regulation and policy.

Introduction. A new kind of challenge is emerging in the United States, one that for many years was largely buried in our national consciousness. Now it can be buried no longer. Much of our drinking water infrastructure, the more than one million miles of pipes beneath our streets, is nearing the end of its useful life and approaching the age at which it needs to be replaced. Moreover, our shifting population brings significant growth to some areas of the country, requiring larger pipe networks to provide water service.

As documented in this report, restoring existing water systems as they reach the end of their useful lives and expanding them to serve a growing population will cost at least \$1 trillion over the next 25 years, if we are to maintain current levels of water service. Delaying the investment can result in degrading water service, increasing water service disruptions, and increasing expenditures for emergency repairs. Ultimately we will have to face the need to “catch up” with past deferred investments, and the more we delay the harder the job will be when the day of reckoning comes.

In the years ahead, all of us who pay for water service will absorb the cost of this investment, primarily through higher water bills. The amounts will vary depending on community size and geographic region, but in some communities these infrastructure costs alone could triple the size of a typical family's water bills. Other communities will need to collect significant “impact” or development fees to meet the needs of a growing population. Numerous communities will need to invest for replacement **and** raise funds to accommodate growth at the same time. Investments that may be required to meet new standards for drinking water quality will add even more to the bill.

Although the challenge to our water infrastructure has been less visible than other infrastructure concerns, it's no less important. Our water treatment and delivery systems provide public health protection, fire protection, economic prosperity and the high quality of life we enjoy. Yet most Americans pay less than \$3.75 for every 1,000 gallons of safe water delivered to their taps.

This report demonstrates that as a nation, we need to bring the conversation about water infrastructure above ground. Deferring needed investments today will only result in greater expenses tomorrow and pass on a greater burden to our children and grandchildren. It's time to confront America's water infrastructure challenge.

The Era of Infrastructure Replacement. More than a decade ago the American Water Works Association (AWWA) announced that a new era was dawning: the replacement era, in which our nation would need to begin rebuilding the water and wastewater systems bequeathed to us by earlier generations. Our seminal report—*Dawn of the Replacement Era*—demonstrated that significant investments will be required in coming decades if we are to maintain the water and wastewater systems that are so essential to our way of life.



The *Dawn* report examined 20 water systems, using a relatively new technique to build what came to be called a “Nessie Curve” for each system. The Nessie Curve, so called because the graph follows an outline that someone likened to a silhouette of the Loch Ness Monster, revealed that each of the 20 water systems faced unprecedented needs to rebuild its underground water infrastructure—its pipe network. For each system, the future investment was an “echo” of the demographic history of the community, reflecting succeeding generations of pipe that were laid down as the community grew over many years. Most of those generations of pipe were shown to be coming to an end of their useful service lives in a relatively compressed period. Like the pipes themselves, the need for this massive investment was mostly buried and out of sight. But it threatens our future if we don’t elevate it and begin to take action now.

The present report was undertaken to extend the *Dawn* report beyond those 20 original cities and encompass the entire United States. The results are startling. They confirm what every water utility professional knows: we face the need for massive reinvestment in our water infrastructure over the coming decades. The pipe networks that were largely built and paid for by earlier generations—and passed down to us as an inheritance—last a long time, but they are not immortal. The nation’s drinking water infrastructure—especially the underground pipes that deliver safe water to America’s homes and businesses—is aging and in need of significant reinvestment. Like many of the roads, bridges, and other public assets on which the country relies, most of our buried drinking water infrastructure was built 50 or more years ago, in the post-World War II era of rapid demographic change and economic growth. In some older urban areas, many water mains have been in the ground for a century or longer.



Given its age, it comes as no surprise that a large proportion of US water infrastructure is approaching, or has already reached, the end of its useful life. The need to rebuild these pipe networks must come on top of other water investment needs, such as the need to replace water treatment plants and storage tanks, and investments needed to comply with standards for drinking water quality. They also come on top of wastewater and stormwater investment needs which—judging from the US Environmental Protection Agency’s (USEPA) most recent “gap analysis”—are likely to be as large as drinking water needs over the coming decades. Moreover, both water and wastewater infrastructure needs come on top of the other vital community infrastructures, such as streets, schools, etc.

Prudent planning for infrastructure renewal requires credible, analysis-based estimates of where, when, and how much pipe replacement or expansion for growth is required. This report summarizes a comprehensive and robust national-level analysis of the cost, timing, and location of the investments necessary to renew water mains over the coming decades. It also examines the additional pipe investments we can anticipate to meet projected population growth, regional population shifts, and service area growth through 2050.

This analysis is based on the insight that there will be “demographic echoes” in which waves of reinvestment are driven by a combination of the original patterns of pipe investment, the pipe materials used, and local operating environments. The report examines the reinvestment demands implied by these factors, along with population trends, in order to estimate needs for pipe replacement and concurrent investment demands to accommodate population growth.

Although this report does not substitute for a careful and detailed analysis at the utility level as a means of informing local decisions, it constitutes the most thorough and comprehensive analysis ever undertaken of the nation’s drinking water infrastructure renewal needs. The keys to our analysis include the following:

1. Understanding the original timing of water system development in the United States.
2. Understanding the various materials from which pipes were made, and where and when the pipes of each material were likely to have been installed in various sizes.
3. Understanding the life expectancy of the various types and sizes of pipe (“pipe cohorts”) in actual operating environments.
4. Understanding the replacement costs for each type and size of pipe.
5. Developing a probability distribution for the “wear-out” of each pipe cohort.



Methodology

For this report, we differentiated across four water system size categories*:

- Very small systems (serving fewer than 3,300 people, representing 84.5% of community water systems).
- Small systems (3,300 to 9,999 served, representing 8.5% of community water systems).
- Medium-size systems (10,000 to 49,999 served, representing over 5.5% of systems). And,
- Large systems (serving more than 50,000 people, representing 1.5% of community water systems).

** Note that the water system size categories used in this analysis are not identical to the size categories USEPA uses for regulatory purposes. Note also that although data were analyzed based on these four size categories, some of the graphs that accompany this report combine medium-size and small systems. This is done for simplicity in the visual presentation, when the particular dynamics being represented are closely similar for medium-size and small systems.*

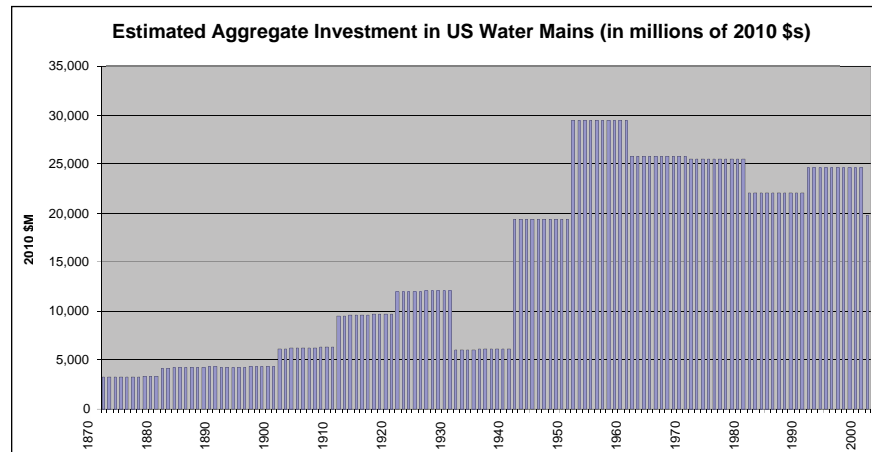
Next, we divided the country into four regions (Northeast, Midwest, South, and West), as shown in Figure 1. These regions are not equal in population, but they roughly share certain similarities, including their population dynamics and the

Figure 1: Regions Used in This Report



historical patterns of pipe installation driven by those dynamics. Data published by USEPA, the water industry, and the US Census Bureau were tapped to obtain a solid basis for regional pipe installation profiles by system size and pipe diameter. The US Census Bureau has produced a number of retrospective studies of the changes in urban and rural circumstances between 1900 and 2000 that proved especially useful in this analysis. The report also used the AWWA Water/Stats database, the USEPA Community Water Supply Survey, and data from the 2002 Public Works Infrastructure Survey (PWIS) as essential inputs in the analysis.

Figure 2: Historic Investment Profile for All US Water Systems, 1850-2000



In addition, we conducted a limited survey of professionals in the field concerning pipe replacement issues and other relevant “professional knowledge.” The national aggregate for the original investment in all types and sizes of pipes is shown in Figure 2, while Figure 3 shows the aggregate current replacement value of water pipes by pipe material and utility size, totaling over \$2.1 trillion.

Figure 3: Aggregate Replacement Value of Water Pipes by Pipe Material and Utility Size (millions 2010 \$s)

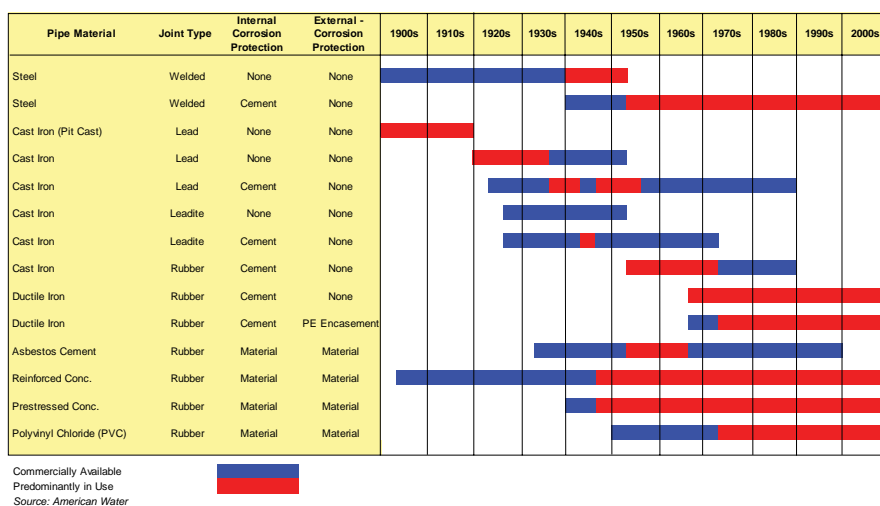
| Region | CI | CICL | DI | AC | PV | Steel | PCCP | TOTAL |
|--------------------------|---------|---------|---------|---------|---------|--------|--------|-----------|
| Northeast Large | 48,958 | 8,995 | 5,050 | 2,308 | 1,875 | 335 | 0 | 67,522 |
| Northeast Medium & Small | 66,357 | 61,755 | 28,777 | 26,007 | 16,084 | 5,533 | 6,899 | 211,411 |
| Northeast Very Small | 14,491 | 15,992 | 10,661 | 7,281 | 7,937 | 329 | 462 | 57,152 |
| Midwest Large | 37,413 | 9,151 | 3,077 | 2,504 | 1,098 | 784 | 512 | 54,539 |
| Midwest Medium & Small | 74,654 | 92,106 | 51,577 | 37,248 | 30,506 | 8,682 | 11,152 | 305,925 |
| Midwest Very Small | 37,597 | 28,943 | 25,464 | 12,428 | 19,720 | 601 | 828 | 125,581 |
| Southeast Large | 30,425 | 28,980 | 29,569 | 21,229 | 14,936 | 9,337 | 7,227 | 141,703 |
| South Medium & Small | 54,772 | 98,608 | 140,079 | 103,659 | 102,804 | 21,394 | 17,160 | 538,475 |
| South Very Small | 43,183 | 24,998 | 49,791 | 34,529 | 47,823 | 1,461 | 1,244 | 203,028 |
| West Large | 15,448 | 16,055 | 28,949 | 14,774 | 14,723 | 7,443 | 6,215 | 103,607 |
| West Medium & Small | 15,775 | 50,145 | 70,355 | 50,541 | 48,885 | 12,276 | 9,806 | 257,782 |
| West Very Small | 16,344 | 11,199 | 17,910 | 13,166 | 17,245 | 545 | 453 | 76,862 |
| Total | 455,416 | 446,927 | 461,258 | 325,674 | 323,637 | 68,719 | 61,957 | 2,143,589 |

CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

Finally, we used historical data on the production and use of seven major types of pipe with 14 total variations (Figure 4) to estimate what kinds of pipe were installed in water systems in particular years. This was validated by field checking with a sample of water utilities as well as checking against the original Nessie analysis. Together these steps resulted in the development of 16 separate inventories (four regions with four utility sizes in each region), with seven types of pipe in each inventory, *thus providing the most comprehensive picture of the nation's water pipe inventory ever assembled*. Note that in some of the report's graphs, "long-" and "short-lived" versions of certain pipe materials are combined, for purposes of visual simplicity in the presentation.

In order to consider growth, it was also necessary to examine population trends across rural, suburban, and urban settings over the past century. US Census Bureau

Figure 4: Historic Production and Use of Water Pipe by Material





projections of demographic trends allowed the development of infrastructure need profiles for growth through 2050 in each of the regions and utility size categories (for the latter purpose, city size was used as a proxy for utility size).

The study generally assumes that utilities continue efforts to manage the number of main breaks that occur per mile of pipe rather than absorb increases in pipe failures. That is, the study assumes utilities will strive to maintain current levels of service rather than allow increasing water service outages. We assume that each utility’s objective is to make these investments at the optimal time for maintaining current service levels and to avoid replacing pipes while the repairs are still cost-effective. Ideally, pipe replacement occurs at the end of a pipe’s “useful life”;

that is, the point in time when replacement or rehabilitation becomes less expensive in going forward than the costs of numerous unscheduled breaks and associated emergency repairs.

With this data in hand and using the assumptions above, we projected the “typical” useful service life of the pipes in our inventory using the “Nessie Model”™. The model embodies pipe failure probability distributions based on many utilities’ current operating experiences, coupled with insights from extensive research and professional experiences with typical pipe

conditions at different ages and sizes, according to pipe material. The analysis used seven different types of pipe in three diameters and addressed pipe inventories dating back to 1870. Estimated typical service lives of pipes are

Figure 5: Average Estimated Service Lives by Pipe Materials (average years of service)

| Derived Current Service Lives (Years) | CI | CICL (LSL) | CICL (SSL) | DI (LSL) | DI (SSL) | AC (LSL) | AC (SSL) | PVC | Steel | Conc & PCCP |
|---------------------------------------|-----|------------|------------|----------|----------|----------|----------|-----|-------|-------------|
| Northeast Large | 130 | 120 | 100 | 110 | 50 | 80 | 80 | 100 | 100 | 100 |
| Midwest Large | 125 | 120 | 85 | 110 | 50 | 100 | 85 | 55 | 80 | 105 |
| South Large | 110 | 100 | 100 | 105 | 55 | 100 | 80 | 55 | 70 | 105 |
| West Large | 115 | 100 | 75 | 110 | 60 | 105 | 75 | 70 | 95 | 75 |
| Northeast Medium & Small | 115 | 120 | 100 | 110 | 55 | 100 | 85 | 100 | 100 | 100 |
| Midwest Medium & Small | 125 | 120 | 85 | 110 | 50 | 70 | 70 | 55 | 80 | 105 |
| South Medium & Small | 105 | 100 | 100 | 105 | 55 | 100 | 80 | 55 | 70 | 105 |
| West Medium & Small | 105 | 100 | 75 | 110 | 60 | 105 | 75 | 70 | 95 | 75 |
| Northeast Very Small | 115 | 120 | 100 | 120 | 60 | 100 | 85 | 100 | 100 | 100 |
| Midwest Very Small | 135 | 120 | 85 | 110 | 60 | 80 | 75 | 55 | 80 | 105 |
| South Very Small | 130 | 110 | 100 | 105 | 55 | 100 | 80 | 55 | 70 | 105 |
| West Very Small | 130 | 100 | 75 | 110 | 60 | 105 | 65 | 70 | 95 | 75 |

*LSL indicates a relatively long service life for the material resulting from some combination of benign ground conditions and evolved laying practices etc.
 SSL indicates a relatively short service life for the material resulting from some combination of harsh ground conditions and early laying practices, etc.*

Figure 6: Aggregate Needs for Investment in Water Mains Through 2035 and 2050, by Region

| 2011-2035 Totals | | | |
|-------------------------|--------------------|------------------|--------------------|
| (2010 \$M) | Replacement | Growth | Total |
| Northeast | \$92,218 | \$16,525 | \$108,744 |
| Midwest | \$146,997 | \$25,222 | \$172,219 |
| South | \$204,357 | \$302,782 | \$507,139 |
| West | \$82,866 | \$153,756 | \$236,622 |
| Total | \$526,438 | \$498,285 | \$1,024,724 |

| 2011-2050 Totals | | | |
|-------------------------|--------------------|------------------|--------------------|
| (2010 \$M) | Replacement | Growth | Total |
| Northeast | \$155,101 | \$23,200 | \$178,301 |
| Midwest | \$242,487 | \$36,755 | \$279,242 |
| South | \$394,219 | \$492,493 | \$886,712 |
| West | \$159,476 | \$249,794 | \$409,270 |
| Total | \$951,283 | \$802,242 | \$1,753,525 |

reflected in Figure 5. Note that the *actual* lives of pipes may be quite different in a given utility. Because pipe life depends on many important local variables as well as upon utility practices, predicting the actual life expectancy of any given pipe is outside the scope of this study. Many utilities will have pipes that last much longer than these values suggest while others will have pipes that begin to fail sooner. However, these values have been validated as national “averages” by comparing them to actual field experience in a number of utilities throughout the country. The model also includes estimates of the indicative costs to replace each size category of pipe, as well as the cost to repair the projected number of pipe breaks over time according to pipe size.

The analysis of pipe replacement needs is compiled in the Nessie Model by combining the demographically based pipe inventories with the projected effective service lifetimes for each pipe type. This yields an estimate of how much pipe of each size in each region must be replaced in each of the coming 40 years. Factoring in the typical cost to replace these pipes, we derive an estimate of the total investment cost for each future year. The model then derives a series of graphs (the Nessie curves) that depict the amount of spending required in each future year to replace each of the different pipe types by utility size and region. Aggregating this information, we derived the dollar value of total drinking water infrastructure replacement needs over the coming 25 and 40 years for each utility size category per region, and for the United States.



Key Findings

1. The Needs Are Large. Investment needs for buried drinking water infrastructure total more than \$1 trillion nationwide over the next 25 years, assuming pipes are replaced at the end of their service lives and systems are expanded to serve growing populations. Delaying this investment could mean either increasing rates of pipe breakage and deteriorating water service, or suboptimal use of utility funds, such as paying more to repair broken pipes than the long-term cost of replacing them. Nationally, the need is close to evenly divided between replacement due to wear-out and needs generated by demographic changes (growth and migration).

Over the coming 40-year period, *through 2050*, these needs exceed \$1.7 trillion. Replacement needs account for about 54% of the national total, with about 46% attributable to population growth and migration over that period.

Figure 6 (previous page) shows aggregate needs for investment in water mains through 2050, due to wear-out and population growth.

2. Household Water Bills Will Go Up. Important caveats are necessary here, because there are many ways that the increased investment in water infrastructure can be allocated among customers. Variables include rate structures, how the investment is financed, and other important local factors. But the level of investment required to replace worn-out pipes and maintain current levels of water service *in the most affected communities could in some cases triple household water bills*. This projection assumes the costs are spread evenly across the population in a “pay-as-you-go” approach (See “The Costs Keep Coming” below). Figures 7 and 8 illustrate the increasing cost of water that can be expected by households for replacement, and for replacement plus growth, respectively. The utility categories shown in these figures are presented to depict a range of household cost impacts, from the least-to-the-most affected utilities.

Figure 7: Costs per Household for Water Main Replacement by Utility Size and Region

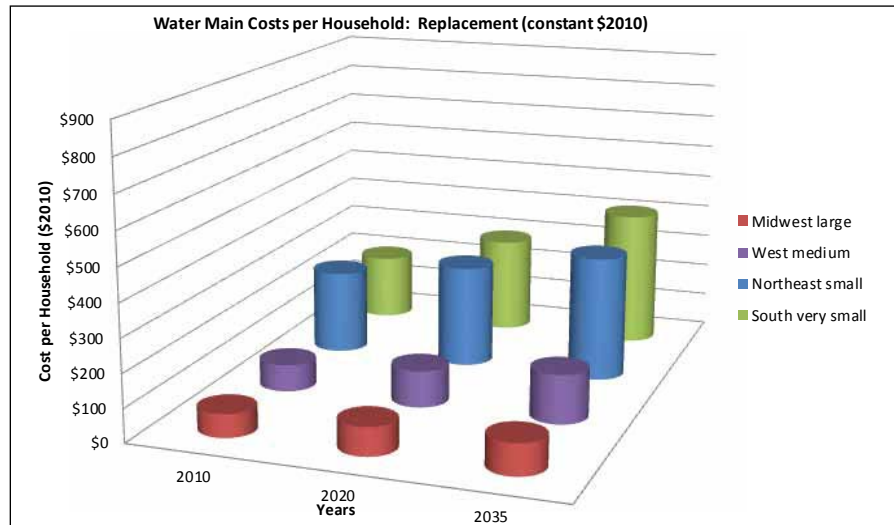
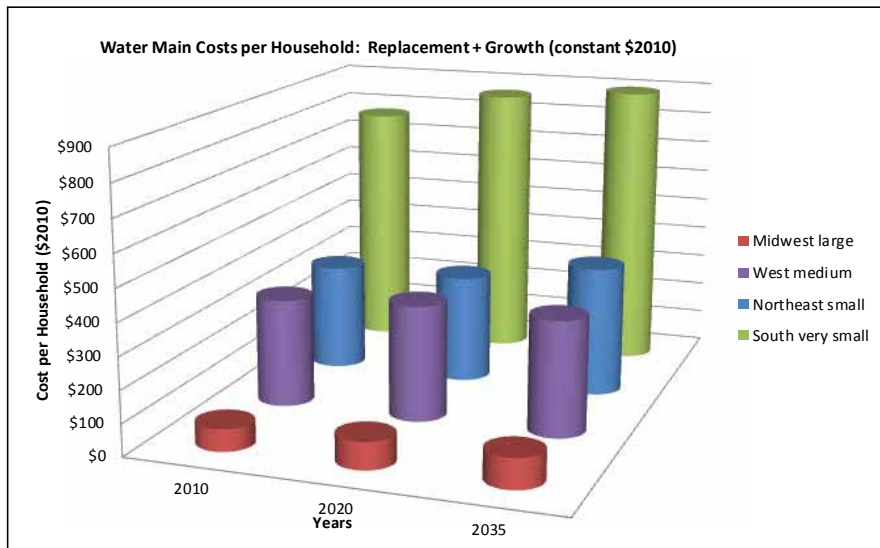


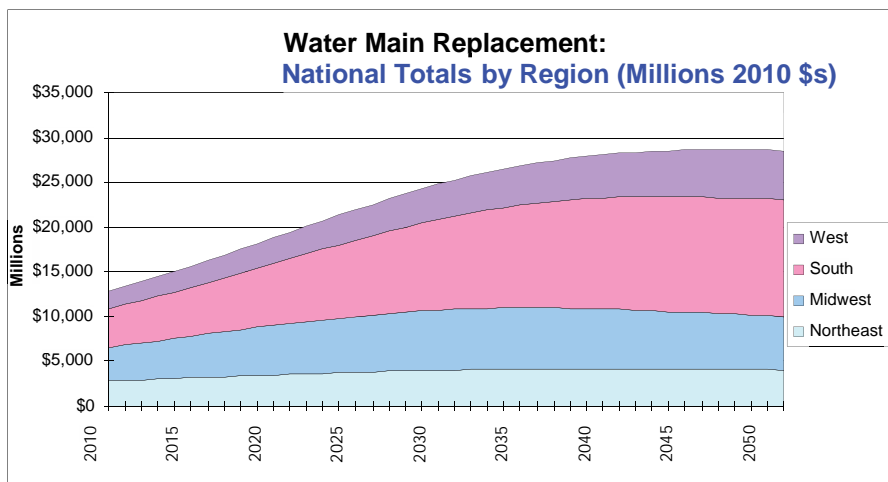
Figure 8: Costs per Household for Water Main Replacement Plus Growth



With respect to the cost of growth, other caveats are important. Many communities expect growth to pay or help pay for itself through developer fees, impact fees, or similar charges. In such communities, established residents will not be required to shoulder the cost of population growth to the extent that these fees recover those costs. *But regardless of how the costs of replacement and growth are allocated among builders, newcomers, or established residents, the total cost that must be borne by the community will still rise.*

3. There Are Important Regional Differences. The growing national need affects different regions in different ways. In general, the South and the West will face the steepest investment challenges, with total needs accounting for considerably more than half the national total (see Figures 6 and 9). This is largely attributable to the fact that the population of these regions is growing rapidly. In contrast, in the Northeast and Midwest, growth is a relatively small component of the projected need. However, the population shifts away from these regions complicate the infrastructure challenge, as there are fewer remaining local customers across whom to spread the cost of renewing their infrastructure.

Figure 9: Water Main Replacement Costs per Region



This regional perspective reveals the inherent difficulty of managing infrastructure supply and demand. Although water pipes are fixed in place and long-lasting, the population that drives the demand for these assets is very mobile and dynamic. People move out of one community, leaving behind a pipe network of fixed size but with fewer customers to support it. They move into a new community, requiring that the water system there be expanded to serve the new customers.

4. There Are Important Differences Based on System Size.

As with many other costs, *small communities may find a steeper challenge ahead on water infrastructure.* Small communities have fewer people, and those people are often more spread out, requiring more pipe “miles per customer” than larger systems. In the most affected small communities, the study suggests that a typical three-person household could see its drinking water bill increase by as much as \$550 per year above current levels, simply to address infrastructure needs, depending as always on the caveats identified above.

In the largest water systems, costs can be spread over a large population base. Needed investments would be consistent with annual per household

cost increases ranging from roughly \$75 to more than \$100 per year by the mid-2030s, assuming the expenses were spread across the population in the year they were incurred. Figure 10 illustrates the differing total costs of required investment by system size.

5. The Costs Keep Coming. The national-level investment we face will roughly double from about \$13 billion a year in 2010 to almost \$30 billion annually by the 2040s for replacement alone. If growth is included, needed investment must increase from a little over \$30 billion today to nearly \$50 billion over the same period. This level of investment must then be sustained for many years, if current levels of water service are to be maintained. *Many utilities will have to face these investment needs year after year, for at least several decades.* That is, by the time the last cohort of pipes analyzed in this study (predominantly the pipes laid between the late 1800s and 1960) has been replaced in, for example, 2050, it may soon thereafter be time to begin replacing the pipes laid after 1960, and so on. In that respect, these capital outlays are unlike those

required to build a new treatment plant or storage tank, where the capital costs are incurred up front and aren't faced again for many years. Rather, infrastructure renewal investments are likely to be incurred each year over several decades. For that reason, *many utilities may choose to finance infrastructure replacement on a “pay-as-you-go” basis rather than through debt financing.*

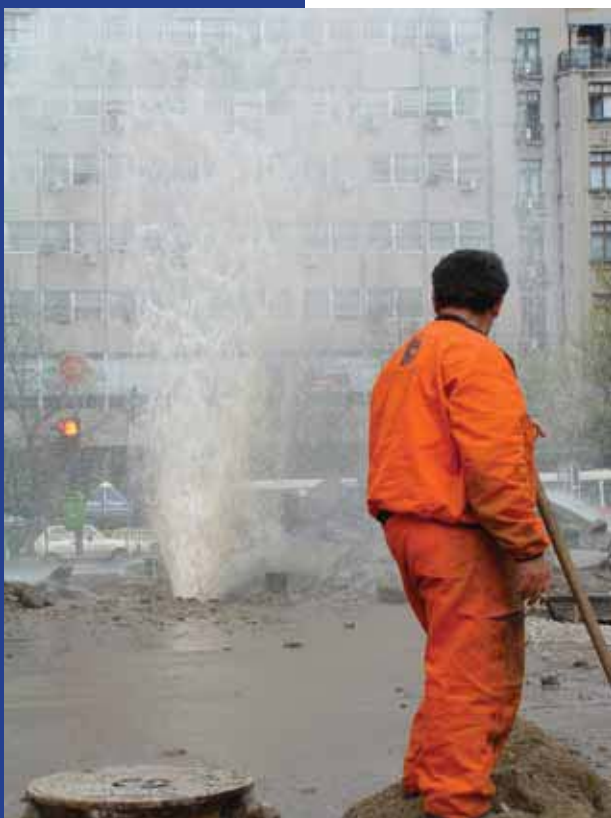
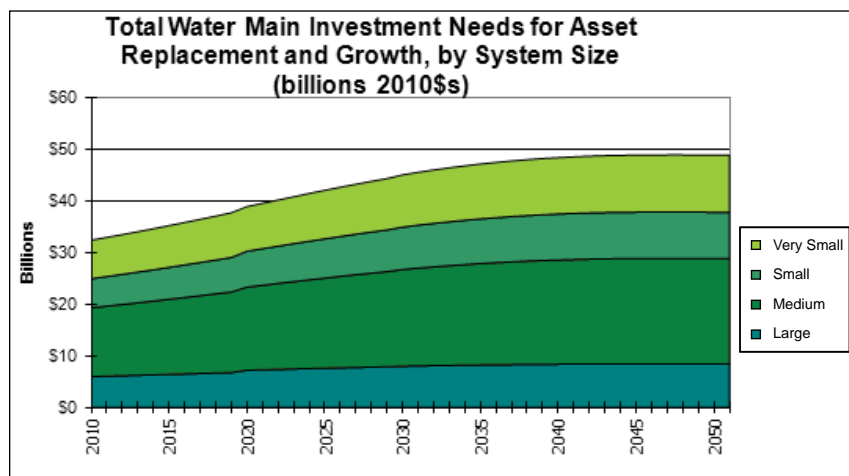


Figure 10: Total Water Main Replacement and Growth Needs by System Size



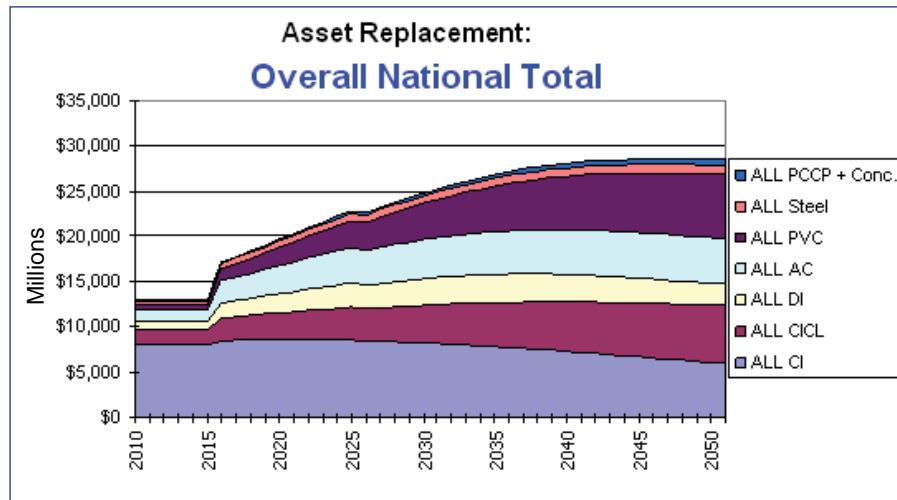
6. Postponing Investment Only Makes the Problem Worse.

Overlooking or postponing infrastructure renewal investments in the near term will only add to the scale of the challenge we face in the years to come. Postponing the investment steepens the slope of the investment curve that must ultimately be met, as shown in Figure 11 (next page). It also increases the odds of facing the high costs associated with water main breaks and other infrastructure failures. The good news is that *not all of the \$1 trillion investment through 2035 must be made right now*. There is time to make suitable plans and implement policies that will help address the longer-term challenge. The bad news is that the required investment level is growing, as more pipes continue to age and reach the end of their effective service lives.

As daunting as the figures in this report are, the prospect of not making the necessary investment is even more chilling. Aging water mains are subject to more frequent breaks and other failures that can threaten public health and safety (such as compromising tap water quality and fire-fighting flows). Buried infrastructure failures also may impose significant damages (for example, through flooding and sinkholes), are costly to repair, disrupt businesses and residential communities, and waste precious water resources. These maladies weaken our economy and undermine our quality of life. As large as the cost of reinvestment may be, **not** undertaking it will be worse in the long run by almost any standard.

This suggests that a crucial responsibility for utility managers now and in the future is to develop the processes necessary to continually improve their understanding of the “replacement dynamics” of their own water systems. Those dynamics should be reflected in an Asset Management Plan (AMP) and, of course, in a long-term capital investment plan. The 2006 AWWA Report *Water Infrastructure at a Turning Point* includes a full discussion of this issue.

Figure 11: Effect of Deferring Investment Five Years with a Ten-Year Make-Up Period



Conclusion

Because pipe assets last a long time, water systems that were built in the latter part of the 19th century and throughout much of the 20th century have, for the most part, never experienced the need for pipe replacement on a large scale. The dawn of the era in which these assets will need to be replaced puts a growing financial stress on communities that will continually increase for decades to come. It adds large and hitherto unknown expenses to the more apparent above-ground spending required to meet regulatory standards and address other pressing needs.



It is important to reemphasize that there are significant differences in the timing and magnitude of the challenges facing different regions of the country and different sizes of water systems. But the investments we describe in this report are real, they are large, and they are coming.

The United States is reaching a crossroads and faces a difficult choice. We can incur the haphazard and growing costs of living with aging and failing drinking water infrastructure. Or, we can carefully prioritize and undertake drinking water infrastructure renewal investments to ensure that our water utilities can continue to reliably and cost-effectively support the public

health, safety, and economic vitality of our communities. AWWA undertook this report to provide the best, most accurate information available about the scale and timing of these needed investments.

It is clear the era AWWA predicted a decade ago—the replacement era—has arrived. The issue of aging water infrastructure, which was buried for years, can be buried no longer. Ultimately, the cost of the renewal we face must come from local utility customers, through higher water rates. However, the magnitude of the cost and the associated affordability and other adverse impacts on



communities—as well as the varying degrees of impact to be felt across regions and across urban and rural areas—suggest that there is a key role for states and the federal government as well. In particular, states and the federal government can help with a careful and cost-effective program that lowers the cost of necessary investments to our communities, such as the creation of a credit support program—for example, AWWA's proposed Water Infrastructure Finance and Innovation Authority (WIFIA).

Finally, in many cases, difficult choices may need to be made between competing needs if water bills are to be kept affordable. Water utilities are willing to ask their customers to invest more, but it's important this investment be in things that bring the greatest actual benefit to the community. Only in that spirit can we achieve the goal to which we all aspire, the reliable provision of safe and affordable water to all Americans.

Additional Information and Resources.

A full and robust infrastructure analysis is an indispensable tool for decision making by water and wastewater utilities. This report does not substitute for such detailed local analysis for purposes of designing an infrastructure asset management program for individual utilities.

Additional information is available from AWWA concerning asset management. Particular attention should be given to the WITAF reports *Dawn of the Replacement Era*, *Avoiding Rate Shock*, *Thinking Outside the Bill* and *Water Infrastructure at a Turning Point*. In addition, Manual M1, *Principles of Water Rates, Fees, and Charges*, and the AWWA Utility Management Standards may be helpful. For more information, visit the AWWA Bookstore at www.awwa.org/store.

A number of graphs and figures from this report are also available through the AWWA website at www.awwa.org/infrastructure. They include:

| | |
|---|--|
| Estimated Distribution of Mains by Material Northeast and Midwest South and West | Household Cost of Needed Investment by Region and Size of Utility |
| Proportion of 2010 Systems Built by Year Northeast Midwest South West | Northeast Large Medium Small Very Small |
| Investment for Replacement Plus Growth, by Region and Size of Utility | Midwest Large Medium Small Very Small |
| Northeast Large Medium Small Very Small | South Large Medium Small Very Small |
| Midwest Large Medium Small Very Small | West Large Medium Small Very Small |
| South Large Medium Small Very Small | |
| West Large Medium Small Very Small | |

www.awwa.org/infrastructure

Estimated Distribution of Mains by Material Over Time Northeast & Midwest Regions

| | <6 inch diameter | | | 6-10 inch diameter | | | >10 inch diameter | | | Steel | Conc & PCCP | | | | |
|--|------------------|------------|------------|--------------------|----------|----------|-------------------|-----|------|-------|-------------|------------|------------|----------|----------|
| | CI | CICL (LSL) | CICL (SSL) | DI (LSL) | DI (SSL) | AC (LSL) | AC (SSL) | PVC | CI | | | CICL (LSL) | CICL (SSL) | DI (LSL) | AC (LSL) |
| 1870 | 100% | | | | | | | | 100% | | | | | | |
| 1880 | 100% | | | | | | | | 100% | | | | | | |
| 1890 | 100% | | | | | | | | 100% | | | | | | |
| 1900 | 100% | | | | | | | | 100% | | | | | | |
| 1910 | 100% | | | | | | | | 100% | | | | | | |
| 1920 | 100% | | | | | | | | 100% | | | | | | |
| 1930 | 50% | 30% | 20% | | | | | | 50% | 30% | 20% | | | | |
| 1940 | 20% | 60% | 20% | | | | | | 20% | 40% | 20% | | | | |
| 1950 | | 60% | | | | | | | | 40% | | | | | 30% |
| 1960 | | 50% | | | | | | | | 35% | | | | | 30% |
| 1970 | | 20% | | | | | | | | | | | | | 30% |
| 1980 | | | | | | | | | | | | | | | 25% |
| 1990 | | | | | | | | | | | | | | | 25% |
| 2000 | | | | | | | | | | | | | | | 25% |
| 2010 | | | | | | | | | | | | | | | 25% |
| 2020 | | | | | | | | | | | | | | | 25% |
| 2030 | | | | | | | | | | | | | | | 25% |
| Steel and PCCP pipe not in widespread use in sizes under 10 inches. | | | | | | | | | | | | | | | |
| CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe | | | | | | | | | | | | | | | |

The regions are combined because they share similar dynamics for this distribution.

Note:

"LSL" indicates a relatively long service life for the material resulting from some combination of benign ground conditions and evolved laying practices etc.

"SSL" indicates a relatively short service life for the material resulting from some combination of harsh ground conditions and early laying practices etc.

Estimated Distribution of Mains by Material Over Time South & West Regions

| | CI | | CICL (LSL) | | CICL (SSL) | | DI (LSL) | | DI (SSL) | | AC (LSL) | | AC (SSL) | | PVC | CI | CICL (LSL) | CICL (SSL) | DI (LSL) | DI (SSL) | AC (LSL) | AC (SSL) | Steel | Conc & PCCP |
|--------------------|-------------------|-----|------------|-----|------------|-----|----------|-----|----------|--|----------|--|----------|--|-----|------|------------|------------|----------|----------|----------|----------|-------|-------------|
| | >10 inch diameter | | | | | | | | | | | | | | | | | | | | | | | |
| 6-10 inch diameter | | | | | | | | | | | | | | | | | | | | | | | | |
| <6 inch diameter | | | | | | | | | | | | | | | | | | | | | | | | |
| 1870 | 100% | | | | | | | | | | | | | | | 100% | | | | | | | | |
| 1880 | 100% | | | | | | | | | | | | | | | 100% | | | | | | | | |
| 1890 | 100% | | | | | | | | | | | | | | | 100% | | | | | | | | |
| 1900 | 100% | | | | | | | | | | | | | | | 100% | | | | | | | | |
| 1910 | 100% | | | | | | | | | | | | | | | 100% | | | | | | | | |
| 1920 | 100% | | | | | | | | | | | | | | | 100% | | | | | | | | |
| 1930 | 50% | 30% | 20% | | | | | | | | | | | | | 50% | 30% | 20% | | | | | | |
| 1940 | | 70% | 30% | | | | | | | | | | | | | | 70% | 30% | | | | | | |
| 1950 | | 25% | | | | | | | | | | | | | | | 25% | | | | | | | |
| 1960 | | 25% | | 2% | 3% | 40% | 40% | 30% | | | | | | | | | 25% | | 2% | 3% | 40% | 40% | 30% | 20% |
| 1970 | | 10% | | 10% | 10% | 40% | 40% | 40% | | | | | | | | | 10% | | 10% | 10% | 40% | 40% | 30% | 20% |
| 1980 | | | | 25% | 25% | | | | | | | | | | | | | | 30% | 30% | | | | 20% |
| 1990 | | | | 45% | 45% | | | | | | | | | | | | | | 50% | 5% | | | | 20% |
| 2000 | | | | 50% | 50% | | | | | | | | | | | | | | 50% | 50% | | | | 20% |
| 2010 | | | | 50% | 50% | | | | | | | | | | | | | | 50% | 50% | | | | 20% |
| 2020 | | | | 50% | 50% | | | | | | | | | | | | | | 50% | 50% | | | | 20% |
| 2030 | | | | 50% | 50% | | | | | | | | | | | | | | 50% | 50% | | | | 20% |

Steel and PCCP pipe not in widespread use in sizes under 10 inches.

CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

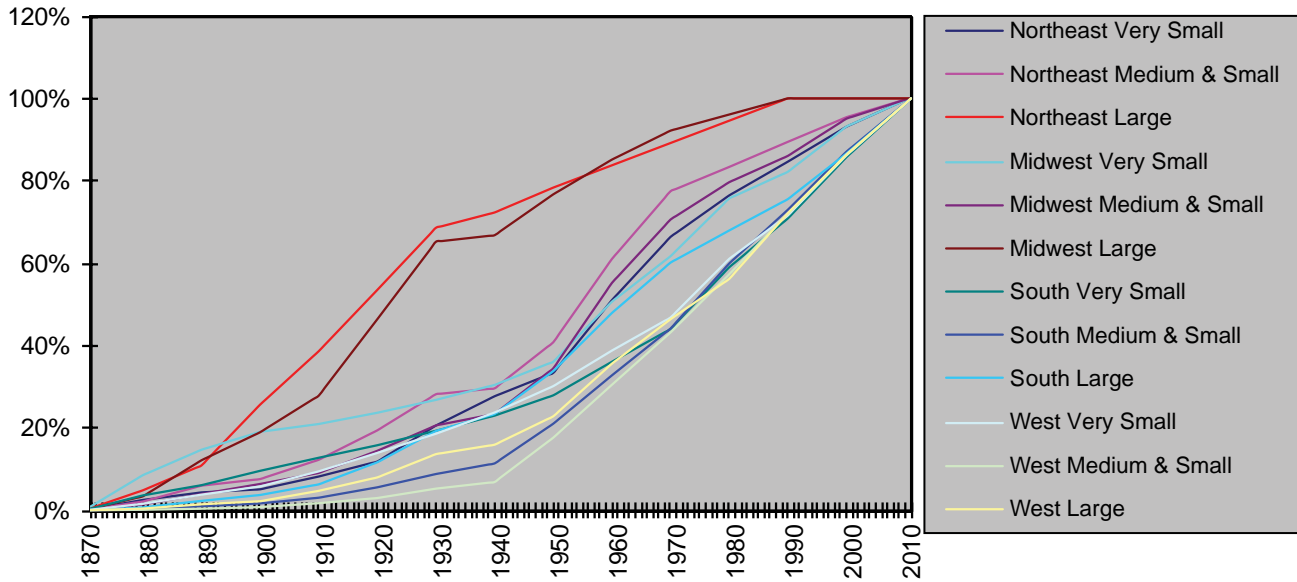
The regions are combined because they share similar dynamics for this distribution.

Note:

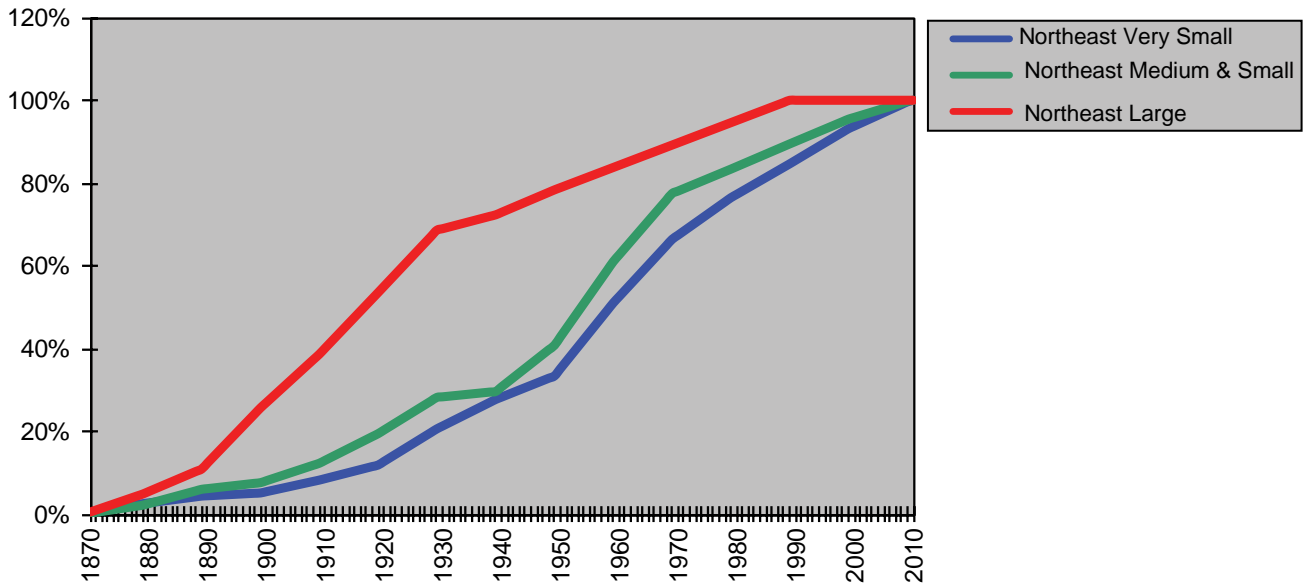
"LSL" indicates a relatively long service life for the material resulting from some combination of benign ground conditions and evolved laying practices etc.

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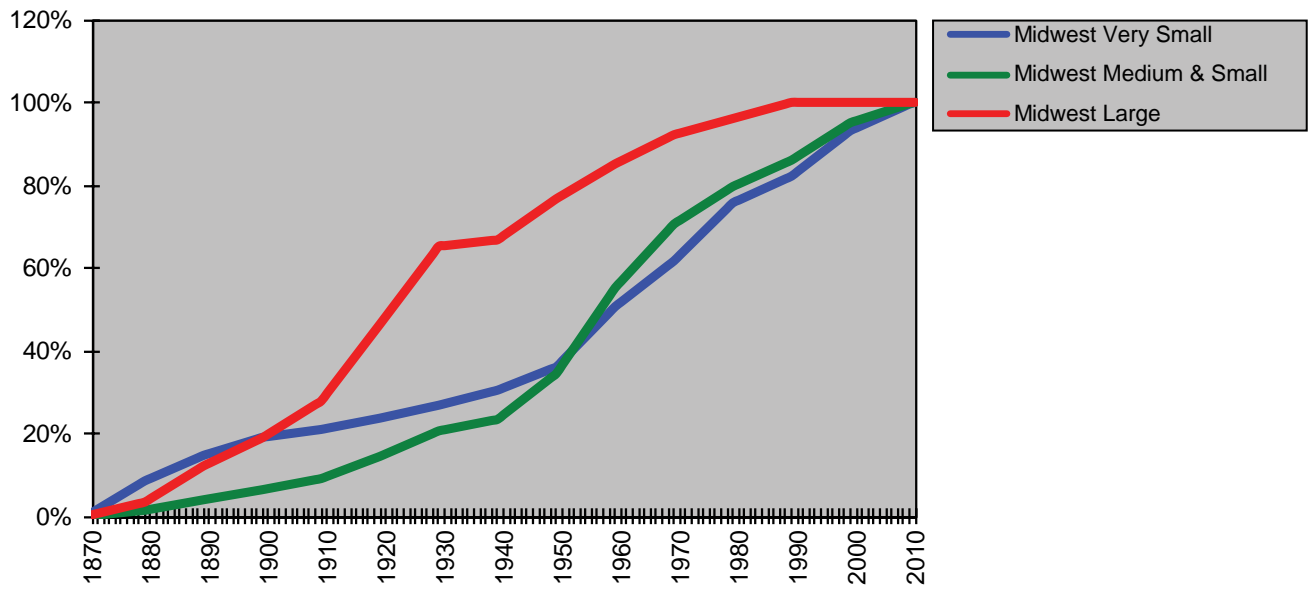
Proportion of Current System Built by Decade: All Regions



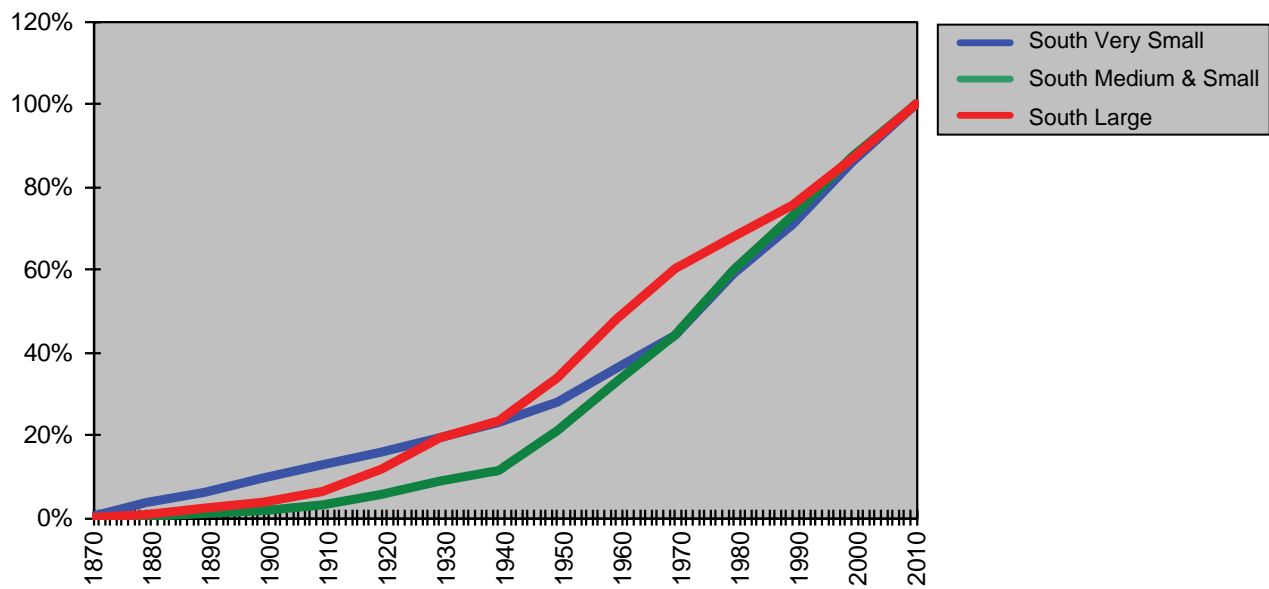
Proportion of Current System Built by Decade: Northeast



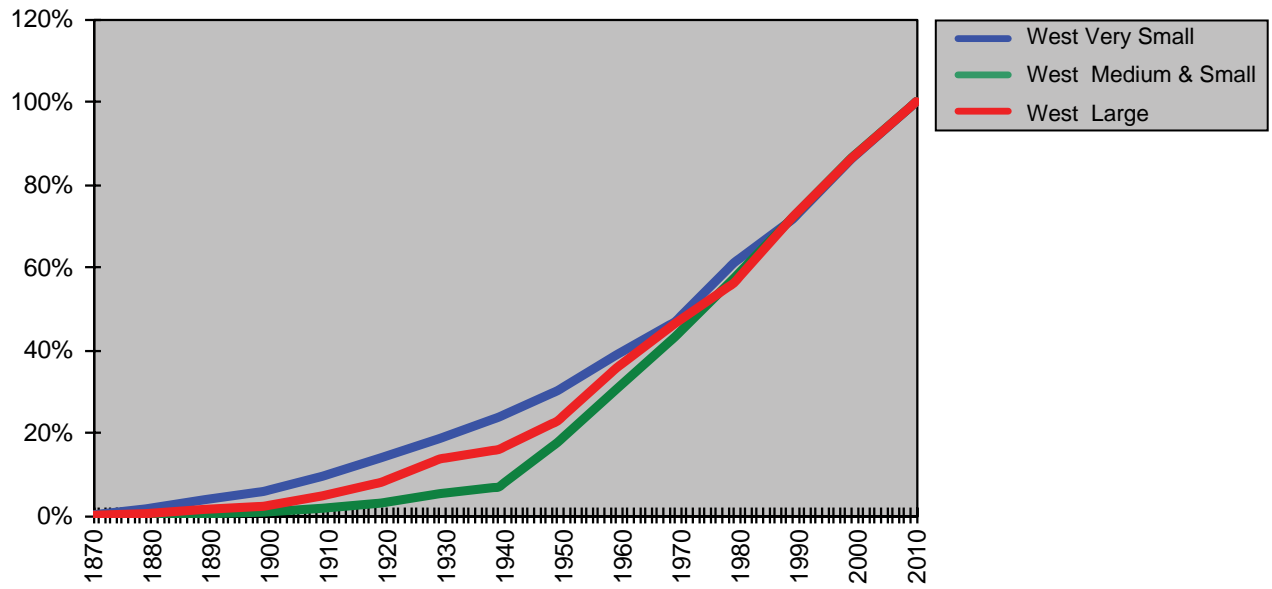
Proportion of Current System Built by Decade: Midwest



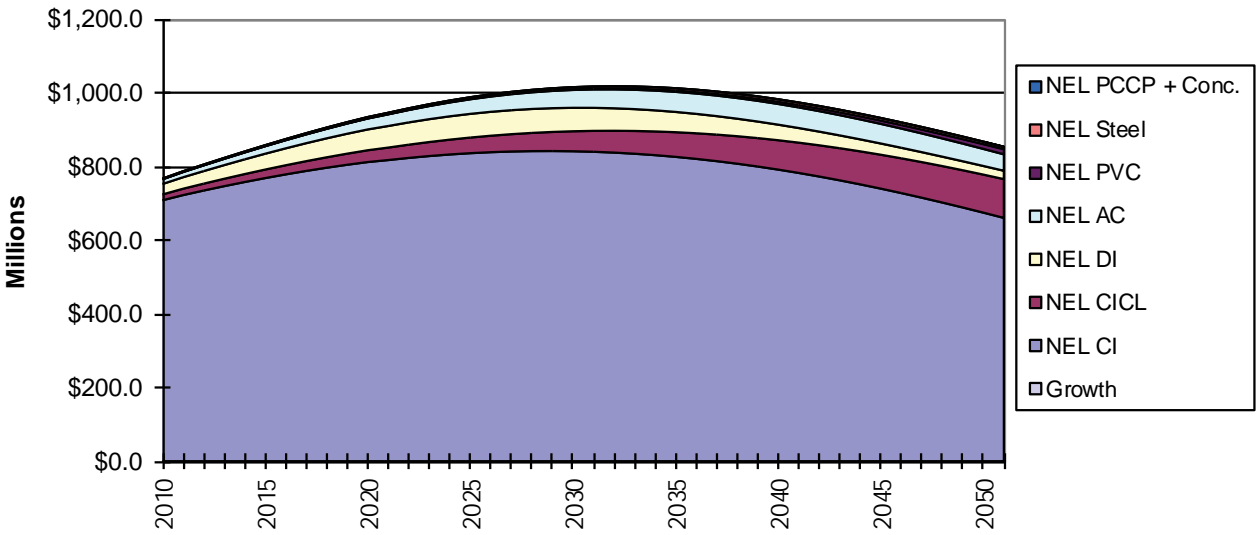
Proportion of Current System Built by Decade: South



Proportion of Current System Built by Decade: South

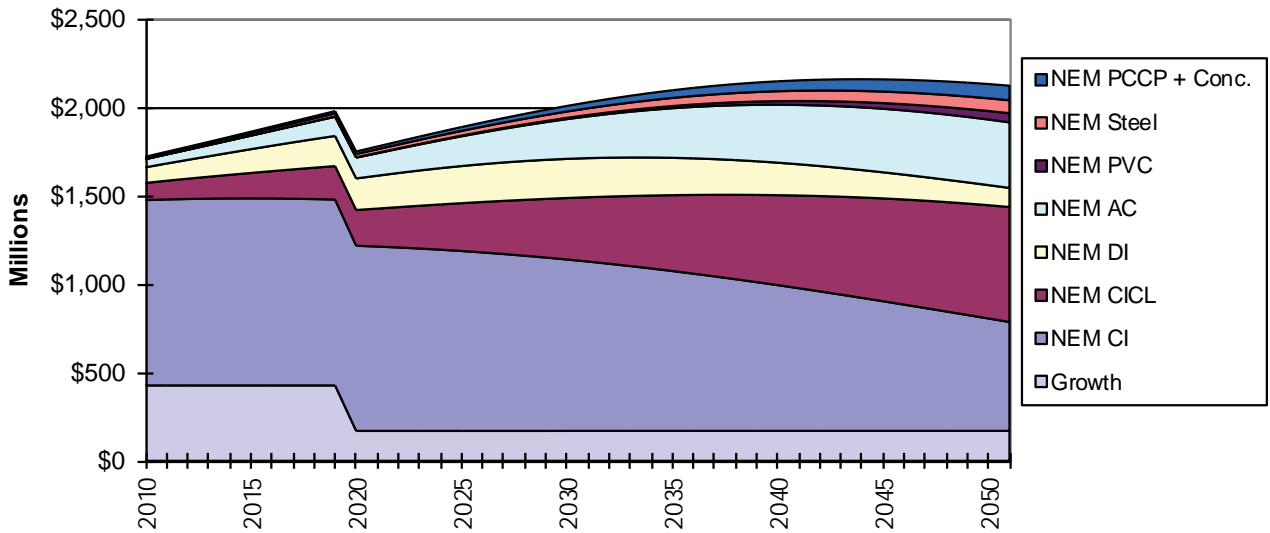


Investment for Replacement & Growth Northeast Large



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

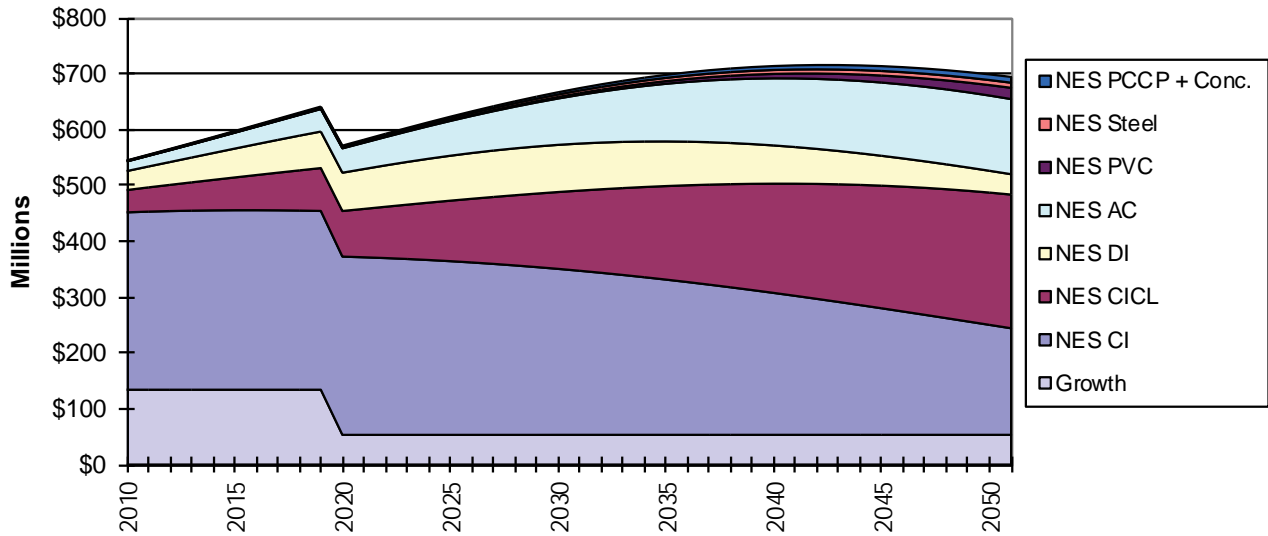
Investment for Replacement & Growth Northeast Medium



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

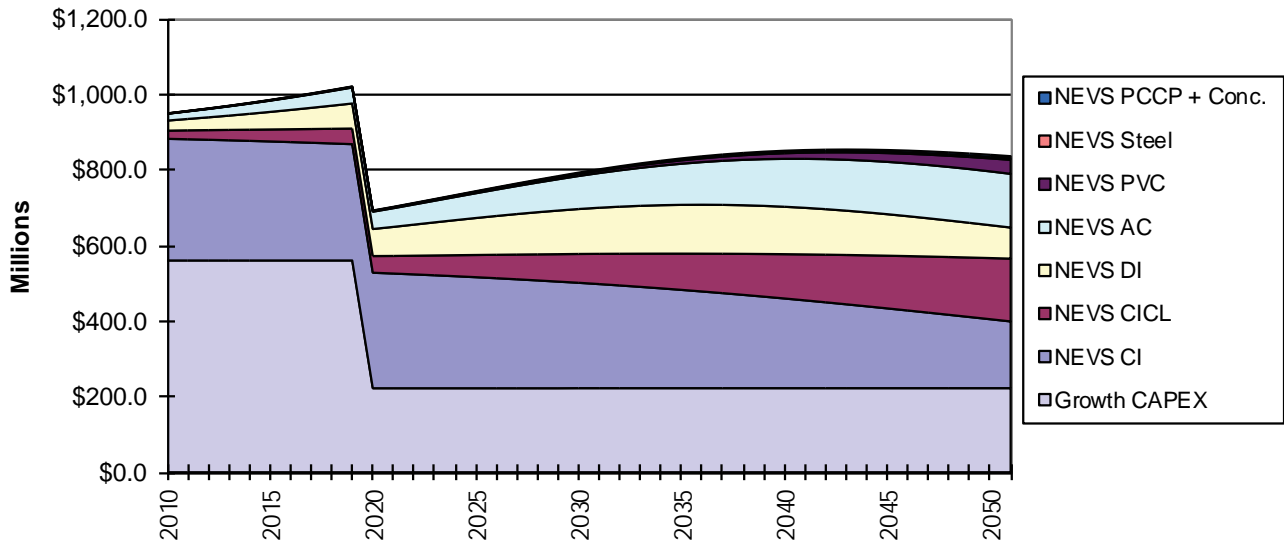
The charts show needs for replacement of particular types of pipe and for growth (see the keys below and to the right of the chart). An artifact of the model and US Census data result in an apparent upward or downward “spike” in growth-related needs between certain decades. In reality, the apparent sudden shift in growth-related needs will be spread more evenly over the years bridging each decade to the next.

Investment for Replacement & Growth Northeast Small



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

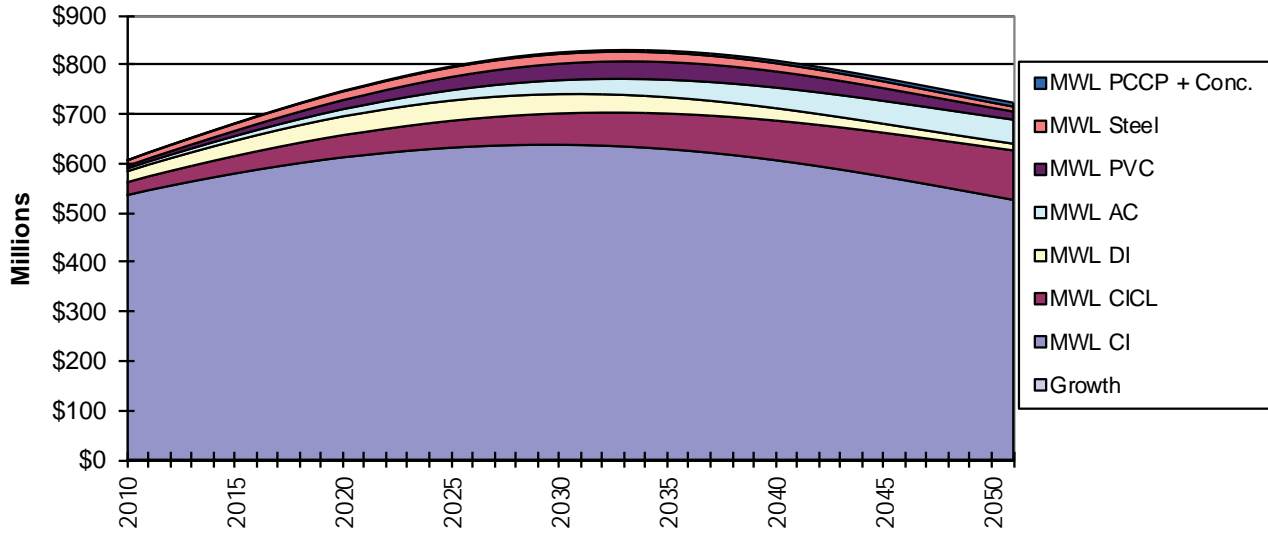
Investment for Replacement & Growth Northeast Very Small



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

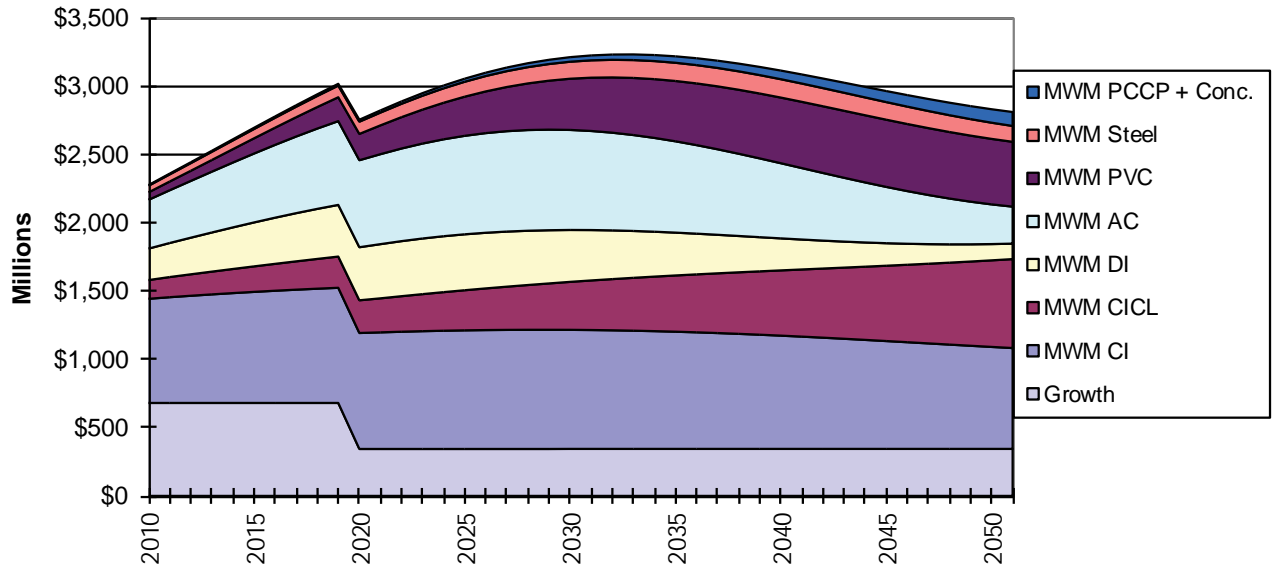
The charts show needs for replacement of particular types of pipe and for growth (see the keys below and to the right of the chart). An artifact of the model and US Census data result in an apparent upward or downward “spike” in growth-related needs between certain decades. In reality, the apparent sudden shift in growth-related needs will be spread more evenly over the years bridging each decade to the next.

Investment for Replacement & Growth Midwest Large



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

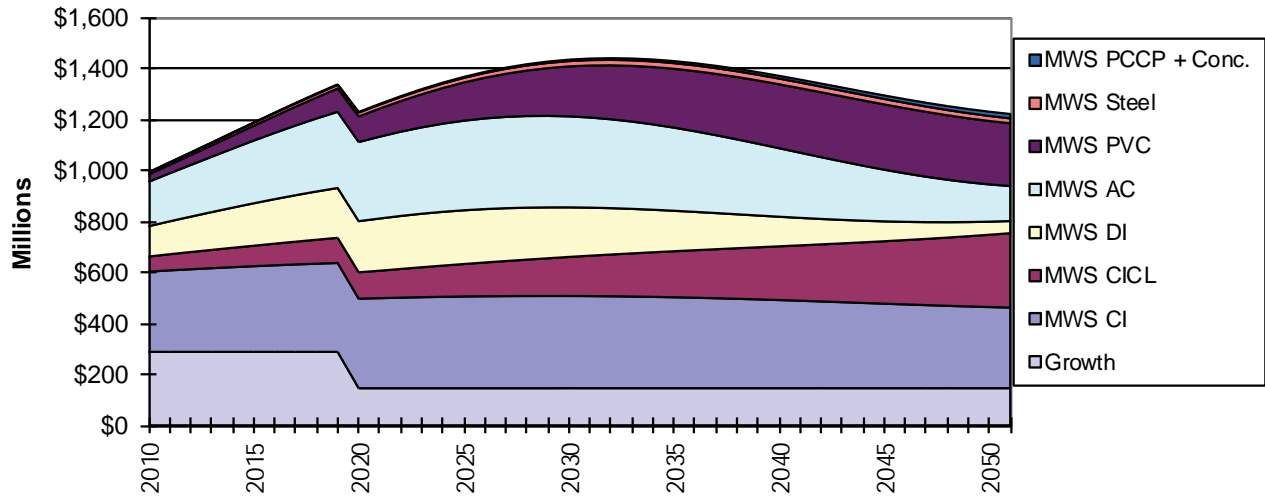
Investment for Replacement & Growth Midwest Medium



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

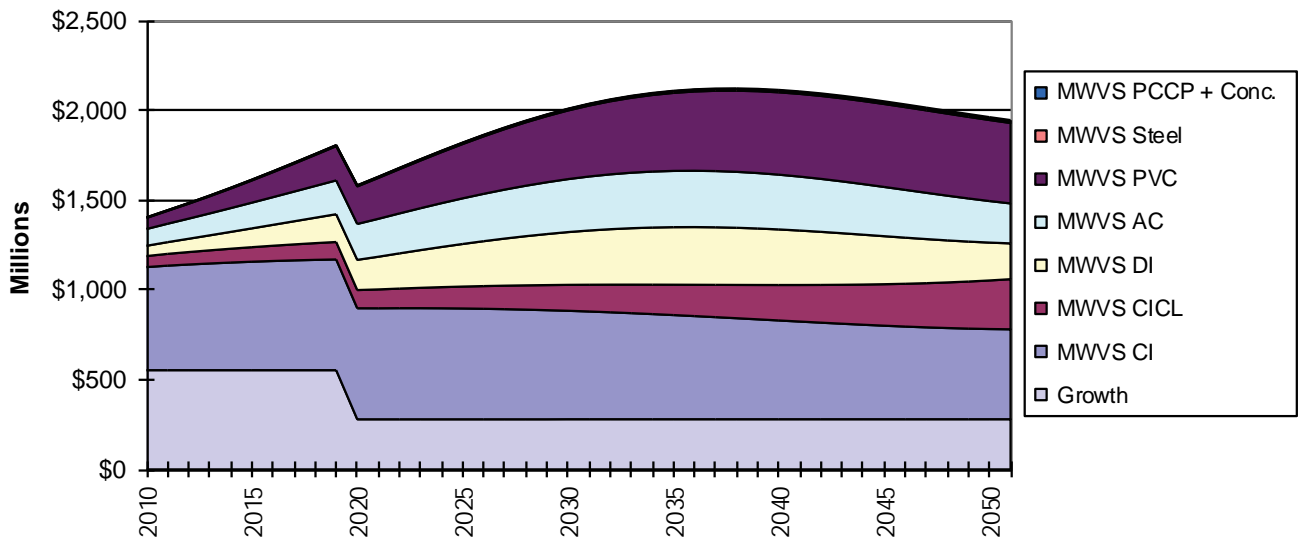
The charts show needs for replacement of particular types of pipe and for growth (see the keys below and to the right of the chart). An artifact of the model and US Census data result in an apparent upward or downward “spike” in growth-related needs between certain decades. In reality, the apparent sudden shift in growth-related needs will be spread more evenly over the years bridging each decade to the next.

Investment for Replacement & Growth Midwest Small



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

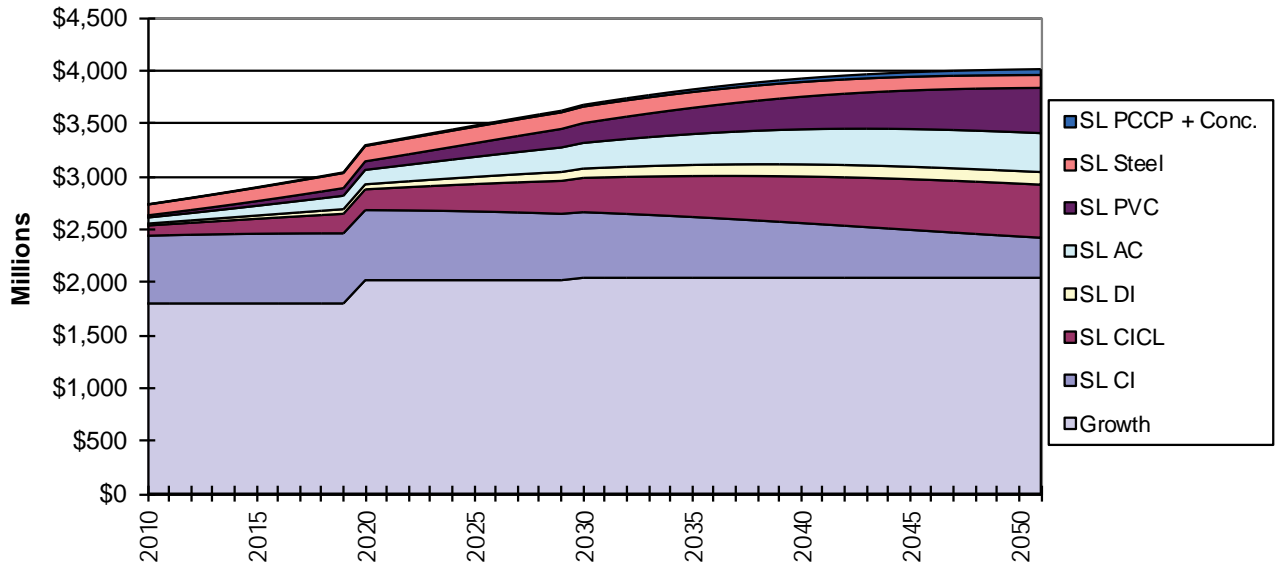
Investment for Replacement & Growth Midwest Very Small



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

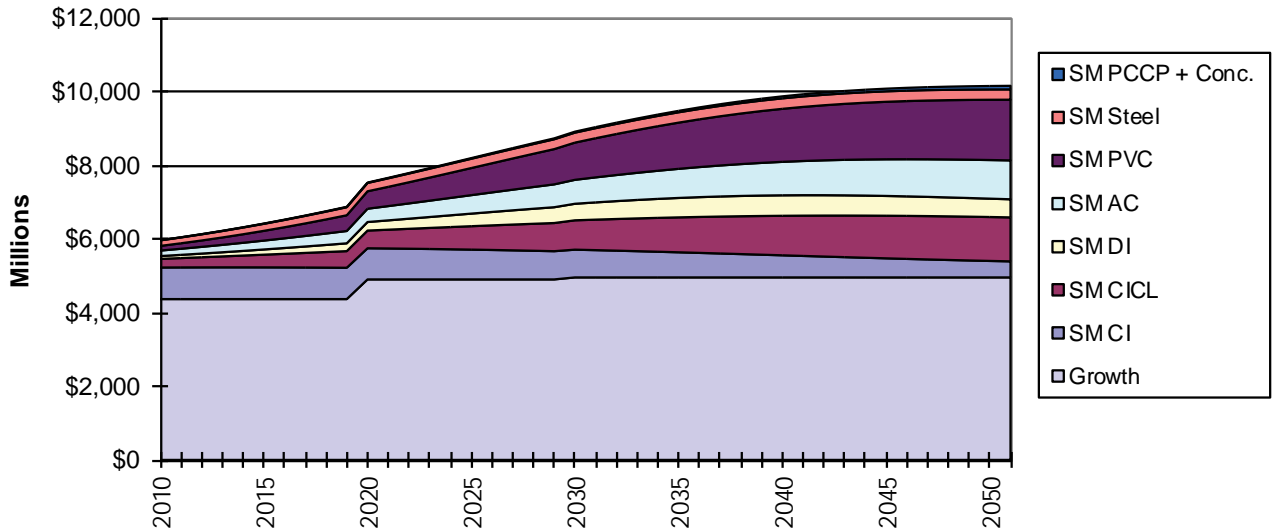
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Investment for Replacement & Growth South Large



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

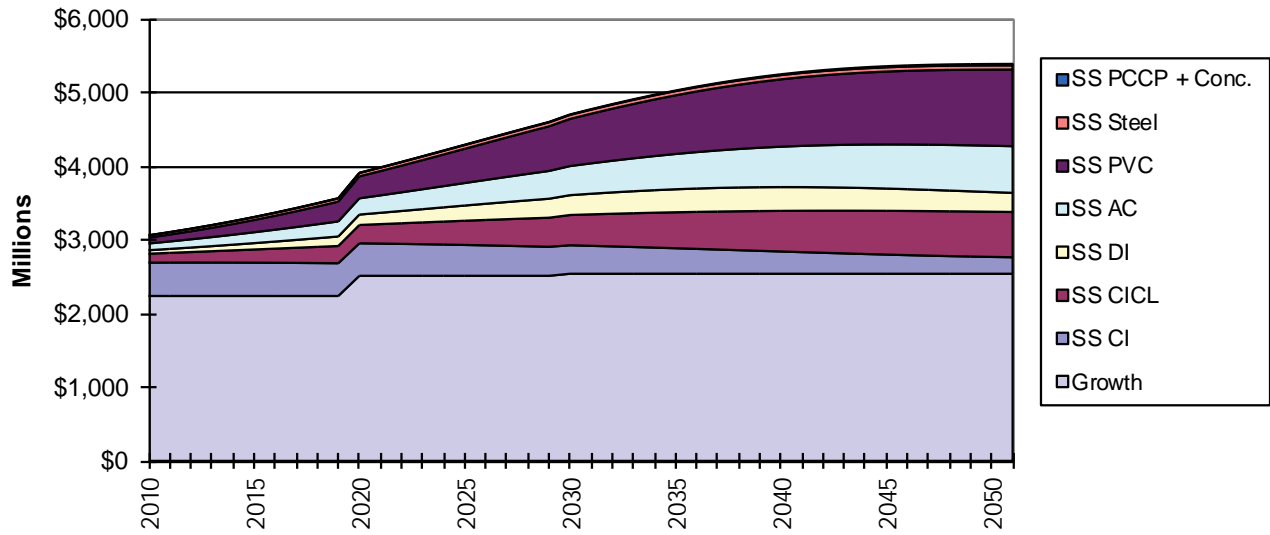
Investment for Replacement & Growth South Medium



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

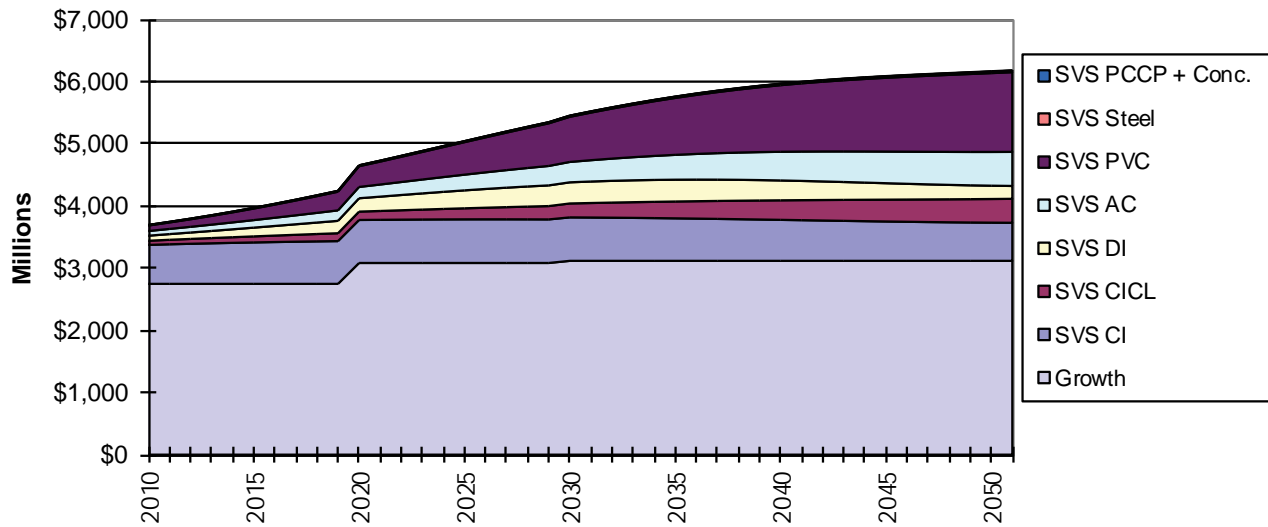
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Investment for Replacement & Growth South Small



CI: cast iron; CACL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

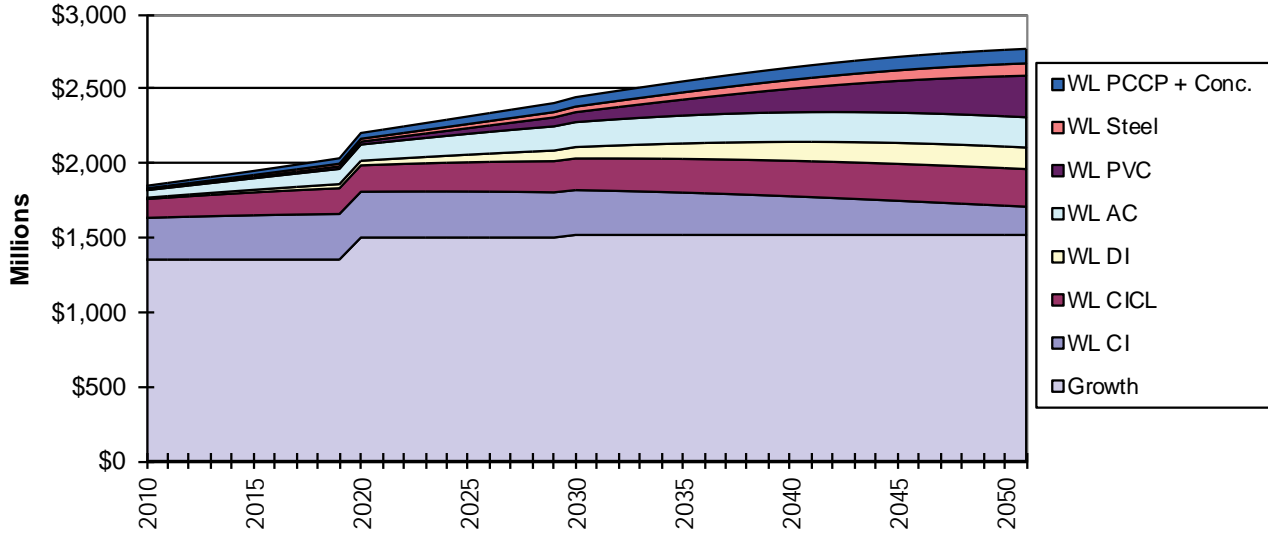
Investment for Replacement & Growth South Very Small



CI: cast iron; CACL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

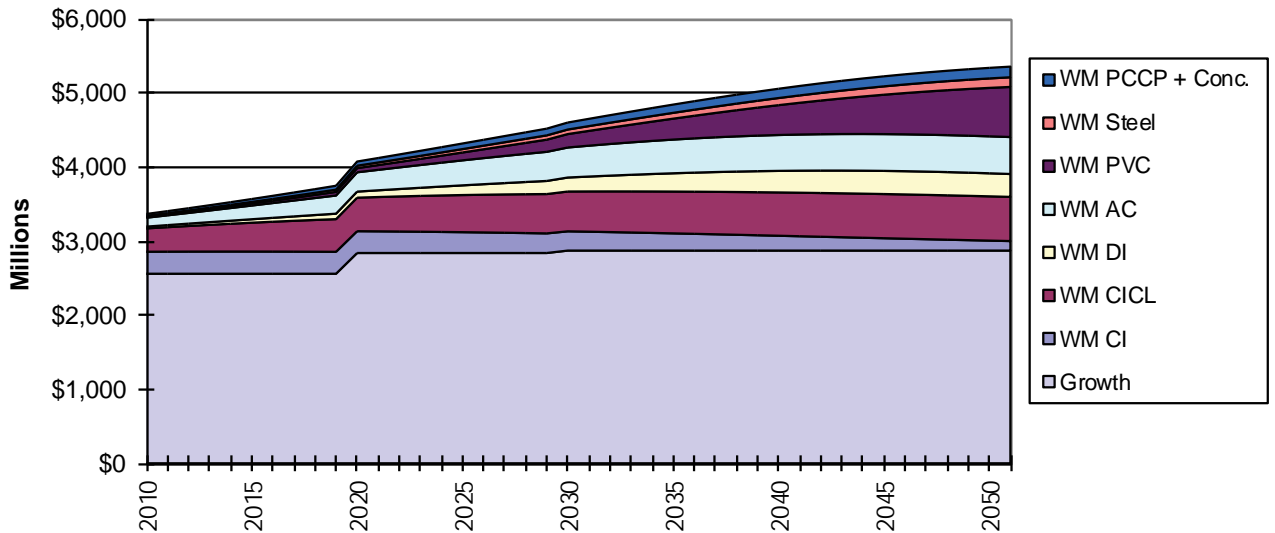
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Investment for Replacement & Growth West Large



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

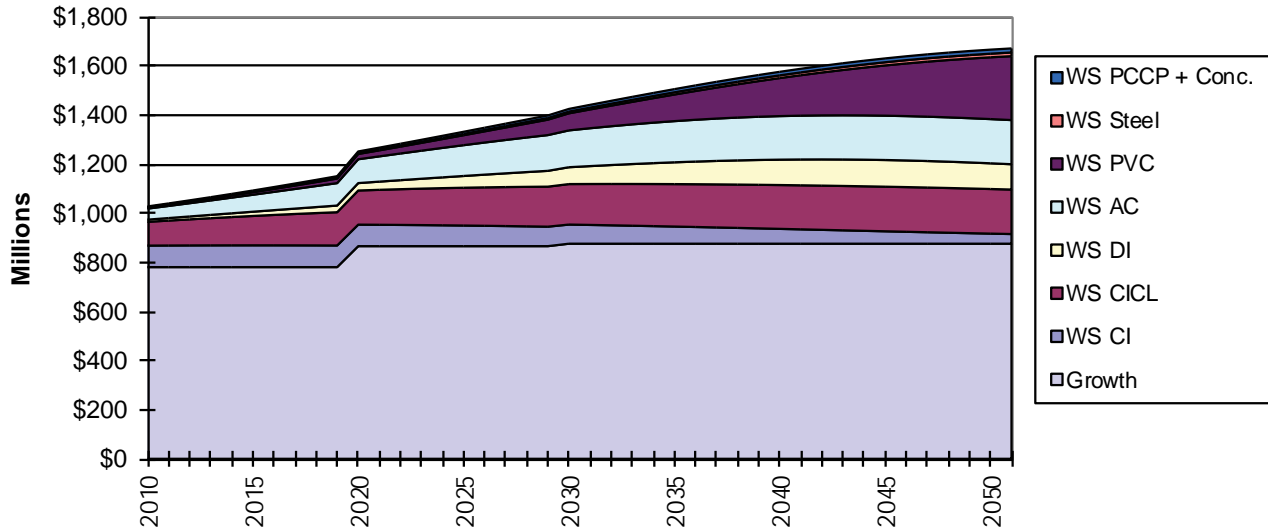
Investment for Replacement & Growth West Medium



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

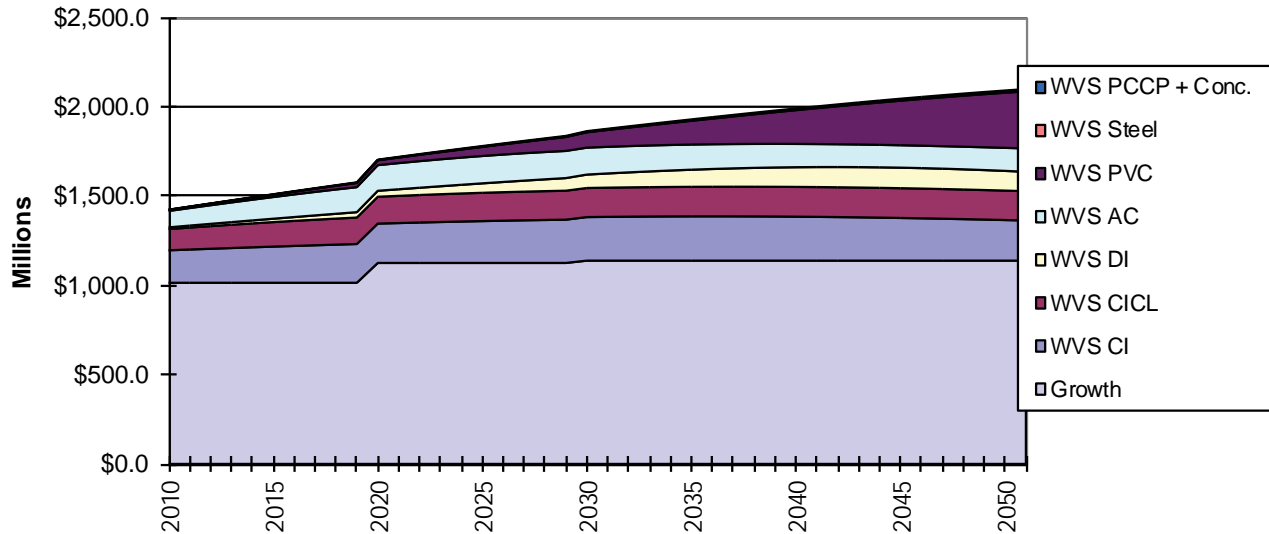
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Investment for Replacement & Growth West Small



CI: cast iron; CACL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

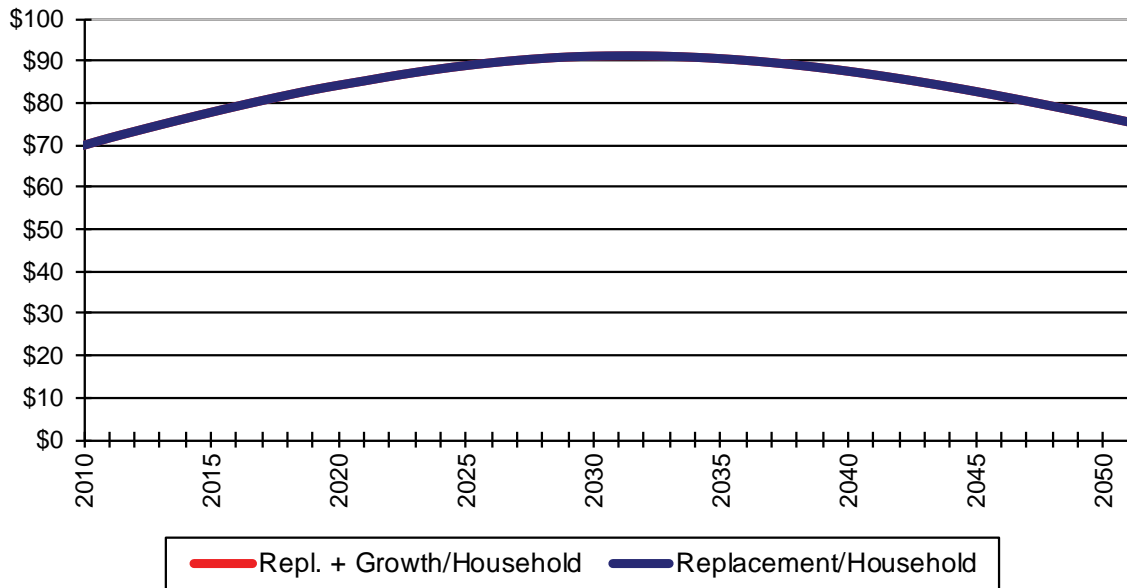
Investment for Replacement & Growth West Very Small



CI: cast iron; CACL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

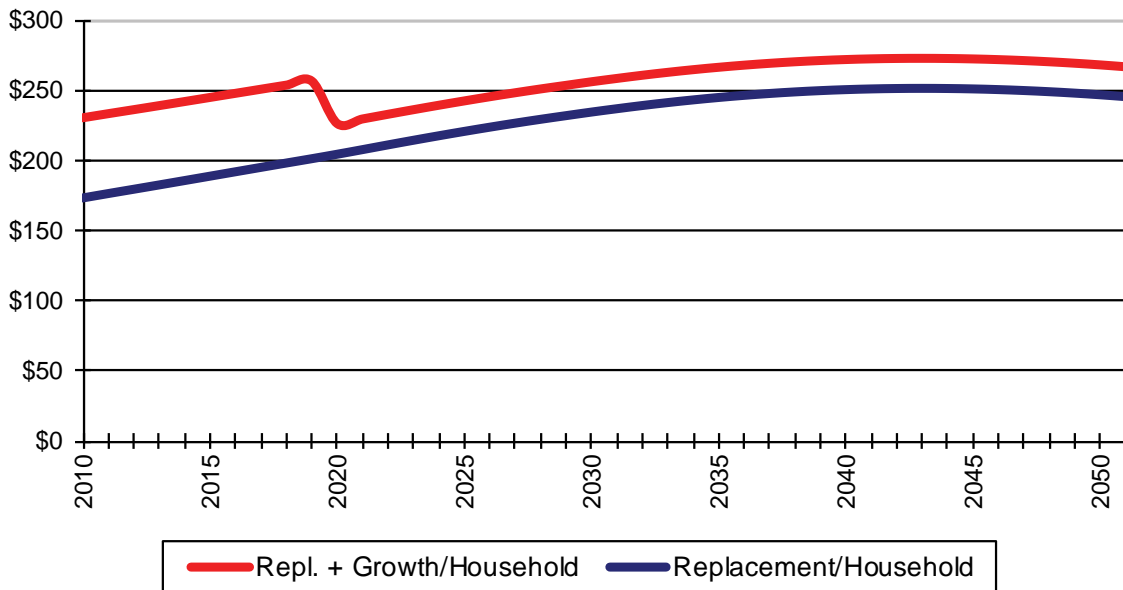
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Household Cost of Needed Investment for Replacement Plus Growth* Northeast Large



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

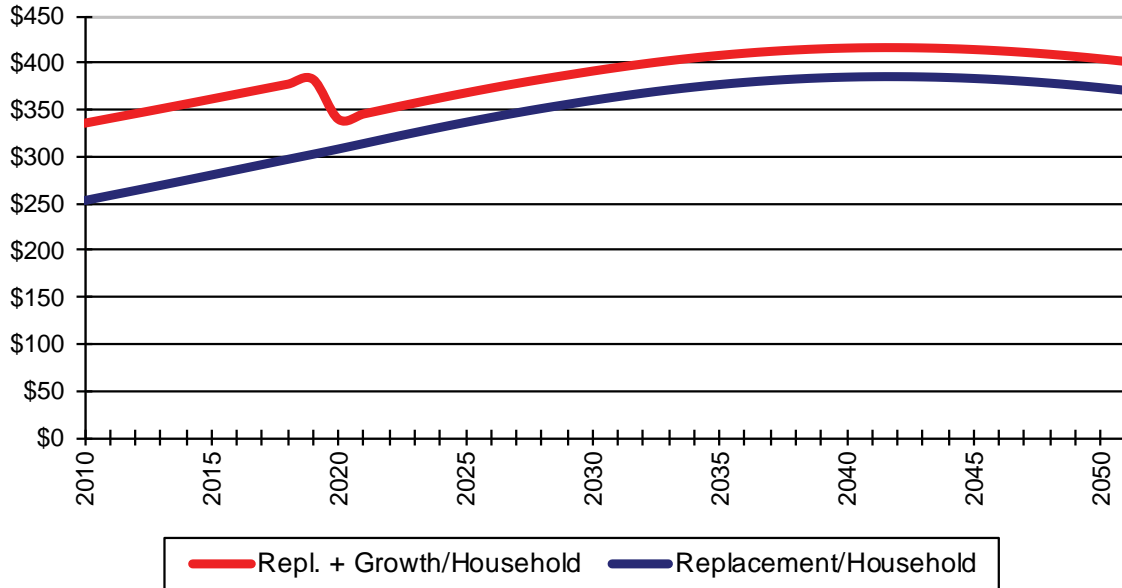
Household Cost of Needed Investment for Replacement Plus Growth* Northeast Medium



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

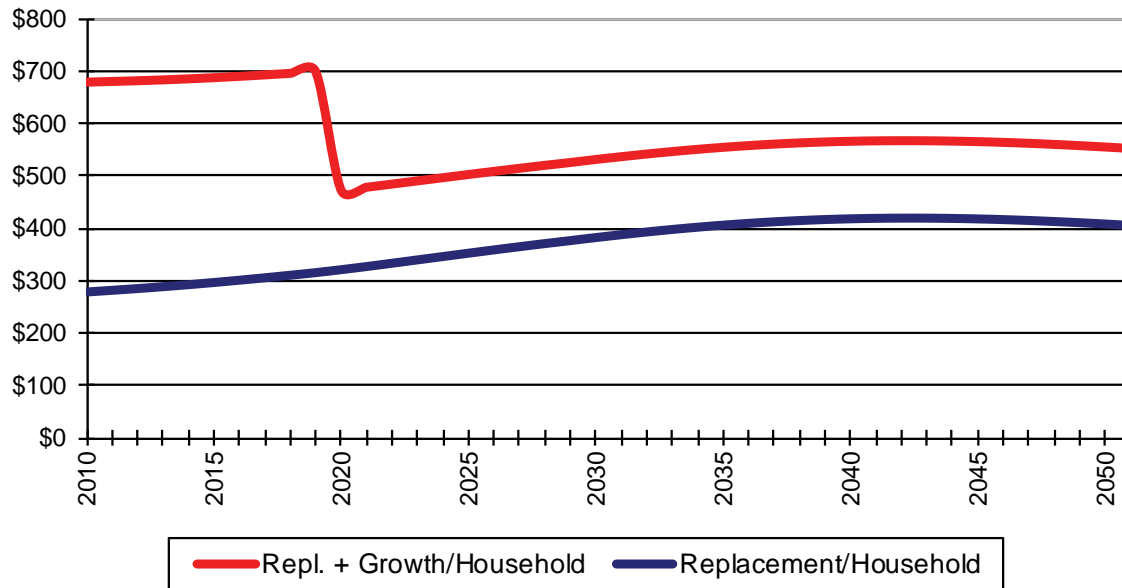
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Household Cost of Needed Investment for Replacement Plus Growth* Northeast Small



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

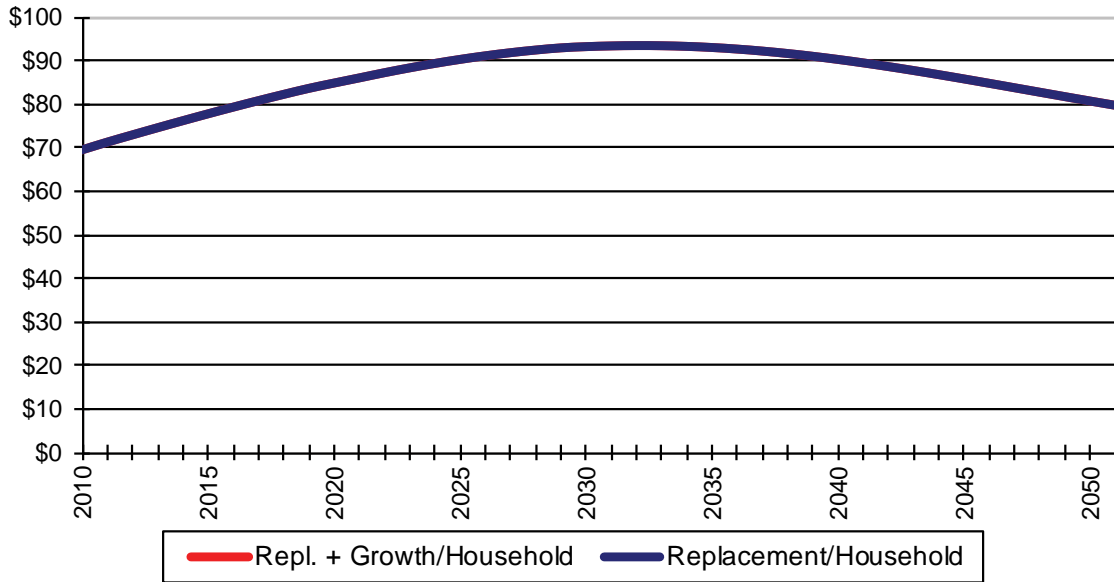
Household Cost of Needed Investment for Replacement Plus Growth* Northeast Very Small



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

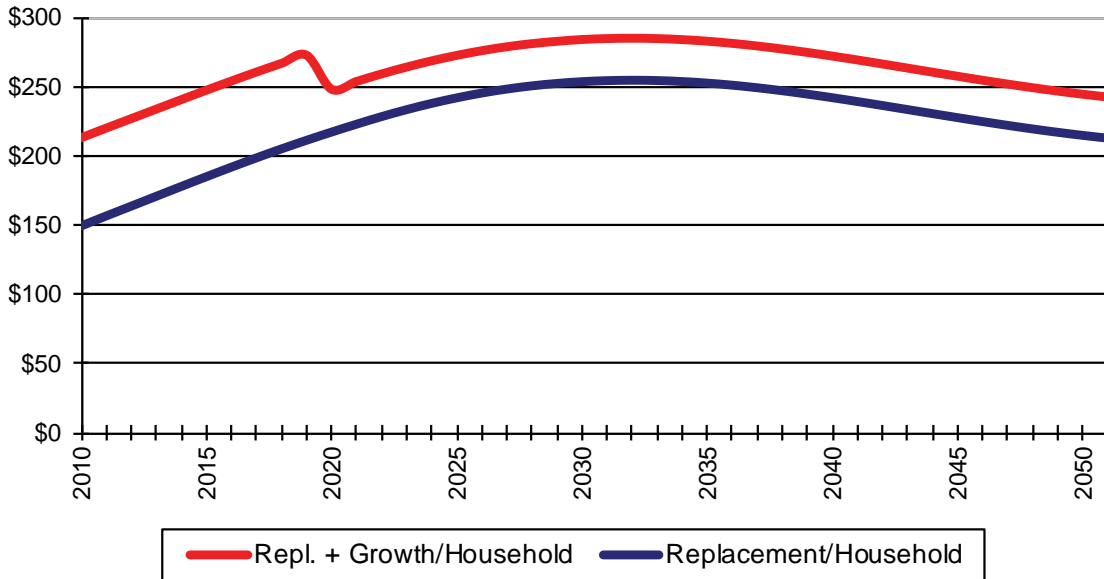
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Household Cost of Needed Investment for Replacement Plus Growth* Midwest Large



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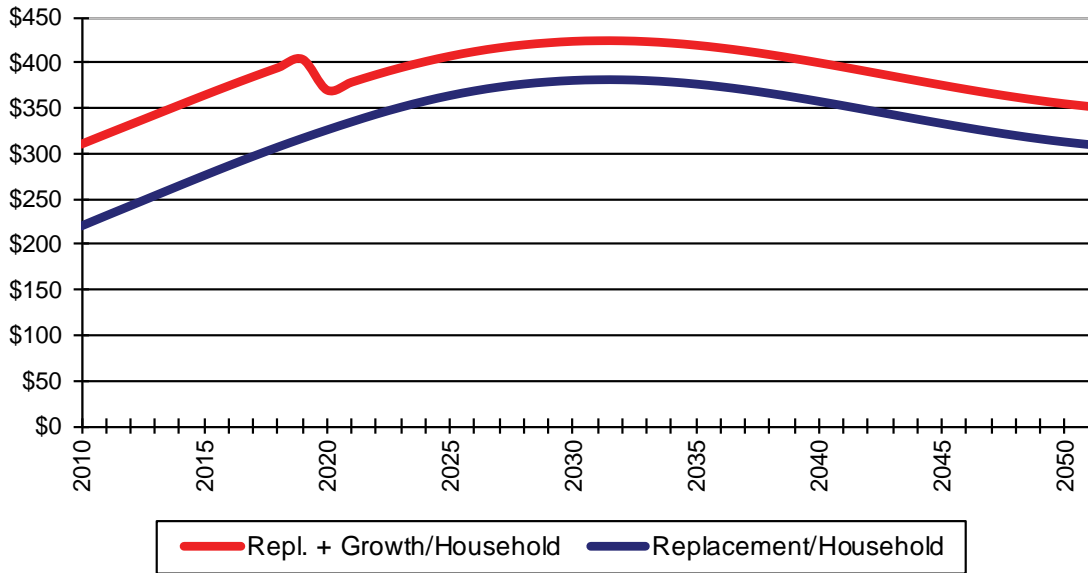
Household Cost of Needed Investment for Replacement Plus Growth* Midwest Medium



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

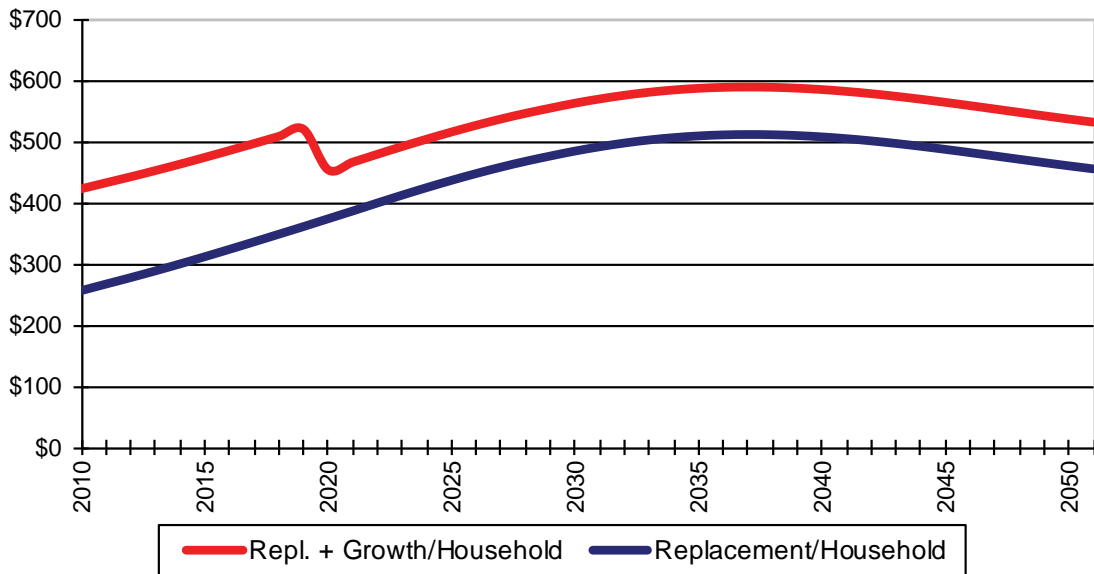
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Household Cost of Needed Investment for Replacement Plus Growth* Midwest Small



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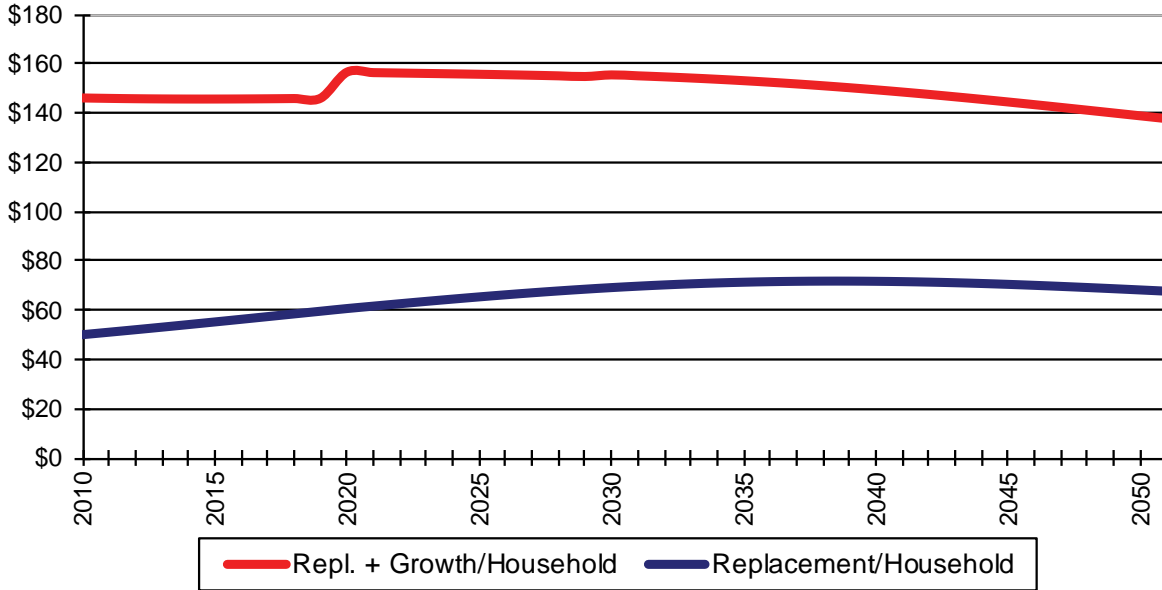
Household Cost of Needed Investment for Replacement Plus Growth* Midwest Very Small



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

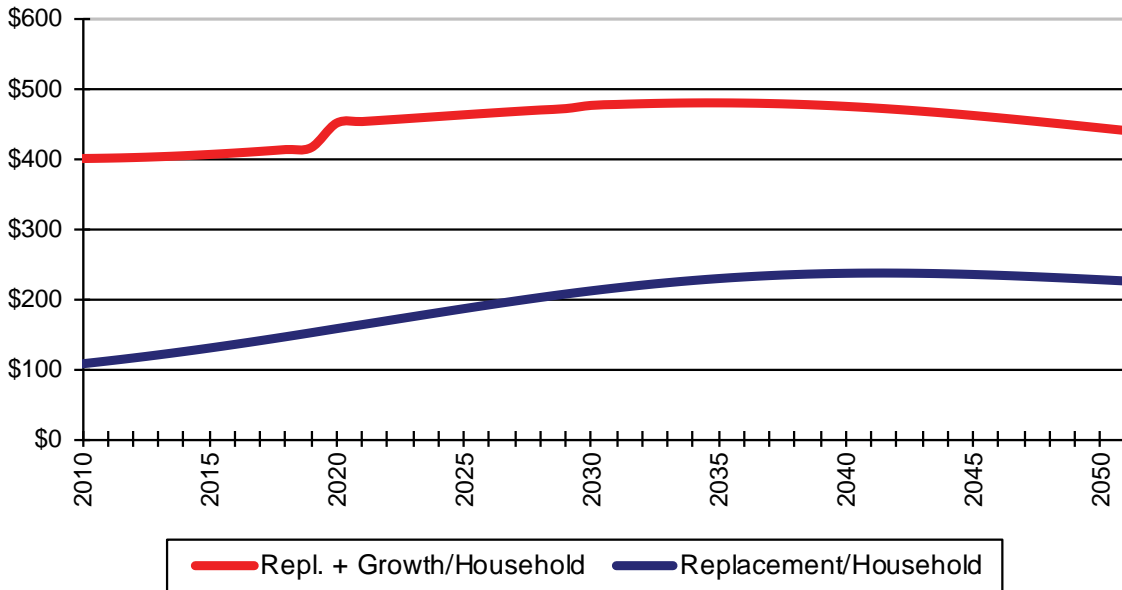
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Household Cost of Needed Investment for Replacement Plus Growth* South Large



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

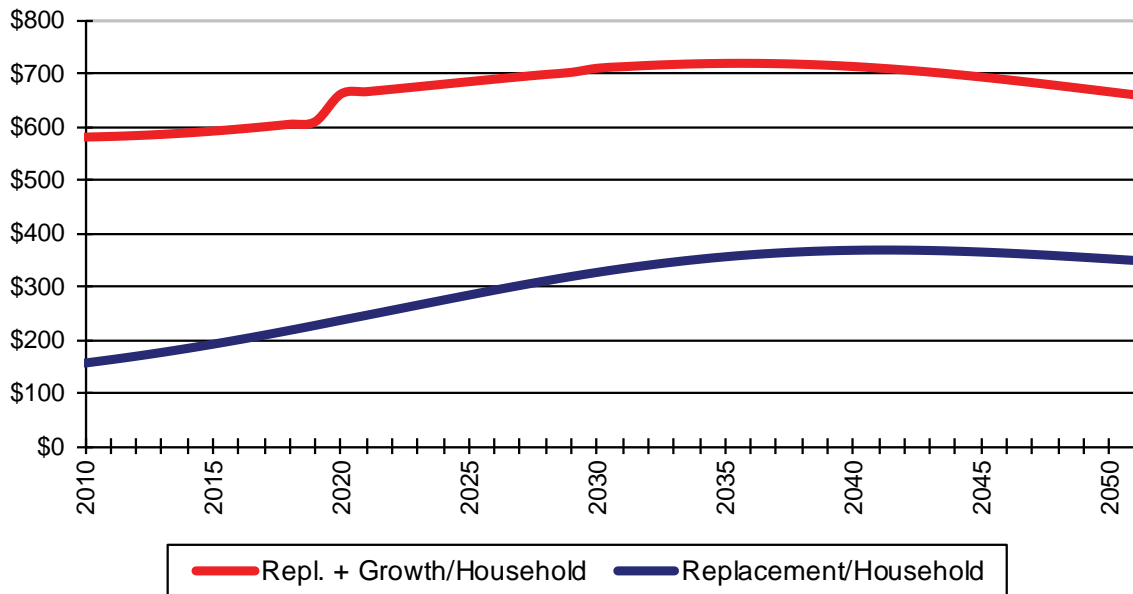
Household Cost of Needed Investment for Replacement Plus Growth* South Medium



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

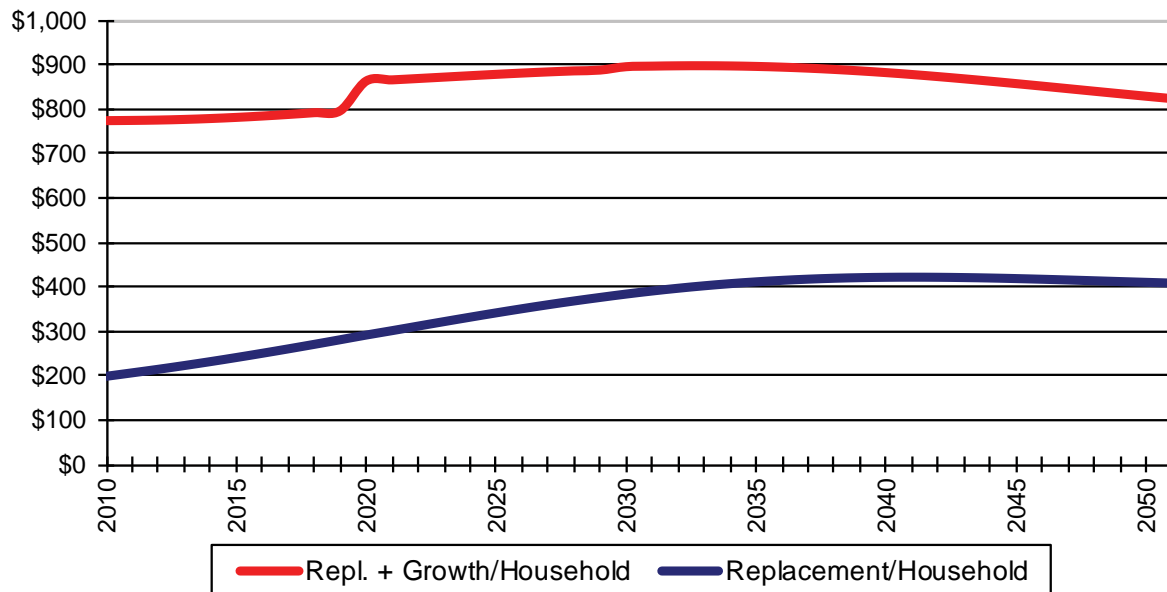
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Household Cost of Needed Investment for Replacement Plus Growth* South Small



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

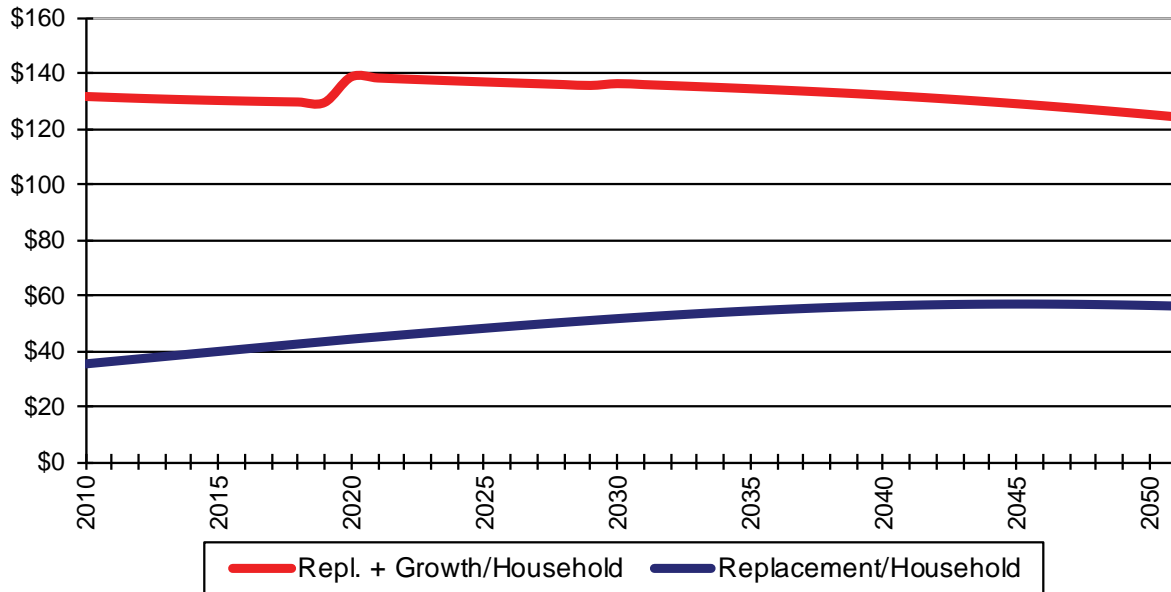
Household Cost of Needed Investment for Replacement Plus Growth* South Very Small



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

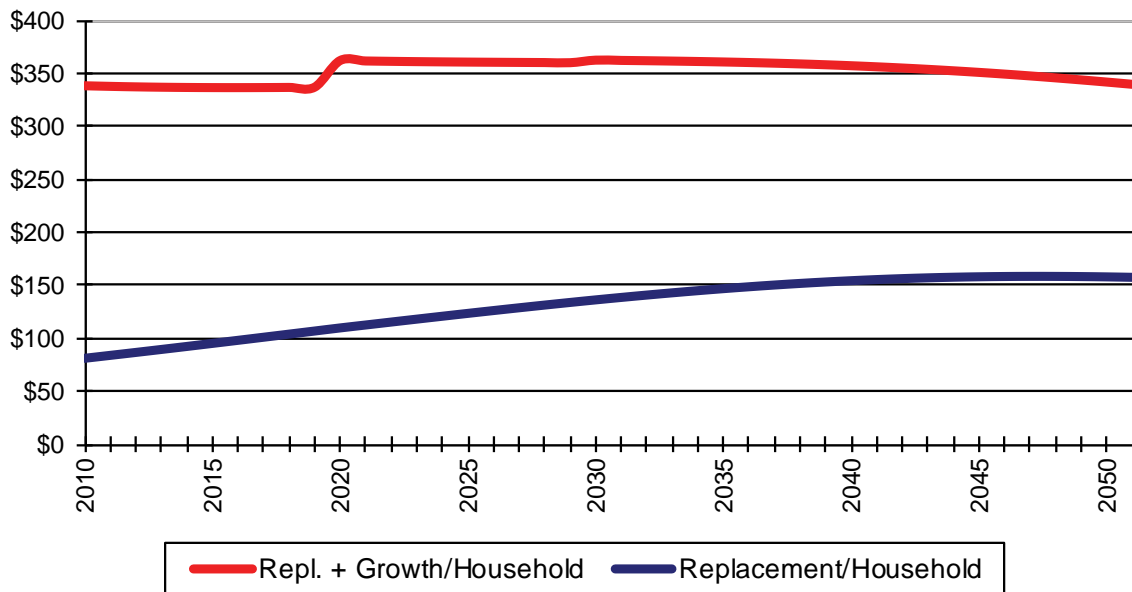
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Household Cost of Needed Investment for Replacement Plus Growth* West Large



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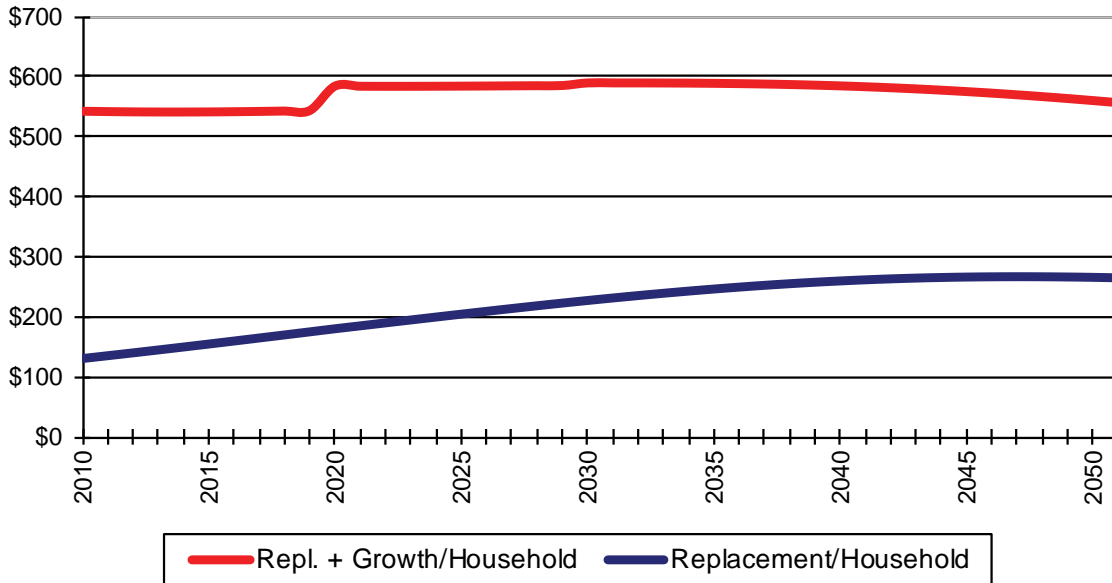
Household Cost of Needed Investment for Replacement Plus Growth* West Medium



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

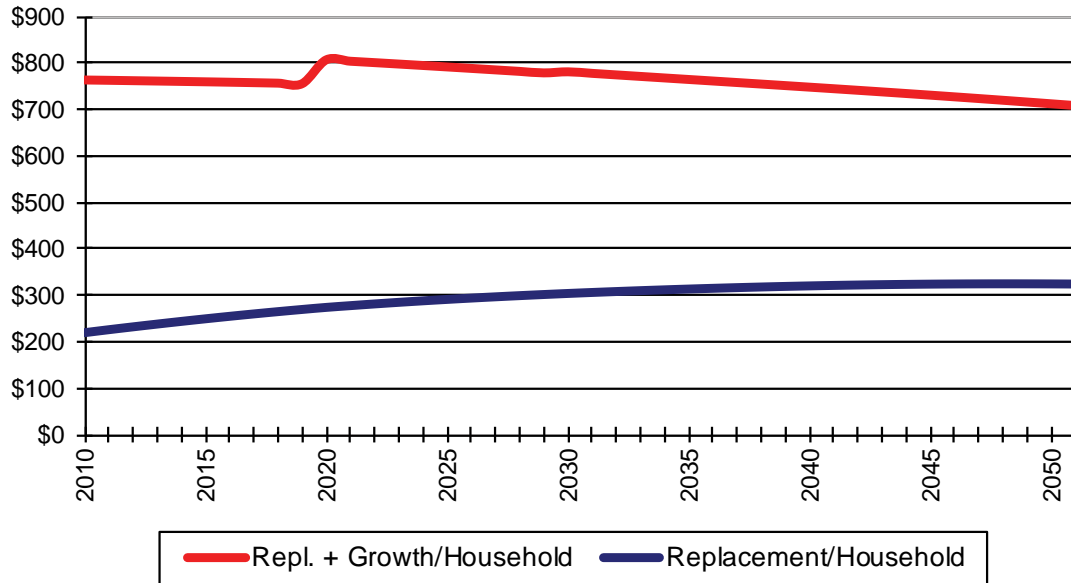
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Household Cost of Needed Investment for Replacement Plus Growth* West Small



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

Household Cost of Needed Investment for Replacement Plus Growth* West Very Small



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| HEW TOTAL REBATES | | |
|-------------------|----------|-------------------|
| YEAR | QUANTITY | NUMBER IN DOLLARS |
| 2008 | 53 | \$3,975.00 |
| 2009 | 59 | \$4,425.00 |
| 2010 | 21 | \$1,575.00 |
| 2011 | 54 | \$4,050.00 |
| 2012 | 9 | \$675.00 |
| TOTAL | 196 | \$14,700.00 |

*CUWCC WITH NCSD

| FY TOTALS | | |
|--------------|----------|-------------------|
| YEAR | QUANTITY | NUMBER IN DOLLARS |
| FY 2009-2010 | 78 | \$5,850.00 |
| FY 2010-2011 | 39 | \$2,925.00 |
| FY 2011-2012 | 26 | \$1,950.00 |
| | | |
| | | |
| | | |