The Business of the Day for cities continues to involve enforcement, policy development and rulemaking mandates on local water and sewer utilities. Recently the U.S. EPA decided to recommend closing a rulemaking without setting a national drinking water standard for perchlorate (a commercially produced chemical compound used in rocket propellants and other uses). EPA Administrator Andrew Wheeler announced that the recommendation to forego setting a national standard is science based. It also reflects the recommendations from the USCM the National League of Cities and the National Association of Counties. The action is now before the White House Office of Management and Budget for review, a necessary step before finalizing or modifying the decision.

The EPA is set to announce what they plan to do about the Guidance policy they use to determine how much citizens and cities must spend to comply with Clean Water Act (CWA) obligations. The EPA has taken a considerable amount of time to review the current Guidance from 1997 and a related Memorandum on the Financial Capability Assessment process. Organizations representing local government have complained about the inadequate level of transparency and consultation with cities and counties that are co-regulators and permittees with over 40 years of experience.

Why should the mayor be concerned? EPA uses Median Household Income to determine how much municipal permittees must spend to comply with the law. This policy has led to substantial and widespread financial burdens in the low and middle class income households. Rather than use the top-down approach of federal poverty indicators that are anachronisms at best, local government is urging EPA to start affordability assessments based on what it costs an individual or household to live in a community and calculate how much discretionary income is left over after all survival costs are accounted for that should have priority to be spent on federal unfunded mandates.

EPA’s enforcement actions over the last decade have resulted in consent decrees and administrative orders that create rate increases in communities that many households simply cannot afford. A recently released working paper on local government in the Great Lakes states indicates that the pre-Covid-19 state of local economies and spending on water and sewer utilities lags national levels of economic growth and utility spending. Based on that analysis it is overly optimistic to expect local governments in the region to keep up with national spending levels necessary to comply with federal unfunded mandates.

The Conference of Mayors (USCM) is engaged with Congressional Leadership on fiscal stimulus legislation that would authorize and appropriate direct funding to cities of all sizes to shore up local revenue losses related to state and federal Covid-19 emergency declarations. The latest House Majority bill called the Heroes Act would provide significant funding directly to cities and using that funding to replace local revenue losses is clearly eligible. Prior relief packages like the CARES Act provides relief funding and economic stabilization loans direct to a limited number of cities. Treasury has ruled that these funds cannot be used by utilities. This item needs to be addressed by Congress.
Cities Must Drive Community Values and Protect the Future of Their Communities: A Reflection on Water Pipe Replacement and Affordability and Selecting PVC for Longevity, Quality and Price.

By Gregory M. Baird

Researching water infrastructure stories across the US provides an understanding of the important decisions that community leaders have made to plan for their growing cities in the face of many economic, social, geographical and political challenges. In exploring the West Coast, we have California which is the most populous state and the third largest by area after Alaska and Texas and divided into 58 counties and 482 municipalities. The first municipality to incorporate was Sacramento in 1850, two years after the discovery of gold which also coincided with the end of the Mexican–American War.

CITY LEADERSHIP CAN MAKE A DIFFERENCE

California has had a history of local leaders planning for the future of their communities, not just for the largest cities, but of all sizes. Inclusive to this planning includes developing strong and resilient infrastructure systems. The United States Conference of Mayors named West Sacramento as the Most Livable City in America in 2014 in the category of cities with fewer than 100,000 residents.

West Sacramento (also known as West Sac) is separated from Sacramento by the Sacramento River. West Sacramento became a city in 1987 and at the time struggled with poor neighborhood areas bracketed by warehouses and industrial shops. The community had no downtown, no identity and no respect. The ambition and perseverance of local leaders believing they could make a difference to improve the life of their citizens has paid off ranking West Sacramento as one of the fastest rising median incomes since 2000 and among the fastest rising home values into 2019.

Elements of this success includes the focus on quality education for the youth connected to relevant jobs and career opportunities (Kids’ Home Run program). For the city, this focus on the future extends from the success of the workforce to the sustainability of the infrastructure. This is especially true for the water infrastructure.

The City incorporated and assumed ownership and responsibility for the operation of the water system from the East Yolo Community Services District, which had purchased the system in 1983 from the Washington Water and Light Company, a subsidiary of Citizens Utilities Company of California. Since its incorporation, the City has made major improvements, the most significant being the construction of a treatment plant in 1987-1988, and plant expansion in 2003-2004 which enabled the city to switch to surface water over groundwater.

The City of West Sacramento believes water conservation is a way of life. Through education, house calls, rebates and outreach, the city helped residents’ value this precious resource. West Sac continued to promote the value of water to its citizens, holding to the obligation to drive quality and pursue long-term water affordability. To do this they started gathering the needed data in GIS for their underground infrastructure which included approximately 190 miles of water pipe worth about $310M. 55 percent of the City’s distribution system is 8 inches in diameter or smaller, with 8 inches representing the most prevalent pipeline diameter. About 31 percent of the system is 10 inches to 12 inches in diameter, and 14 percent of the system is larger than 12 inches increasing to a 54-inch transmission pipe. Like most cities, the older sections of the community were initially built with cast iron and asbestos cement pipes which were contributing to the unaccounted water -nonrevenue water loss which has ranged between 13 and 18 percent.

WATER PIPE AFFORDABILITY AND SUSTAINABILITY

Tight budgets, fire flow pressure requirements, pipe capacity for growth and aging infrastructure has forced the city to find the most efficient water pipe renewal and replacement options like PVC pipe to provide a low initial cost, a low maintenance cost, and no hidden future corrosion costs with the added resiliency benefits of longevity in the face of potential climate change and seismic concerns.
National studies have demonstrated the longevity of PVC at over 100 years.

The Water Research Foundation funded a study published in 2005 titled “Long-Term Performance Predictions for PVC Pipes.” This report has a comprehensive review of methods to analyze the expected life of PVC pipe. They report that 100 years is a conservative estimate for a “properly designed and installed pipe.”

This long pipe performance combined with lower life cycle costs than ductile iron pipe, also helps meet both short-term and long-term affordability issues to help enhance the community’s ability to invest in other workforce and infrastructure areas.

Building a dynamic community means looking into the future- including their $71.3M water capital plan through FY65 and making the best decisions each year to protect the long-term water quality and sustainability of their distribution system. Like many municipalities and water utilities in the US, West Sac also takes into consideration their own experience and the national studies and trends. In the most widely accepted and downloaded water main break study in the world, “Water Main Break Rates In the USA and Canada: A Comprehensive Study” compares the break rates of the 2012 and 2018 surveys showing that PVC has the lowest main breaks which translates to lower maintenance and capital costs.

This life cycle cost approach can provide cities with the lowest total cost of ownership while meeting community service levels, now and into the future. By installing PVC pipe up to 36 inches in diameter and replacing the old iron and asbestos pipes, West Sac expects to be able to extend the life of their water distribution system, reduce their long-term capital plans and immediately reduce their non-revenue water loss.

PVC pipe also supports West Sac’s future environmental and sustainability goals. A NSF validated sustainability pipe study compared an 8-inch PVC pipe and ductile iron equivalent pipes at a functional length of 100 feet. This study, using a carbon cost charge comparison methodology to illustrate sustainability concerns, ranked PVC pipe lowest at $25 or $35 (depending on pressure class) compared to ductile iron pipe at $225.

As with many cities, it is the mission of the Public Works Department to deliver sustainable infrastructure and quality services that benefit the public and add value to their community. This includes taking into consideration many scenarios.

California faces many related risks such as earthquakes, wild-fires and drought. Cast iron (CI) pipes have the highest break rate in both liquefaction and non-liquefaction areas. Asbestos cement (AC) pipes are known to have moderate to high vulnerability, especially in liquefaction areas. Replacing CI and AC pipes with PVC helps reduce both corrosion failure and seismic risk. Underground PVC water pipes have also proven resilience and safe during wild-fire and drought events.

West Sacramento is an example of a city which accomplishes their mission with collaboration, integrity and a sense of pride, with an empowered workforce that is accountable, safe, and responsive. City leadership provides the ambitious framework to both protect and drive community values into the future while making infrastructure decisions which meet their community affordability expectations and sustainability goals.

Mr. Baird is an Executive Consultant and has served as a municipal finance officer in California and a CFO for Colorado’s third largest municipal water utility. He currently serves on many water industry committees and as President of the Water Finance Research Foundation.