

HDPE

High-Density Polyethylene

# Why Rapid City should approve HDPE

- HDPE is used in more cities in South Dakota than currently require copper piping.
- HDPE is a superior product that does not leach copper into the waste water treatment plant.
- Rapid City has several areas prone to “hot spots” that adversely effect copper pipe creating pin hole leaks and failing pipe.
- Rapid City residents are responsible for the maintenance of the pipe from the Main to the Curb stop. Why force them to install inferior product?

# ECONOMIC ADVANTAGES OF HDPE

- HDPE pipe systems offer economic advantages beginning with manufacturing and continuing through entire service life. Because HDPE pipe requires significantly less energy to manufacture compared to traditional water pipe materials, cost savings follow suit. The lightweight nature of HDPE pipe results in less fuel needed for transport, the need for fewer truck loads, less wear on North American roadways, and lower transportation costs in general.
- The same light weight characteristic offered by HDPE pipe also pays off in installation costs. Less weight means longer pipe lengths and less equipment needed to lift and move them during open trench installations. Further, trenchless installation techniques are commonly used for HDPE pipe applications. Practices such as horizontal directional drilling, slip lining, pipe bursting and other trenchless installation methods impose less ground disruption translating into fewer traffic interferences and repair work on North American roadways. All of these benefits translate into significant cost savings for local governments constantly searching for ways to get the most return for their investment.

# COPPER VS HDPE

- A study entitled *Life Cycle Analysis of Water Networks* conducted by CSIRO in 2008 concluded that when it comes to conventional pipe materials, “their relatively higher failure rate coupled with their higher leakage rates could result in significant maintenance costs and lost water costs over the lifetime of the pipe network. However, based upon available cost and failure data, polyethylene networks show significantly lower costs throughout their lifetime, and the combined benefits of low failure and water loss rates can potentially result in long-term cost savings.”
- Local officials must be offered the opportunity to move from “low bid” procurement strategies to an evaluation of life cycle costs as well as encouraged to utilize contemporary pipe materials that reduce overall life cycle expenses. Federal, state, and local policy should reflect that.

# RAPID CITY UNIQUE ENVIRONMENT?

- The known “hot spots” in Rapid City contribute to copper pipe failures.
- Rapid City residents are responsible for the Main to Curb pipe where copper is still required. (Unlike Sioux Falls where the city owns this segment and also cover any repair costs)
- Areas surrounding Rapid City allow HDPE

# WINTER (FREEZING) ENVIRONMENTAL ADVANTAGE

- HDPE pipe systems provide municipalities and other local communities with an alternative to traditional and more brittle piping that cannot endure outside force as effectively. Because of the joining technology, HDPE provides a highly leak-resistant pipe system that eliminates water loss and infiltration of contaminants and has an excellent performance record in shifting soils and earthquake-prone areas. HDPE also resists the effects of freezing and allows bending without the need for a high number of fittings. Because of its flexibility, HDPE can be installed with bends over uneven terrain easily in continuous lengths without additional welds or couplings. These same characteristics serve HDPE pipe systems well in case of land movement, whether over long periods of time or during natural disasters.

# As Rapid City's water and waste water systems age.....

- Rapid City's water and wastewater systems are aging and require significant improvements. At a time when our underground environmental infrastructure faces hundreds of billions of dollars in nationwide financing needs and a lack of resources to address them, municipalities and other local governments regularly make tough decisions regarding the best source of piping to put in the ground. High-density polyethylene (HDPE) pipe is increasingly used in municipal and industrial water and wastewater systems because it offers a sustainable, low-cost, leak-proof alternative to other piping. PPI encourages public policy at the federal, state and local level that provides for ample consideration of state-of-the-art materials such as HDPE for use in municipal water and wastewater infrastructure projects.
- Municipal water and wastewater officials strive to acquire the most sustainable, environmentally friendly piping at the most affordable cost. HDPE piping is gradually becoming known as the "greenest" pipe available to deliver drinking water to and remove wastewater from homes and businesses in the most cost-effective manner. HDPE provides LEAK- FREE piping in municipal and industrial applications due to the heat fusion joining process used during installation. Fusion joined HDPE provides a continuous system that is superior to other jointed piping materials that can present excessive sources of leaks at connections.

# How to Pay for Improvements?

- Rapid City is not unique in its need to replace aging infrastructure.
- The need to rebuild and/or replace this critical yet neglected underground infrastructure is unchallenged. While the problem continues to grow, the enduring debate over how to pay for these improvements rages on. Despite rising needs in every state, a lack of political will to make necessary investments remains.



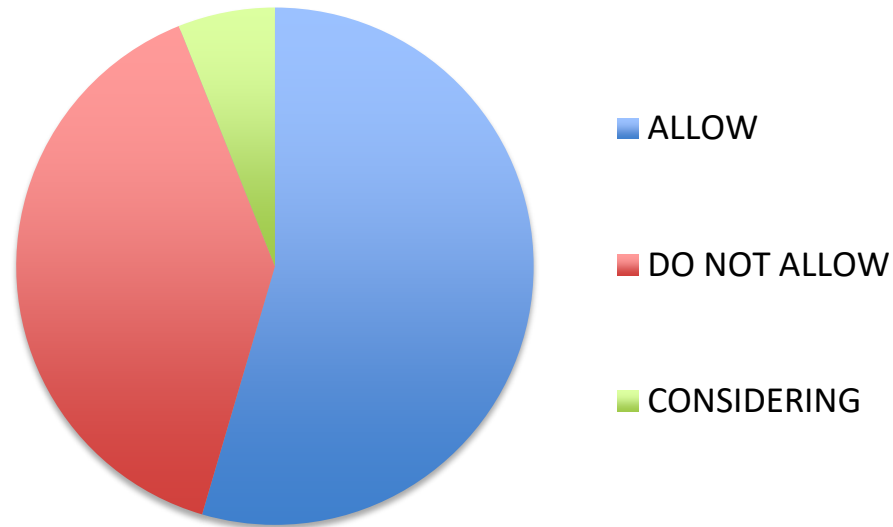
# Why add inferior infrastructure when a superior product is available now?

- When HDPE pipe is proven to have a longer longevity, why would inferior pipe continue to be used?
  - Copper pipe has a higher cost
  - Copper has a shorter life with corrosive characteristics.

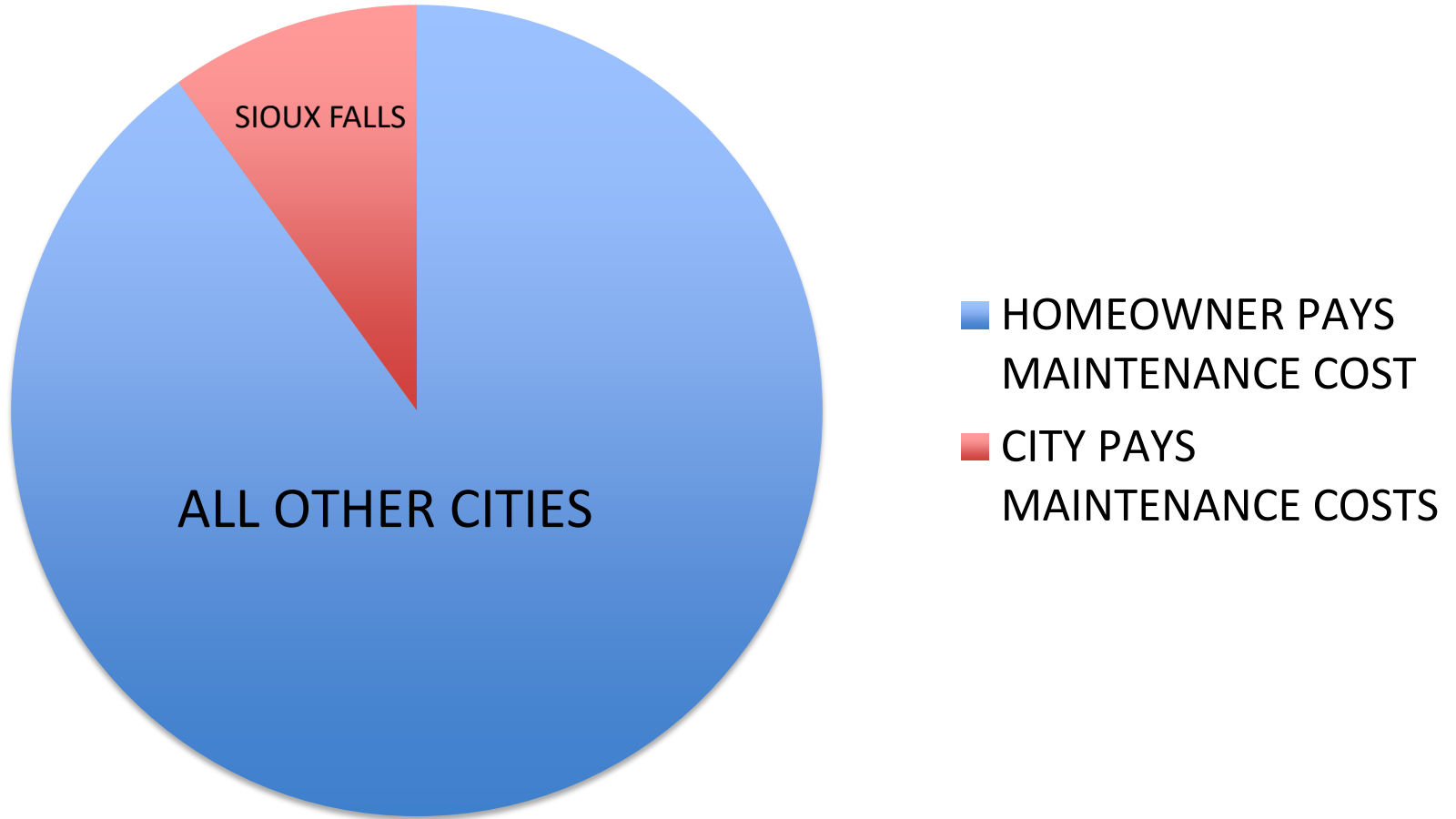
# IMPACT ON WATER TREATMENT FACILITIES

- Copper pipe has a corrosive characteristic and much of that is then processed through the Rapid City water treatment facilities.
- There is an additional cost and impact on the treatment facilities to address this issue.
- Rapid City may have lower costs in future treatment facilities if HDPE pipe is used vs the traditional copper.

# SOUTH DAKOTA MAJOR CITY BREAKDOWN



# WHO PAYS MAINTENANCE COSTS?



# RAPID VALLEY SAVES THOUSANDS WITH PROACTIVE REPAIRS WITH HDPE.

- Rapid Valley has considerably fewer water users than Rapid City.
- Rapid Valley has repaired leaking copper pipes and have saved \$4000 for ever 1,000,000 gallons of water saved.
  - This savings has allowed Rapid Valley to repair ROW water leaks at **NO EXPENSE** to the homeowner through their proactive on going maintenance.
  - Failing copper pipes are replaced with HDPE pipe at a lower cost to Rapid Valley than copper.

# UPC AND ANSI STANDARDS

***HDPE 4710 — ASTM D2239 and ASTM D2737 n Flexible polyethylene pipe and tubing AWWA C901***

*n Produced from only the finest virgin material n Backed by a **50-YEAR WARRANTY***

***CenCore HDPE is tested and certified to NSF Standard 14 and meets requirements of AWWA C901 ® § CenCore HDPE is certified to the Uniform Plumbing Code™***

Product also Certified to NSF/ANSI Standard 61, Annex G (weighted average lead content of  $\leq 0.25\%$ ) and is in compliance with California's Health & Safety Code Section 116875 (commonly known as AB1953).

*Product is Certified to NSF/ANSI 372 and conforms with the lead content requirements for "lead free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act.*