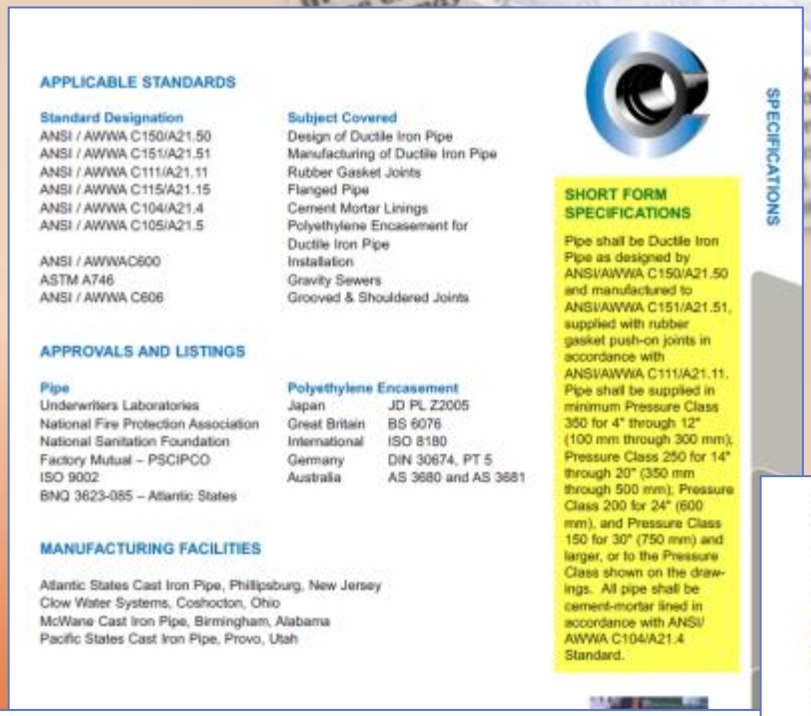
North Carolina and Ohio Pipe Costs Case Study

American Chemistry Council

Open Competition

Virtual Monopoly

How does Ohio's incumbent water pipe material maintain control of supply in certain markets?



APPLICABLE STANDARDS

Standard Designation	Subject Covered
ANSI / AWWA C150/A21.50	Design of Ductile Iron Pipe
ANSI / AWWA C151/A21.51	Manufacturing of Ductile Iron Pipe
ANSI / AWWA C111/A21.11	Rubber Gasket Joints
ANSI / AWWA C115/A21.15	Flanged Pipe
ANSI / AWWA C104/A21.4	Cement Mortar Linings
ANSI / AWWA C105/A21.5	Polyethylene Encasement for Ductile Iron Pipe
ANSI / AWWAC600	Installation
ASTM A746	Gravity Sewers
ANSI / AWWA C606	Grooved & Shouldered Joints

APPROVALS AND LISTINGS

Pipe	Polyethylene Encasement	
Underwriters Laboratories	Japan	JD PL Z2005
National Fire Protection Association	Great Britain	BS 6076
National Sanitation Foundation	International	ISO 8180
Factory Mutual – PSCIPCO	Germany	DIN 30674, PT 5
ISO 9002	Australia	AS 3680 and AS 3681
BNQ 3623-085 – Atlantic States		

MANUFACTURING FACILITIES

Atlantic States Cast Iron Pipe, Phillipsburg, New Jersey
Clow Water Systems, Coshocton, Ohio
McWane Cast Iron Pipe, Birmingham, Alabama
Pacific States Cast Iron Pipe, Provo, Utah

SHORT FORM SPECIFICATIONS

Pipe shall be Ductile Iron Pipe as designed by ANSI/AWWA C150/A21.50 and manufactured to ANSI/AWWA C151/A21.51, supplied with rubber gasket push-on joints in accordance with ANSI/AWWA C111/A21.11. Pipe shall be supplied in minimum Pressure Class 350 for 4" through 12" (100 mm through 300 mm); Pressure Class 250 for 14" through 20" (350 mm through 500 mm); Pressure Class 200 for 24" (600 mm), and Pressure Class 150 for 30" (750 mm) and larger, or to the Pressure Class shown on the drawings. All pipe shall be cement-mortar lined in accordance with ANSI/AWWA C104/A21.4 Standard.

SPECIFICATIONS

A. No broken, cracked, deformed, misshaped, imperfectly coated, or otherwise damaged or defective pipe or fittings shall be used. All such material shall be removed from the site of the work.

B. Unless otherwise shown on the Drawings or directed by the Engineer, the minimum pipe wall thickness and thickness class of pipe shall be as follows:

Pipe Size	Pressure Class	Metal Wall Thickness in Inches
3-Inch Ductile Iron	350	0.25
4-Inch Ductile Iron	350	0.25
6-Inch Ductile Iron	350	0.25
8-Inch Ductile Iron	350	0.25
10-Inch Ductile Iron	350	0.25
12-Inch Ductile Iron	350	0.26
14-Inch Ductile Iron	350	0.28
16-Inch Ductile Iron	250	0.28
18-Inch Ductile Iron	250	0.30
20-Inch Ductile Iron	250	0.31
24-Inch Ductile Iron	250	0.33
30-Inch Ductile Iron	250	
36-Inch Ductile Iron	250	
42-Inch Ductile Iron	250	
48-Inch D...	250	

802.03 Ductile Iron Pipe. Pipe shall be manufactured in accordance with AWWA C151 except as herein modified:

Wall Thickness and Class as follows:

All water pipe 4-inch or larger shall be Ductile Iron Special Thickness Class 52 manufactured in accordance with AWWA C151. All Ductile Iron pipe shall be push-on joint pipe internally lined with cement-mortar lining in accordance with AWWA C104.

All ductile iron water pipe shall have brass wedges installed at each slip seal bell joint for continuity to allow surface tracing by pipe locator. The number of wedges required for each joint shall be determined by using the following formula: Nominal pipe size divided by 2. (For example, a 4-inch pipe would require 2 brass wedges per push-on bell joint).

MATERIAL SPECIFICAT

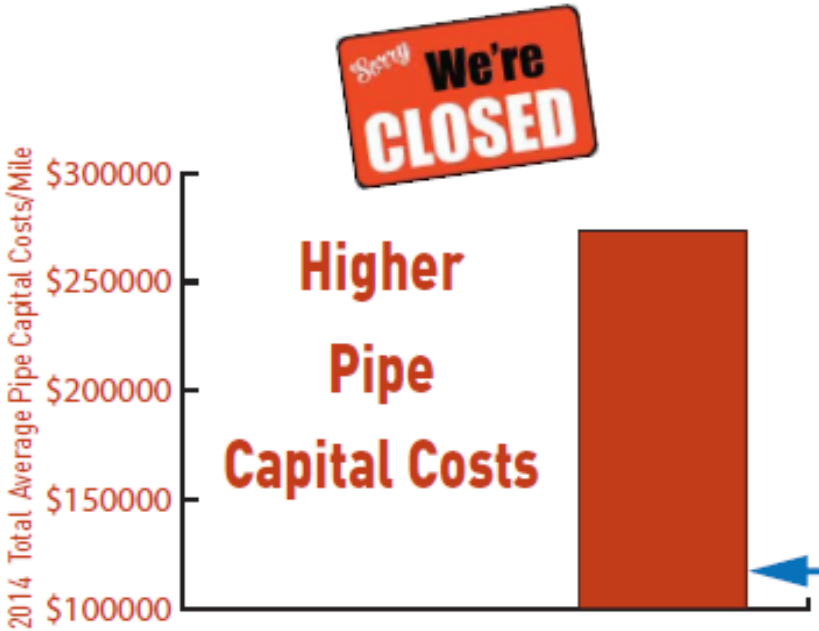
A. WATER MAIN SHALL BE AWWA C-151 DUCTILE IRON PIPE CLASS 52 FOR 4 INCH TO 16 INCH AND CLASS 54 FOR 20 INCH AND GREATER, WITH SLIP-ON JOINTS AND RUBBER GASKETS.

Virtual Pipe Monopoly Costs Ohio

Nearly $100,000 per Mile

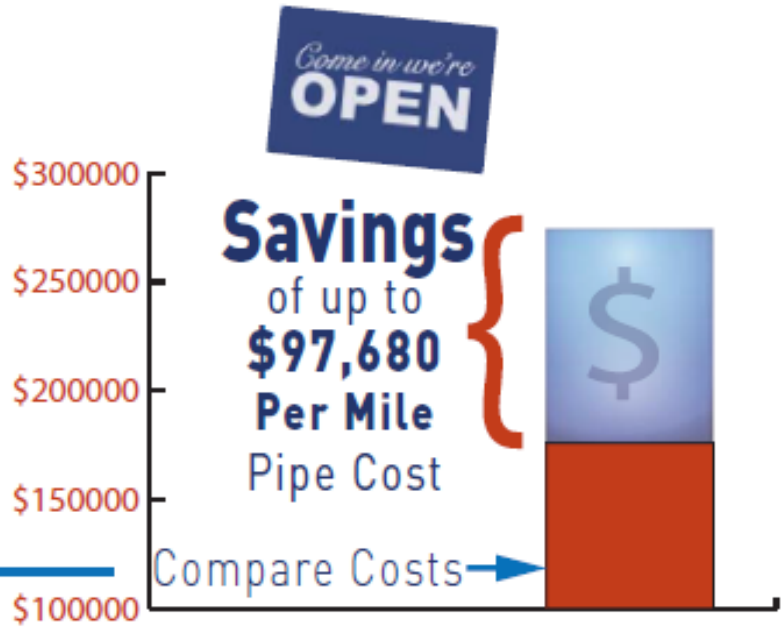
Closed Competition

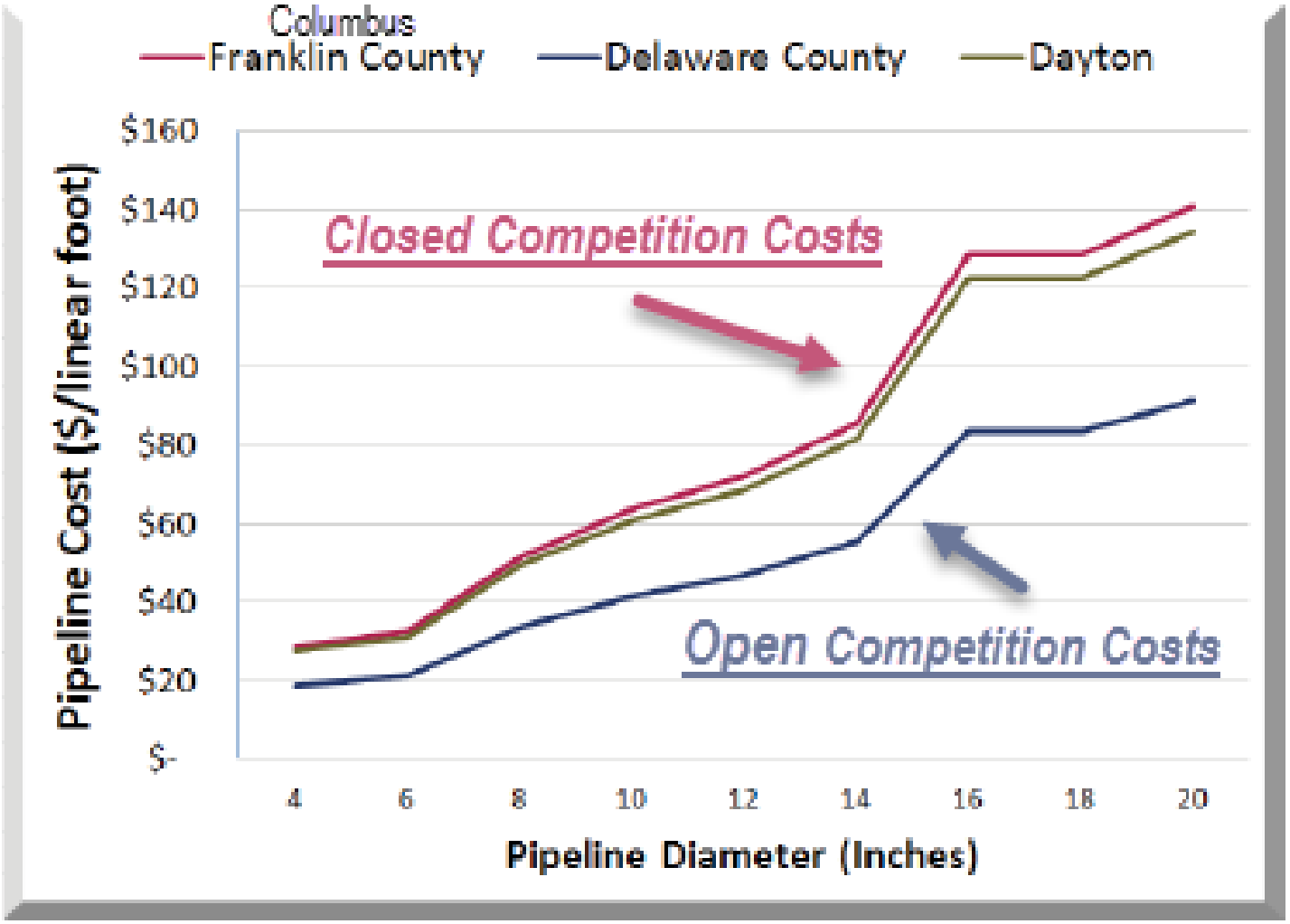
Franklin County, OH (Columbus)



Open Competition

Delaware County, OH





Estimated Pipeline Capital Costs by Pipeline Diameter, for Franklin County, OH (Columbus), Delaware County, and the City of Dayton.
Source: BCC Research

Virtual Pipe Monopoly Costs Ohio Nearly $100,000 per Mile

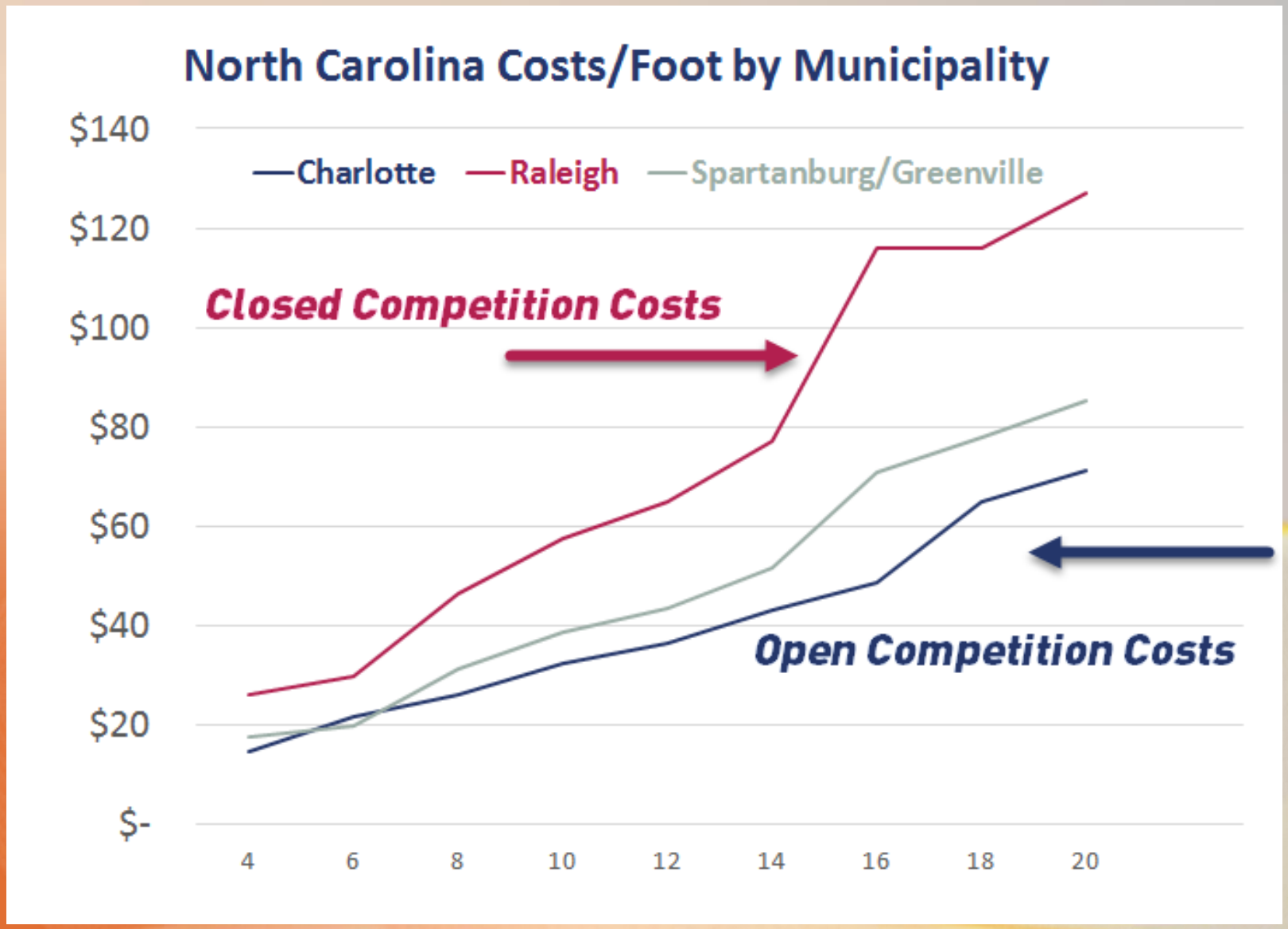
- OPEN COMPETITION Delaware County, OH, allows all materials that meet specifications to bid on a pipe project. It enjoys lower pipe capital costs on average. However, Franklin County mandates only one material for water supply pipe, granting a virtual monopoly **costing taxpayers an average of $97,680 per mile in additional pipe capital cost**.

- **Savings on average**, for pipe capital costs in OPEN COMPETITION Delaware County, OH **were 32% to 35%** compared to Franklin County, OH with a virtual pipe monopoly for one material, ductile iron.

Virtual Pipe Monopoly Costs Ohio Nearly $100,000 per Mile

- Even considering total pipeline construction costs, OPEN COMPETITION Delaware County, OH **saved 13.6%, on average**, compared to Franklin County, OH **on pipe projects**.
- Eight to 12” pipe in Franklin County, OH, which maintains a virtual monopoly, cost on average $51.83 per foot, but in OPEN COMPETITION Delaware County, OH it cost $33.33 per foot on average, a difference of $18.50 per foot, ***saving $97,680 per mile*** **in pipe capital costs alone**.
- **For every ten miles of pipeline**, OPEN COMPETITION could **save nearly *$1 million*** in pipe capital costs alone.

North Carolina Study Results TBP



NC Study To Show

- **Charlotte: $31.74/ft**
- **Raleigh at $56.50/ft**
- **Meaning: For Pipe Costs Alone**
  - $24.76 Difference Per Foot
  - **Over $120,000 per MILE Savings**
  - Or over $1.2 Million Every Ten Miles Saved

More Information

GreenBuildingSolutions.org/pipe