How Do We Know It’s Affordable?
Understanding Community Benefits & Integrated Planning

Scott Bernstein, Founder
Center for Neighborhood Technology at the
Integrated Planning Workshop
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Innovations laboratory for urban sustainability

Our goal is to advance urban sustainability and shared prosperity through initiatives in transportation, water, climate resilience, and public policy. We coach city leaders, advise decision makers, and find new ways to solve challenges, and we help communities capture the value of such investments.
This Presentation Will:

- **Distinguish** between public investments that are systems benefit versus community benefit oriented
- **Share lessons** from engagement in Flint and other economically challenged cities
- **Place the current choices** facing Ohio cities on water infrastructure in an integrated community benefits-producing context
- **Identify a set of emerging opportunities** in Ohio cities to support accelerated action
- **Frame up a discussion** for potential roles for cities, communities and others in pursuing such visions
How to Think About Public Investing—
System vs. Community Benefits Choices
Big Systems and Small Places—Two Views, How Incumbent Institutions That Manage “Infrastructure” Judge Their Performance

What we found in surveying State DOTs:
- More focus on community benefits
- System benefits

What we found in surveying local governments & MPOs:
- More focus on system benefits
- Community benefits
What If We Planned Like This? Aiming for Balanced Investment Outcomes

LIVABILITY

- Health
- Land & Resource Use
- Environment & Climate
- Resilience
- Accessibility & Walkability

ECONOMIC DEVELOPMENT

- Fiscal Impacts
- Development
- Long-term Jobs

COST EFFECTIVENESS & BENEFIT-COST

- Equity
- Value Capture
- Cost of Living

- Short-Term Jobs
- Travel Time & Costs
- Operational Costs
- Systems Accessibility

SYSTEM CONDITION AND PERFORMANCE

- System Conditions
- Connectivity
- Safety
FIX IT FIRST OR BUY SOMETHING BETTER?

“As governments, we’re on the hook to maintain core legacy infrastructure including roads, bridges, water, and sewers... But then there’s the infrastructure we’re turned on about... Mass transit, more complete streets, clean energy economy, broadband, smart grid and green infrastructure...”

- Oregon Governor John Kitzhaber, June 2012

RAISE WAGES OR CUT THE COST OF LIVING?

“I won’t live long enough to see the Memphis poverty rate cut from 27% to the southern average of 17% from workforce initiatives alone. We need to do what we can, together, to cut the cost of living”

Memphis Mayor A. C. Wharton, 2014
Lessons from Flint MI
CNT’s **Great Lakes Water Infrastructure Project** is working with Great Lakes communities to help them innovate on their water system needs to provide clean, affordable, and sustainable water.

Here are some takeaways from this work in Flint, Gary, Buffalo, Dearborn and Chicago.
The Problem

- Increasing cost of maintaining infrastructure
- Higher standards
- Climate change
- Low investment
Decreasing agency budgets lead to:

- Weak markets
- Fewer ratepayers
- Lower incomes
If costs for water and sewer services must go up in order to finance the billions of dollars of infrastructure investment needed, how do utilities ensure affordability throughout their service area?

Aging Infrastructure

Increased burden on families + businesses
Flint + CNT Partnership for Resilient Water Infrastructure

A series of conversations and a 3-day workshop with city staff and community leaders aimed at identifying strategic near, medium, and long-term action steps that further community and water affordability goals.
What Happened in Flint

The Problem

• City bankruptcy
• State assigns Emergency Manager
• To save costs, orders city to switch water source from Detroit to Flint River...a lead-poisoning machine
• Triggers citizen science, TA, organizing, leadership...

Leading to System + Community actions

• Lead service line replacement
• Health action supported by massive funder action
• “Coming clean” on the real cost of infrastructure
• Willingness to rethink public investment in a disinvested community
## Flint Community Context

**Smaller Population Paying for Water System**

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<tr>
<td>196,940</td>
<td>99,918</td>
<td>$25,650</td>
<td>42%</td>
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<tr>
<td>(197% of 2016)</td>
<td>(31,205 households)</td>
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<td>(59% of children)</td>
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Flint Community Context

Water Asset Management Funding Gap

Source: Arcadis “Draft Water Distribution System Optimization Plan,” March 2018
Flint Community Context

Your “Water” Bill today

We analyzed a quarter’s worth of actual monthly 2018 bills, not past due bills.
Not including relief credits, average bill is $110/month

Less than half of what you’re charged for goes to “water”
The rest goes to pay for hardware & maintenance aka “infrastructure”
How do we define affordability?

The sweet spot between Reducing Expenses and Increasing Incomes
EPA defines an affordable water and sewer bill as one that makes up no more than 4.5% of total monthly income.

The average Flint monthly water and sewer bill is $110; the annual monthly income is $2,138; the bill burden is 5%.

However, 25% of Flint residents make less than $15,000/year or $1,250/month; the bill burden grows to about 9%.

Neither calculation factors in the other critical monthly expenses that families pay for – transportation, housing, utilities.
How Do We Get to a Better Bill?

1. Improve rate payer assistance programs and customer service
2. Lower costs by developing residential energy & water efficiency programs
3. Engage Flint Institutions as partners in water system improvements
4. Invest in energy efficiency retrofits to Flint’s and Great Lakes Water Authority’s water systems
5. Catching raindrops where they fall and putting them to use with a rainwater harvesting program
6. Manage water and wastewater utility upgrades in a way that create, capture, and deliver community benefits in a streamlined way
1. Improve customer service and rate payer assistance programs

- Set annual goals for water affordability across the entire customer base
- Redefine assistance to include both relief credits and efficiency
- Make financial counseling widely available and geared to the goal
Example: Your Water Bill Tomorrow

- Modern meters-readable
- Bills that tell your story
- Help track progress
- Personalized info
- Provide direct access if extra financial help is needed
2. Develop and use residential energy & water efficiency programs

Market in combination with other affordability efforts
Includes retrofits and installation to achieve lower consumption of both water and of energy (natural gas and electricity) to lower bills
Marketed and managed as a one-stop shop partnership includes the City of Flint but operates as a separate non-profit organization

WaterSense® labeled homes are designed to use less water!

Efficient distribution systems get hot water to the tap fast so you save more time, water, and energy.
High-performing landscapes are low-maintenance and save water.

www.epa.gov/watersense/new_homes
3. Engage Flint institutions as partners in water system improvements

Flint’s largest institutions (GMC, Colleges, Hospitals, Huntington Bank, the City) are also its largest water users.

Engage them in the broad effort for water affordability.
4. Invest in energy efficiency retrofits to Flint’s & and to the Great Lakes Water Authority’s water systems

- Water and sewerage are among the highest energy users in the city, contributes to unnecessarily high costs reflected in your high rates.
- More efficient equipment is available, and the infrastructure can be redesigned and “right-sized” over time to lower the cost of expected infrastructure upgrades.
5. Implement a rainwater harvesting program

Flint receives 31 inches of rain and another 5 inches equivalent from snow annually, more water than is treated and pumped.

Substitute rainwater for purchased city water to save money at the system- and home-scales.

Rainwater is currently a waste product labeled “runoff” and contributes to the high load of sewage and increasingly to flooding.
6. A Streamlined Approach to Water and Community Affordability Service Delivery
The Need for Streamlined Affordability Services: The Current Unorganized Market
A Streamlined Approach to Water and Community Affordability Service Delivery

DEMAND
- Community Health
- Sense of Urgency
- Poverty
- Cost of Water/Sewer
- Climate Change
- Changing Policies

One Stop Service Delivery

IMPACT & BENEFITS
- Stabilized Treatment Costs
- Improved Tax Base
- Wealth Creation & Poverty Reduction
- Environmental Impact
- Improved community health outcomes

Service Customers (homeowners, businesses, etc.)

Service Providers (public investment, insurers, utilities, retrofit and install providers, etc.)
Thinking Ahead in Ohio
A Decade of Stale Incomes, Rising Costs

High, persistent and prevalent poverty

Cost of living exceeds growth in expenses

Standard approaches re subsidizing and raising income and providing supportive services, aren’t keeping up

So saving a dollar is worth as much as generating a new one and

Achieving both can start reducing poverty
Uses of Housing Affordability Indexes Based on Expenditure-to-Income Ratios

- Describe a typical household's housing expenditure
- Analyze trends, compare different household types
- Administer rules defining who can access housing subsidies
- Define housing need for public policy purposes
- Redefine housing affordability to include unbundled costs such as transportation, energy and water expenditures
- Predict ability of a household to pay the rent or mortgage
- Select households for a rental unit or mortgage
- Educate & market share information through counseling to shape affordability-seeking behavior
Provides easy access to affordability indexes for Housing, Transportation & H+T at all scales
Available for all counties, regions, cities, towns
Includes underlying data

http://htaindex.org
Columbus OH - Yellow indicates Affordable Places
Median Income HHs on Top, 80% of Median on Bottom
Uses H< 30% on Left &
H+T < 45% of Income on Right
Moving from Upper Left to Lower Right Drops the Number of
HH’s Living in Affordable Places by 179,952
H+T Index in Use Nationwide

- **California Strategic Growth Council**
  used to allocate $1 Billion of cap-and-trade proceeds for affordable housing near transit

- **HUD and DOT** are using to screen sustainable communities and TIGER grant applications

- **Metropolitan Planning Organizations**
  in Bay Area, Chicago, DC and elsewhere using to re-screen, prioritize Long Range Transportation Plan investments

- The new HUD fair housing screen uses transportation affordability and transit access

- **Location Efficient Mortgages**
  underwritten using T-cost savings in Minneapolis, Columbus, Oakland, Boston

- **Metropolitan Transportation Commission** in Bay Area used to justify helping capitalize **Transit-Oriented Development investment fund**

- **State of Illinois new act** requires five agencies to screen investments

- **City of El Paso, TX** now uses to **direct affordable housing** to areas of low transportation costs

- **Portland, others** using to help **create a typology of TODs** that takes affordability and equity into account

- **Experimental counseling tools**
  (Phoenix, East Bay, Chicago) link users with locally available resources – called Equity Express
Uses of USEPA Water and Sewer Affordability Guidelines

<table>
<thead>
<tr>
<th>Uses</th>
<th>Details</th>
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<tbody>
<tr>
<td>SCORE ASSESS SYSTEM/GOVERNMENT FINANCIAL CAPABILITY</td>
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<tr>
<td>PRICE SET TERMS FOR LOANS FROM REVOLVING LOAN FUNDS</td>
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<tr>
<td>DISCOUNT SUBSIDIZE FUNDS AWARDED FROM REVOLVING FUNDS</td>
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<tr>
<td>COUNSEL PROVIDE USERS/CUSTOMERS/HOUSEHOLDS INFORMATION ON THEIR</td>
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<tr>
<td>CONSUMPTION COMPARED TO BENCHMARKS</td>
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<tr>
<td>PLAN SET GOALS FOR AREAWIDE INCREASE IN AFFORDABILITY</td>
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<tr>
<td>RESTRUCTURE DETERMINE OPTIONS FOR OFFERING SERVICE IN WAYS THAT</td>
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<tr>
<td>REDUCE SYSTEMS COST</td>
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The Desired Index...

- Should address not only "lower-moderate" income households, but poverty households too.
- Needs to account for variation by household type.
- Needs to avoid double-counting.
- Use the HUD location affordability portal.
- Should realistically account for "residual" or "disposable" income available after fixed costs, such as for housing and transportation.
- Demonstrated here using City of Columbus OH and adjusted for household size using AWWA 2017 factors.
Location
Affordability

Showing MHI HH
Combined H+T
Affordability

Prepared for HUD & DOT

Analyzes larger range of household types

Residual income = MHI minus H+T = $31,138

Avg bill = $1,272/Year = 4.1% of Residual Income
Location Affordability

Showing 80% of AMI 3-person HH
28% for H and 17% for T
46% Average H+T
Residual = $23,599

Average bill = $1,145
= 4.8% of Residual
Location
Affordability

Showing 50% of AMI
Single-Parent, 3-Person HH
66% for H+T
Avg. bill = $973

Residual = $9,206
=10.6% of Residual
Location
Affordability

Very Low-Income individual, 20% of AMI

107% of Income for H+T

Residual Income = minus $820

Average bill = $890/year = 109% of Residual Income
Memphis Poverty Reduction Plan—Achieving the Right Commitments Results in a More Efficient & Prosperous Memphis That Works for Everyone

**Change**
- **Jobs**—Planning for regional growth capture, supporting entrepreneurship
- **Expenses**—Energy and water efficiency, transportation, sustainable & financial education
- **Access**
- **Opportunities**—Job training, safety net, justice reform, program delivery

**Results**
- **5,680 Jobs**
- **$218 m anti-poverty benefits**
  - $184 m wages
  - $32 m cost of living savings
  - $2+ m prosperity fund
- **$170 m savings** for non-poverty households
- **$16 m business savings**

**Benefits**
- Competitive
- Resilience
- Public safety
- Livability
- Congestion relief
- Air quality
- Climate impact
- Resource efficiency
- Affordability
Where Columbus’s Poorer Households Live...

Showing household income on top & poverty on bottom map

21% of people or 177,000 are below the poverty line

Largest number of any city in Ohio
Columbus’s 21% Poverty Rate = 177,000 persons—A Sample Plan to Reduce that by 73,000 or 42% with $510 Million community benefits commitment lowering the poverty rate to 12%—an amount < 1/3 of 1% of this MSA’s Gross Metropolitan Product.

In this benefit illustration half is new income from workforce development and job creation.

Or a new, no-regrets scenario in which accelerated livability investments with a larger fraction devoted to cost-of-living reduction.
Example — Green Infrastructure Jobs — Complement Storm Sewers with Tree Cover and Permeable Landscape

- Catching raindrops where they fall
- 90% flood reduction

- Memphis will adopt a Green Infrastructure Portfolio Standard with long range goals and annual projects

- Work with Sustainability Office and Public Works, TN Dept. of Environment & Conservation, USEPA, Greenprint, SC2

- Launch a coordinated strategy to get to scale quickly
Sample Strategy—Increase Transit Frequency

• With a score of 8.7/10, Newark ranks 10th in performance nationally, just behind Portland and Philadelphia yet only 68th in population.

• By increasing total system frequency on principle lines, wait times are reduced, ridership increases, cost of living drops while business patronage soars, and poverty decreases.
## Examples of Investing That Lowers Costs + Raise Wages + Reduces Poverty

<table>
<thead>
<tr>
<th>Expenses</th>
<th>Solutions</th>
<th>Aided by</th>
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<tbody>
<tr>
<td>• Housing</td>
<td>• Sharing, Preserving, Adding (e.g. ADUs)</td>
<td>• Community Benefits Agreements</td>
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<tr>
<td>• Transportation</td>
<td>• Local convenience + regional access</td>
<td>• Improved regional plans</td>
</tr>
<tr>
<td>• Water</td>
<td>• Discount fares, increase frequency and routes</td>
<td>• Community Partnerships</td>
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<tr>
<td>• Energy</td>
<td>• Progressive rates &amp; bills, water efficiency, rainwater harvesting, green infrastructure</td>
<td>• Improved policies</td>
</tr>
<tr>
<td></td>
<td>• Progressive rates &amp; bills, home retrofits, community energy</td>
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Emergent Opportunities In Ohio to Secure Both System and User Strategy & Financing

State Revolving Loan Funds for Clean Water and Safe Drinking Water & Freshwater

Energy Efficiency Funds for Household Assistance from Utilities and State

USEPA Integrated Water Planning

Proposed Renewal of DOE EECBG Block Grant

New GAAP Accounting Rules Support Distributed + Partner Approaches to Services

Existing & Pending Commitments in Ohio to Infrastructure Planning & Renewal

Use Funding Flexibility Where It Exists—EG, RLFs and Metro Planning Orgs
Thank you!
Learn more at cnt.org/great-lakes-water-infrastructure
Reach out with questions:
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