## Lakewood By the Numbers

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents</td>
<td>50,866</td>
</tr>
<tr>
<td>Structures</td>
<td>17,000</td>
</tr>
<tr>
<td>Square miles</td>
<td>5.6</td>
</tr>
<tr>
<td>Structures per sq. mile</td>
<td>3,000</td>
</tr>
<tr>
<td>Miles of Sidewalks</td>
<td>180</td>
</tr>
<tr>
<td>Miles of sidewalk assessed and repaired since 2013</td>
<td>85</td>
</tr>
<tr>
<td>Miles of roads</td>
<td>92</td>
</tr>
<tr>
<td>Miles of sewers built 1910-1930</td>
<td>160</td>
</tr>
<tr>
<td>Houses built by 1920 pre-WWII community</td>
<td>50%</td>
</tr>
<tr>
<td>Housing units</td>
<td>30,000</td>
</tr>
<tr>
<td>Median housing value</td>
<td>$152,000</td>
</tr>
<tr>
<td>Largest Ohio city</td>
<td>15th</td>
</tr>
<tr>
<td>Population in the Millennial generation</td>
<td>31%</td>
</tr>
<tr>
<td>Employers</td>
<td>4,300</td>
</tr>
<tr>
<td>Largest workforce in Ohio with more than 29,000</td>
<td>10th</td>
</tr>
<tr>
<td>Median household income 2017 ACS</td>
<td>$47,000</td>
</tr>
<tr>
<td>Unemployment</td>
<td>3.7%</td>
</tr>
<tr>
<td>Poverty rate</td>
<td>14.4%</td>
</tr>
<tr>
<td>#125 of 19,300 cities in US for population density</td>
<td>Ranked</td>
</tr>
<tr>
<td>Residents per sq. mile</td>
<td>9,285</td>
</tr>
<tr>
<td>Residential units owner-occupied, 55% rental</td>
<td></td>
</tr>
</tbody>
</table>
Status of regulatory enforcement:

NPDES Permit and administrative orders from USEPA
Lakewood’s Unique “System”

- Not built as a system
- Amalgamation of many subsystems
- Built in a pre-WWI environment
- Public health via control of odors and dilution was primary objective—environmentalism came later
- The “system” performs as designed
Mostly sewered by 1915 without any treatment plant.
1933 Forest Cliff- Filter Bed - End of Street before direct discharge
Logistical Challenges

▪ Lakewood has 17,000 structures, almost 28,000 housing units, 54% of which are rental (16,000 rental units), and 51,000 people in its 5.6 square miles

▪ Lakewood ranks #125 of 19,300 municipal entities in the US in terms of pop/sq. mile

▪ Totally built-out by 1939

▪ The sewer infrastructure was built in phases over 40 years, and never designed as a system

▪ It functions very well as designed (today, over 90%+ of pollutants captured and treated in typical year; 95%+ by 2033)
Affordability Challenges

- Lakewood’s median income is approximately $49,000—less than the state’s median.
- Our bottom 20% of households pay more than 2% of MHI on sewer infrastructure.
- By 2026, the second quintile will exceed the 2% threshold.
- 30% of our almost 30,000 households are at or close to the poverty level.
Lakewood’s Unique Circumstances Require Flexibility

- Flexibility is the key for collection system and private property renewal for 21st century
  - Flexible to be very sensitive to affordability pressures
  - Flexible to capitalize on emerging technologies
  - Flexible to recognize expected and unexpected consequences of incremental changes to the “system”
  - Flexible to capitalize on land use changes
Council approved water rate increase of 5.5% per year and wastewater rate increase of 10.0% per year through 2023.
Proven Progress

- $60 Million Investment in the Past 10 Years
  - Expanded the collection system
  - Expanded the waste water treatment system
  - Pilot Project: public & private property source control

- $23M HRT at WWTP for CSO-002 to go online in 2022

- Construction of the aerial sewer in 2016 eliminated 3.5 million gallons of CSO to the Rocky River
Continuing to explore options: source control pilot study (public and 100 private properties)
Lakewood’s hydraulic & hydrologic model used to simulate system response during design and observed storms

- Multi-year investigation and monitoring of unique collection system
- Detailed “All-Pipes” model
- Pollutant tracking in collection and storm systems from private property (parcel–level) to each overflow point
Typical Year Percent Capture of Sewage CBOD

- Existing: 93.7%
- Existing + HRT: 94.1%
- Integrated Plan through 2034: 97.5%
Extensive Public Engagement

- Clean Water Lakewood Task Force engaged in 2015

2018 Events

- Task Force Workshops
- Clean Water Workshop
- Clean Water Open House

Our combined attendance for the four 2018 events was over 230!
Lakewood’s IWWIP Strikes the Balance

- IWWIP ensures capital expenditures will get biggest bang for the buck for environmental improvement.
- IWWIP provides detailed path forward to measure progress, where five-year permit cycles are charted with confidence.
- Implementation via Ohio EPA NPDES permits provides the necessary flexibility to prudently Adaptively Manage this program.
Green Infrastructure is “baked into our 2\textsuperscript{nd} century redevelopment”
$22k
$50k
$100k

Source Control
Green Infr.
Gray Infr.

+ 

24,500 households
Integrated Plan
$177 million

Rehab and renewal of existing sewer infrastructure
$162 million

97.5% sewage CBOD captured
Integrated Planning in Action: Lake Avenue Resurfacing Project

$2 million in 2018 and $6 million in 2019 combining:

water main replacement, storm sewer construction to reduce CSOs and 2.7 miles of road resurfacing
Lakewood under IWWIP will invest an additional $75 million+ in next three permit cycles to remove 95%+ of CBOD from discharges
Sustaining progress in Lakewood via Ohio EPA oversight under its NPDES permit

- The existing approach to Lakewood's regulatory enforcement has been through the NPDES permit
  - Lakewood has demonstrated significant commitment, investment, and progress towards compliance with the CWA (under permit and voluntarily).
  - Lakewood’s IWWIP is a very detailed Integrated Plan based on extensive analysis and public engagement to chart sustained improvement and compliance.
Ohio EPA Integrated Planning Workshop for Mayors
Mayor Michael P. Summers
October 2, 2019