Street Surface Infrastructure Management

- Surface Components include:
  - Streets
  - Sidewalks
  - Curbs
Street Surface Age

- We manage our Streets, Sidewalks, and Curbs based on age and condition of the asset.
- By knowing the age of the asset, such as our streets, we can project its useful lifetime, and use this info to plan our maintenance activities.
Street Surface Age Map

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Street Surface Age Map

- Streets grouped by 10 year age ranges
  - Yellow 0-10
  - Orange 10-20
  - Red 20-30
  - Purple 30+
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Street Infrastructure Components

- Asphalt and Concrete Streets
- Sidewalks
- Curbs

Pinehurst

Micro-surfacing

Ayersville

Paving

Corwin

ADA Ramps

ADA Curb access

Meadowbrook
Pavement Preservation Techniques

Treatment Options:

- **Crack Seal ($7,800 / Mi)**
- Mastic Surface Treatment ($21,000 / Mi) 5yr life
- Chip Seal ($23,000 / Mi) 5yr life
- Microsurfacing ($35,000 / Mi) 10yr life
- Cape Seal ($60,000 / Mi)
- Sami (Fiber Mat w/ chip seal: $52,800 / Mi)
- HMA (Hot mix asphalt: 1 1/2” $130,000 / Mi) 20yr life
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• **Sami (Stress Absorbing inner layer: $153,000 / Mi)**
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Pavement Rehabilitation

Options:

• FDR Full Depth Reclamation ($500,000/Mi.)

• Rehabilitation ($1,585,000/Mi.)
Street Resurfacing Requirements

- 127.9 Mi. of city streets
- 95.3 Mi. 100% city responsibility
- 30 Mi. Private or shared responsibility

- Resurfacing Program Requirements:
  (based on 95.3Mi @ 20 yr life, to maintain current status quo)
  - Need to resurface 4 Mi. of streets/yr.
  - Need to Micro-surf 2.4 Mi. of streets /yr.

- Required Budget $854,000
  (does not include extensive curb or street rehabilitation)

- Currently funding around $350,000
Street Resurfacing Requirements

- 127.9 Mi. of city streets
- 95.3 Mi. 100% city responsibility
- 30 Mi. Private or shared responsibility

- **Currently 30.1 Mi. backlog** of streets to resurface. (based on approx. 20 yr. paving life)

- Our Backlog is Projected to grow an additional 25.8Mi. over the next 5 years. This growth can be limited to 9.8Mi., or 39.9Mi. total backlog, if we follow our 4Mi./yr. Resurfacing & 2.4Mi./yr. microsurfacing schedule.
Street Rehabilitation Requirements

- 127.9 Mi. of city streets
- 95.3 Mi. 100% city responsibility
- 30 Mi. Private or shared responsibility

- Current projected rate of rehabilitation
  2.7 Mi. of streets per decade (based on decade of 2000-2010)

- Required Budget $429,000

- Current planned funding $0
Streets with Curbs

- 127.9 Mi. of city streets
- 95.3 Mi. 100% city responsibility
- 30 Mi. Private or shared responsibility
- 44.7 Mi. of streets have curbs
  (not including state routes or private streets)

- Total Assets cost: $21,713,472 (50% @ $55/LF and 50% @ $35/LF cost, remove and replace curb on both sides of the street.)
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Curb & Gutter removal and replacement - Fairlawn St.

Curb & Sidewalk removal and replacement - Arabella St.
Exist. Curb Types & Failures

Existing Roll Curb & Gutter
- Defiance Crossing
- Type 3

Existing Standing Curb & Gutter
- Precision Way
- Subgrade failure

Age deterioration
- Sunset Dr.

 Pontiac Dr.
Exist. Curb Types & Failures

Existing Straight Curb

- Perry
- Wilhelm

Age deterioration

Wilhelm Molded Asphalt

Concrete Parking Blk

Sandstone

Wood Ties

Wilhelm Wood Ties

Perry Sandstone Concrete Parking Blk
Streets with Curbs

- 127.9 Mi. of city streets
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- 30 Mi. Private or shared responsibility

- Currently in the process of surveying the curb condition for all curbed city streets.
- 35-50 yrs expected curb life.
## Streets with Curbs

- **Summary:** Age & deterioration percent

<table>
<thead>
<tr>
<th>Street Name</th>
<th>Pct Def</th>
<th>LF Curb</th>
<th>#Pcs</th>
<th>rplcd</th>
<th>#Def</th>
<th>Cracks</th>
<th>Chips</th>
<th>Jt. Spawl</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 5 yrs Defiance Crossing</td>
<td>3%</td>
<td>3634</td>
<td>352</td>
<td>0</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>2005 10 yrs Maumee Rvr. Crsg</td>
<td>5%</td>
<td>7100</td>
<td>687</td>
<td>0</td>
<td>33</td>
<td>23</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>2000 15 yrs Burning Tree</td>
<td>8%</td>
<td>3572</td>
<td>370</td>
<td>0</td>
<td>30</td>
<td>10</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>1995 20 yrs Inverness</td>
<td>8%</td>
<td>1704</td>
<td>170</td>
<td>0</td>
<td>15</td>
<td>1</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>1990 25 yrs Edgewood</td>
<td>10%</td>
<td>1274</td>
<td>123</td>
<td>3</td>
<td>9</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>1985 30 yrs Precision Way</td>
<td>29%</td>
<td>5374</td>
<td>520</td>
<td>32</td>
<td>119</td>
<td>10</td>
<td>36</td>
<td>73</td>
</tr>
<tr>
<td>1975 40 yrs Wilson St</td>
<td>49%</td>
<td>4468</td>
<td>447</td>
<td>41</td>
<td>176</td>
<td>24</td>
<td>13</td>
<td>129</td>
</tr>
<tr>
<td>1965 50 yrs Northwood</td>
<td>48%</td>
<td>2660</td>
<td>266</td>
<td>46</td>
<td>81</td>
<td>22</td>
<td>16</td>
<td>43</td>
</tr>
</tbody>
</table>
Streets with Curbs

- 127.9 Mi. of city streets
- 95.3 Mi. 100% city responsibility
- 30 Mi. Private or shared responsibility

Budget Cost:

75 yr. life expectancy
50% C&G 44.7 Mi @ $55/LF= $173,078
50% straight curb 44.7 Mi @ $35/LF = $116,435

total = **$289,513/yr.**

- We should be replacing .3 centerline Mi. of street per year.
- Currently asking for $21,000/yr., budgeting $0.
Streets with Deteriorated Curbs

- Streets with Known Curb and Gutter deterioration:
  
<table>
<thead>
<tr>
<th>Street</th>
<th>Year</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pinehusrt</td>
<td>1976</td>
<td>40yrs</td>
</tr>
<tr>
<td>Woodhurst</td>
<td>1973</td>
<td>43</td>
</tr>
<tr>
<td>Ruth Ann</td>
<td>1971</td>
<td>45</td>
</tr>
<tr>
<td>Edgewood</td>
<td>1967</td>
<td>49</td>
</tr>
<tr>
<td>Sunset</td>
<td>1965</td>
<td>51</td>
</tr>
<tr>
<td>Terrawanda Dr. S</td>
<td>1964</td>
<td>52</td>
</tr>
<tr>
<td>Terrawanda Dr. N</td>
<td>1956</td>
<td>60</td>
</tr>
<tr>
<td>Elliott Lane</td>
<td>1957</td>
<td>59</td>
</tr>
<tr>
<td>Northwood</td>
<td>1965</td>
<td>51</td>
</tr>
<tr>
<td>Wilson</td>
<td>1975</td>
<td>41</td>
</tr>
<tr>
<td>Ralvan</td>
<td>1964</td>
<td>52</td>
</tr>
<tr>
<td>Tanglewood</td>
<td>1967</td>
<td>49</td>
</tr>
</tbody>
</table>

- Cost
  
  \[2.9\text{Mi} \times 2 = 5.9\text{Mi} @ \$55/\text{LF} = \$1,713,360\]
Sidewalks & ADA Curb Ramps

- 44.2 Mi. of streets have sidewalks (approx. 35% of 127 mi. of city streets) Includes State Routes but not Private Streets.

- Total Assets cost: $28,005,120 ($12/SF cost, remove and replace, 5’ wide walk on both sides of the street.)
ADA Curb Ramps

• Ordinance 2174, 12-15-92, established the Curb Ramp Transition Plan.

• Plan covered 15 years worth of ramp installations, 1992-2007, 26 ramps/yr, at $15,000/yr. with first 5 yrs located on the map, for a total of 390 ramps to be installed.

• No Ramps locations were identified for Ward 1.
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ADA Curb Ramps-  Existing Access Conditions- non compliant

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ADA Curb Ramps

- 2017 is the 25th year anniversary for the ADA Accessibility Law. The Federal Gov. is making a push to have local agencies re-evaluate where they are with implementation of ADA Access requirements, via the Transition Plans.

- Transition Plans mandated for all agencies with more than 50 employees.

- Plan should identify all intersections needing accessible upgrades, via a survey assessment.

- Plan needs to include a schedule of the upgrades along with budgeted cost.
ADA Curb Ramps

- Current Status: 606 intersections, 1670 access points, potentially 3340 access ramps. (estimate +/- 900).

- 1670 access points:
  - 295 non compliant
  - 470 previously compliant
  - 905 compliant

- Projected Cost:
  - 295 @ $600/each = $177,000
  - 470 x .75 = 353@
  - $1500/ea = $529,500
  - total = $706,500

- Propose 25yr. Program: 2017-2042
  - 353 points/25yrs. = 14 Access point installations/yr. = $21,000/yr.
ADA Curb Ramps

- Strategy for 2017: Use CDBG money ($120,000) to update 40 access points, approx. 80 (80 @ $1500/ea= $120,000) ramps to be installed.

- Prioritize by:
  1) Areas that have sidewalks but are not currently compliant. (Red Points)
  2) Areas that have sidewalks and were previously compliant, but are no longer compliant. (Yellow Points)

- This would take care of 17% of our current deficiencies, or 5.7 years worth of our proposed 25 year program.
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  - Curbs