TulStat
Streets & Stormwater and Engineering

Well-Being
Opportunity
The City Experience

June 23, 2017
Mission Statement

The Mission of TulStat is to create a platform for department leaders to share accurate information, create strategies, deploy resources and provide for regular follow-up on progress toward goals.
How Do We Accomplish this Mission?

1. Identify the Issue you’re trying to solve
2. Determine how to Measure the outcome
3. Set a Goal for improvement
4. Identify, test, and implement the Strategy
5. Measure the results and Refine the strategy
# New Schedule

Every 2\textsuperscript{nd} and 4\textsuperscript{th} Friday, 1:00, 10 North

<table>
<thead>
<tr>
<th>Date</th>
<th>Focus area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday, June 23, 2017</td>
<td>Engineering Services and Streets / Stormwater</td>
</tr>
<tr>
<td>Friday, July 28, 2017</td>
<td>Fire</td>
</tr>
<tr>
<td>Friday, August 11, 2017</td>
<td>BlightStat</td>
</tr>
<tr>
<td>Friday, August 25, 2017</td>
<td>Police/911/Municipal Court</td>
</tr>
<tr>
<td>Friday, September 08, 2017</td>
<td>Planning/Parks/WIN/MOED</td>
</tr>
<tr>
<td>Friday, September 22, 2017</td>
<td>Engineering Services and Streets / Stormwater</td>
</tr>
<tr>
<td>Friday, October 06, 2017</td>
<td>Fire</td>
</tr>
<tr>
<td>Friday, October 20, 2017</td>
<td>BlightStat</td>
</tr>
<tr>
<td>Friday, November 10, 2017</td>
<td>Police/911/Municipal Court</td>
</tr>
<tr>
<td>Friday, December 01, 2017</td>
<td>Planning/Parks/WIN/MOED</td>
</tr>
<tr>
<td>Friday, December 15, 2017</td>
<td>Engineering Services and Streets / Stormwater</td>
</tr>
</tbody>
</table>
TulStat
Streets and Stormwater – Recycling Contamination

Well-Being
Opportunity
The City Experience

June 23, 2017
Issue & Context

• The issue
  – Recycling contamination rates have averaged 29% since the program began in 2013. TARE pays extra processing costs for anything over 15%.

• Our goal
  – Reduce contamination rates to <15%, which is the amount allowed in the contract.

• How we connect to the Mayor’s goals
  – Rates are based on the costs to dispose refuse and offset by recycling rebate checks. The higher the contamination rate, the more our ratepayers will have to pay for service.
Contamination within the recycling stream reduces the dollar amount of rebate checks. This affects overall costs of the entire Refuse & Recycling system.

What it means:
Contamination within the recycling stream reduces the dollar amount of rebate checks. This affects overall costs of the entire Refuse & Recycling system.
Extra Processing Fees Cost

- Month
- Extra Processing Fees
- $14,000.00
- $12,000.00
- $10,000.00
- $8,000.00
- $6,000.00
- $4,000.00
- $2,000.00
- $0.00

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

- 2015
- 2016
- 2017
Extra Processing Fees Cost

Month

2015
2016
2017

January
February
March
April
May
June
July
August
September
October
November
December
Bringing Precision to Recycling Contamination
# Strategic Direction

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Action Plan / Next Steps</th>
<th>By When</th>
<th>Hurdles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employ Human Centered Design team to assist and recommend how to deploy $681,000 in marketing / educational resources</td>
<td>Form Human Centered Design team</td>
<td>July 2017</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Make recommendations on “nudges” to reduce contamination</td>
<td>August 2017</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Test 3 strategies and measure results</td>
<td>October 2017</td>
<td>None</td>
</tr>
<tr>
<td>Scale up strategy that proves best results</td>
<td>New Community Involvement Coordinator Position in FY18 budget</td>
<td>November 2017</td>
<td>None</td>
</tr>
</tbody>
</table>
TulStat
Streets and Stormwater - Illegal Dumping

Well-Being
Opportunity
The City Experience

June 23, 2017
Issue & Context

• The issue
  – Illegal dumping and litter related to water quality has increased 488% over the last 10 years. The impact of this increase to storm water quality is being looked at by ODEQ/EPA. These increases are affecting our permit goals and the cost to meet these new and future requirements.

• Our goal
  – Reduce illegal dumping and litter by 20% over the next 5 years.

• How we connect to the Mayor’s goals
  – Improving both Well-Being and The City Experience by improved water quality and the overall appearance of the City of Tulsa.
Identifying the Litter Issue

Floatable Monitoring Locations Summary 2003-2017

- Cubic Yds.
- Total Rainfall (Calendar Year)
The amount and cost of litter has increased over the years affecting our water quality and overall appearance of the City.
Illegal Dumping
Illegal Dumping
Illegal Dumping

Graph showing the trend of Tons from March 2015 to June 2017 with average and 20% reduction lines.
Illegal Dump Locations

Routine Dump Areas
## Strategic Direction

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Action Plan / Next Steps</th>
<th>By When</th>
<th>Hurdles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employ better tracking and enforcement</td>
<td>Two new positions in Refuse &amp; Recycling</td>
<td>September 2017</td>
<td>None</td>
</tr>
<tr>
<td>Redirect Stormwater efforts to tracking point source for litter.</td>
<td></td>
<td>June 2017</td>
<td>None</td>
</tr>
<tr>
<td>Increase monitoring and locations</td>
<td></td>
<td>November 2017</td>
<td>None</td>
</tr>
<tr>
<td>Scale up public education and strategy that proves best results</td>
<td>Review potential strategies in Streets and Stormwater to develop an education program</td>
<td>October 2017</td>
<td>None</td>
</tr>
</tbody>
</table>
Issue & Context

• The issue
  – Traffic crashes at intersections and commercial driveways result in property damage, injury and sometimes fatalities. They also increase traffic congestion and delay while increasing air pollution.

• Our goal
  – Reduce crashes rates by 15% at high crash locations

• How we connect to strategic outcomes
  – Connected to City Experience – Reducing traffic crashes per 100,000 population.
What it means

Traffic crashes plotted for 2015. Crashes can be plotted yearly and high crash locations tracked.
What it means

When comparing all crashes to crashes with fatal crashes, the top three crash types are the same except pedestrians. When considering fatalities, pedestrians make up 1 in 5 fatalities.
## Strategic Direction & Actions

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Action Plan / Next Steps</th>
<th>By When</th>
<th>Hurdles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employ multidisciplinary team to reduce traffic crashes</td>
<td>Rank top 50 high crash locations</td>
<td>September 2017</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analyze locations for possible solutions</td>
<td>November 2017</td>
<td>Available staff resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Develop implementation plan for low cost solutions</td>
<td>March 2018</td>
<td>Available funding</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Available staff resources</td>
</tr>
<tr>
<td>Work with Engineering on projects requiring a CIP</td>
<td>Identify projects to go on needs list for future funding</td>
<td>March 2018</td>
<td>Competition with other priorities for future funding</td>
</tr>
</tbody>
</table>
Issue & Context

• What’s the issue you’re trying to solve?
  – Improve the City’s overall pavement condition index (PCI)
    • 1273 Arterial Lane Miles
    • 3075 Non-arterial Lane Miles
    • 95 Central Business District Lane Miles

• What is your measurable goal?
  – Achieve and maintain a citywide network PCI value of 65 by 2020 for arterial and non-arterial streets.

• How does it connect to strategic outcomes
  – Provide a quality transportation network of streets and sidewalks. Decrease traffic fatalities.
What it means

Performing the right treatment at the right time on the right street reduces maintenance costs.

$1 for preventive maintenance here is 5 to 10 times more cost effective than here.

Status

What it means

Performing the right treatment at the right time on the right street reduces maintenance costs.
Routine and preventive maintenance can extend the life of a pavement and reduce overall maintenance costs.
What it means

An increased capital investment in street rehabilitation beginning in 2008 has resulted in an increase in PCI.
What it means

An increased capital investment in street rehabilitation beginning in 2008 has resulted in an increase in PCI.
## ARTERIAL

<table>
<thead>
<tr>
<th>Scenario</th>
<th>PCI 65 2020</th>
<th>PCI 70 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
<td><strong>Budget</strong></td>
<td><strong>Avg PCI</strong></td>
</tr>
<tr>
<td>2015</td>
<td>$39,000,000</td>
<td>63</td>
</tr>
<tr>
<td>2016</td>
<td>$39,000,000</td>
<td>64</td>
</tr>
<tr>
<td>2017</td>
<td>$39,000,000</td>
<td>64</td>
</tr>
<tr>
<td>2018</td>
<td>$39,000,000</td>
<td>64</td>
</tr>
<tr>
<td>2019</td>
<td>$39,000,000</td>
<td>64</td>
</tr>
<tr>
<td>2020</td>
<td>$39,000,000</td>
<td>65</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>$234,000,000</strong></td>
<td></td>
</tr>
</tbody>
</table>

### What it means

Current model for Arterial funding to reach a PCI of 65 in 2020.
<table>
<thead>
<tr>
<th>Scenario</th>
<th>PCI 65 2020</th>
<th>PCI 70 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Budget</td>
<td>Avg PCI</td>
</tr>
<tr>
<td>2015</td>
<td>$55,000,000</td>
<td>61</td>
</tr>
<tr>
<td>2016</td>
<td>$55,000,000</td>
<td>62</td>
</tr>
<tr>
<td>2017</td>
<td>$55,000,000</td>
<td>63</td>
</tr>
<tr>
<td>2018</td>
<td>$55,000,000</td>
<td>64</td>
</tr>
<tr>
<td>2019</td>
<td>$55,000,000</td>
<td>64</td>
</tr>
<tr>
<td>2020</td>
<td>$55,000,000</td>
<td>65</td>
</tr>
<tr>
<td>Total:</td>
<td>$330,000,000</td>
<td></td>
</tr>
</tbody>
</table>

**What it means**

Current model for Non-arterial funding to reach a PCI of 65 in 2020.
What it means

Various scenarios for arterial funding.
What it means

Various scenarios for non-arterial funding.
## Strategic Direction & Actions

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Action Plan / Next Steps</th>
<th>By When</th>
<th>Hurdles</th>
</tr>
</thead>
<tbody>
<tr>
<td>The right treatment at the right time on the right street</td>
<td>Coordinate with Streets &amp; Stormwater on routine and preventive maintenance</td>
<td>Ongoing</td>
<td>Right-of-way constraints, Utility relocations</td>
</tr>
<tr>
<td>Identify funding level for future funding package</td>
<td></td>
<td>November 2017</td>
<td>Elected officials balancing commitment to City streets with other City funding needs.</td>
</tr>
<tr>
<td>Identify street projects based on funding level and optimizing PCI.</td>
<td></td>
<td>June 2018</td>
<td></td>
</tr>
</tbody>
</table>
Issue & Context

• What’s the issue you’re trying to solve?
  – Reduce the number of waterline breaks and leaks in the water distribution system which leads to more reliable water supply, lower costs and less disruption to traveling public, businesses, roadways, and adjacent properties.

• What is your measurable goal?
  – Reduce future rate increases by 15% to 20% compared to 2012 projections through 2040.

• How does it connect to strategic outcomes
  – Having a reliable water system helps Tulsa attract employers / grow Tulsa’s workforce, lower capital costs, and minimize disruptions to transportation system.
What it means

This map represents the age of the water system by decades across the City of Tulsa’s water system.
What it means

This heat-map represents the waterline breaks in the distribution system over the last 6 years.
What it means

An increase in capital funding results in a decrease in waterline breaks.
### STREET COORDINATION MATRIX

<table>
<thead>
<tr>
<th>Mill/OverLay</th>
<th>yes</th>
<th>gtr than 75 y/o</th>
<th>yes</th>
<th>replace</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no</td>
<td>break history</td>
<td>yes</td>
<td>replace</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>grade changes</td>
<td>yes</td>
<td>replace</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>or conflicts</td>
<td>yes</td>
<td>replace</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>defer replacement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Reconstruction</th>
<th>yes</th>
<th>gtr than 55 y/o</th>
<th>yes</th>
<th>replace</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>no</td>
<td>break history</td>
<td>yes</td>
<td>replace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 breaks in 10 yrs</td>
<td>[Or if there is a recent acceleration in breaks]</td>
<td>replace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(or more)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>grade changes</td>
<td>yes</td>
<td>replace</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>or conflicts</td>
<td>yes</td>
<td>replace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>defer replacement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### What it means

This represents the decision logic to determine whether a waterline is to be replaced or deferred.
# Strategic Direction & Actions

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Action Plan / Next Steps</th>
<th>By When</th>
<th>Hurdles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluate the waterlines based on risk of failure and disruption.</td>
<td>Evaluate against current funded transportation program</td>
<td>Ongoing</td>
<td>Balance risk and cost.</td>
</tr>
<tr>
<td></td>
<td>Select streets that have waterlines that have highest risk and leverage water funding.</td>
<td>June 2018</td>
<td>Adequate time for analysis to coordinate with the preparation of funding package projects.</td>
</tr>
</tbody>
</table>
Issue & Context

• What’s the issue you’re trying to solve?
  – Reduce sanitary sewer overflows (SSO) in wastewater collection system (1,985 miles of line & 68,700 manholes).

• What is your measurable goal?
  – Less than two overflows from the same location in a 12-month period. Zero overflows due to Inflow and Infiltration (I & I).

• How does it connect to strategic outcomes
  – Having a “tight” sanitary sewer system contributes to Tulsan’s overall health.
This chart represents growth in the system by decade.
Location of 92 permanent flow meters and 57 rain gauges used to monitor flows, model system and evaluate cause of overflows (2003 - 61 flow meters).

(Management with Measurement)
I/I Prioritize Approach

**LEGEND**

Priority Order

- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 53

Status

City of Tulsa, Oklahoma
Comprehensive Wastewater System Study

I/I Control Plan Prioritization
Status

What it means

This chart represents manhole sites with overflows during 2014 - 2015

Mayor/Council Goals

Well-Being

Improve overall health
What it means

This chart represents manhole sites with overflows during 2016 - Present
This chart represents manhole sites with repeat overflows during 2014 - 2015.
What it means

This chart represents manhole sites with repeat overflows during 2016 - Present
### Strategic Direction & Actions

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Action Plan / Next Steps</th>
<th>By When</th>
<th>Hurdles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimize dollars spent on collection system by monitoring and measuring pipe flow data correlated with rain gauges.</td>
<td>Analyze flow data for dry and wet weather overflows.</td>
<td>Ongoing</td>
<td>Inspection work requires both dry and wet weather patterns.</td>
</tr>
<tr>
<td></td>
<td>Review data to define and/or update CIP business cases.</td>
<td>September 2017</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prioritize CIPs for funding in FY19-23 capital plan.</td>
<td>January 2018</td>
<td>Sequencing of improvements</td>
</tr>
<tr>
<td></td>
<td>Work the plan, i.e. construct improvements</td>
<td>FY19</td>
<td>Right-of-way for retrofit in urban areas.</td>
</tr>
</tbody>
</table>
TulStat

Support Department Metrics

June 23, 2017
FY 16-17 Authorized Positions by Department

FY 16-17 Dept FTE
Equivalents as % of all FTEs

Percentage of Total FY 16-17 FTE Equivalent
Equipment & Vehicle Maintenance Metrics

City-wide Work Orders by Type & Year

TulStat Report Dept Work Orders by Dept & Type of Asset

Avg Downtime Days by Dept for Vehicles
Jobs Filled Metrics

Positions Filled - as % of all positions filled (July 2016-May 2017)

Avg Days to Fill Jobs by Dept.

Department 1
- Communications: 0.00
- Fire: 0.00
- Customer Care: 14.09
- AMD: 15.91
- HR: 16.50
- PAC: 16.55
- Municipal Court: 20.55
- Parks & Rec: 21.73
- WIN: 28.50
- Streets & Stormwater: 33.09
- Finance: 34.73
- TPD: 35.73
- Water & Sewer: 38.36
- IT: 42.18
- Planning & Dev.: 49.09
- Legal: 57.00
- Engineering Services: 61.09

Jobs Filled City-Wide July 2016-May 2017

Department 1
- Streets & Stormwater: 94
- Engineering Services: 39
- City-wide: 509

% of Total Jobs Filled
Grievances & Investigations Metrics

Grievances/Complaints/Investigations

<table>
<thead>
<tr>
<th>Department</th>
<th>Year of Mo.</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>City-Wide</td>
<td>2016</td>
<td>6</td>
<td>10</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>3</td>
<td>6</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>2016</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Streets &amp; Stormwater</td>
<td>2016</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>

# of Grievances/Complaints/Investigations
Legal Claims Metrics

Legal Claims Jan. 2016-May 2017
Departments with 5+ Claims

<table>
<thead>
<tr>
<th>Department</th>
<th>Count of Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police</td>
<td>61</td>
</tr>
<tr>
<td>Public Works - Streets Maintenance</td>
<td>52</td>
</tr>
<tr>
<td>Public Works - Env., Sewer Sys. Maint.</td>
<td>19</td>
</tr>
<tr>
<td>Public Works - Engineering</td>
<td>14</td>
</tr>
<tr>
<td>MTTA-Metropolitan Tulsa Transit Auth.</td>
<td>13</td>
</tr>
<tr>
<td>Storm Water Management</td>
<td>13</td>
</tr>
<tr>
<td>Water &amp; Sewer</td>
<td>9</td>
</tr>
<tr>
<td>Parks &amp; Recreation</td>
<td>11</td>
</tr>
<tr>
<td>Fire Department</td>
<td>9</td>
</tr>
<tr>
<td>Streets &amp; Stormwater</td>
<td>9</td>
</tr>
<tr>
<td>Public Works - Pub. Fac. Maint. &amp; Opera.</td>
<td>6</td>
</tr>
<tr>
<td>Working in Neighborhoods</td>
<td>6</td>
</tr>
</tbody>
</table>

% of Total Count of Number of Claims

City-wide Count of Claims by Month
IT ServiceDesk Metrics

City-wide Count of IT Completed Tickets

Month of Creation
- August 2016
- September 2016
- October 2016
- November 2016
- December 2016
- January 2017
- February 2017
- March 2017
- April 2017

Number of Records

Presenting Dept Count of IT Completed Requests

Month of Completion
- August 2016
- September 2016
- October 2016
- November 2016
- December 2016
- January 2017
- February 2017
- March 2017
- April 2017

Year of Completion

Department
- Streets And Stormwater
- Engineering Services

Category
- Add/Install
- Audio-Visual
- Authorize-Approve
- Backup-Restore
- Break-Fix
- Change Management
- Change-Move
- Delete-Remove
- How to
- IT Initiative
- Not Assigned
- Printers
- Purchasing
- Renewal
- Reset Password
- Security Initiatives
- Service Request
- Update