

Navigating Crises as a City

Longview Intercity Visit
June 7, 2021

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Tulsa's Challenges Are Not Unique

- Past – 2019 Arkansas River Flood
- Present
 - Overcoming the pandemic's resulting economic crisis
 - Ransomware attack
- Future – Improving City Budgeting and Innovation in Local Government



A few headlines from 2019-2021

Growing deficit will weigh on Mayor G.T. Bynum's budget goals

City's list of damages from 2019 flood tops \$12 million

Kevin Canfield Apr 6, 2020 0

City of Tulsa furloughs many employees in budget-cutting plan through December

Kevin Canfield Apr 18, 2020 0

City of Tulsa employees should learn in late November whether furloughs will be continued next year

Kevin Canfield Oct 29, 2020 Updated Dec 5, 2020 0

The City of Tulsa working on 120 waterline breaks due to record-breaking temperatures

SOME RAIN 59 • 50 FORECAST, AZ | TUESDAY, MAY 11, 2021 | tulsaworld.com

Feds helping ransomware probe

Cyber attack targets city services, slows police and fire response

KEVIN CANFIELD AND KELSEY SCHLOTTHAUER
Tulsa World

The FBI and Department of Homeland Security are assisting the city in its investigation of a ransomware attack that Mayor G.T. Bynum acknowledged Monday is slowing the delivery of city services, including the work of police and firefighters.

that officers rely on, as far as computer system notification that the Fire Department uses, those are down," Bynum said. "And so both departments are having to utilize alternative methods to share information between dispatch and the field so that teams can get out there and do their work, and that slows the process, and that is why it is such a high priority for us to get those systems back up."

Bynum made his remarks during the city's first briefing on the hack since it was announced Saturday. Chief Information Officer Michael Dellinger said the city is still investigating the source of the cyber attack but did not rule out the possibility that it could be associated with the malware that shut down the Colonial Pipeline last week. The FBI on Monday identified the source of that hack as a group called DarkSide.

"It is very similar," Dellinger said.

Early indications are that the first botnet — internet-connected devices infected by malware used to gain access to computer systems — reached the city's computer system April 21 but was not detected until May 6, Dellinger said.

"Many of those things lie dormant and so they don't actually do anything or enact anything," Dellinger said. "It is when they actually start to do things that systems will detect them."

The city received both internal and external notifications of the malware, Dellinger said, but has yet to determine exactly how it entered the city's computer system. Approximately 60,000 emails a day come through the city's email server, Dellinger said, and firewall attacks are common.

The largest component of the city's computer system affected by the hack was the authentication system, which is now undergoing a thorough examination before it is brought back online.

"It is an ongoing defense posture that we have to take," he said.

Neither Bynum nor Dellinger could say when the city's computer system would be up and running again but stressed that the public safety systems are on the top of the priority list.

The cyber attack included a demand that the city make contact with someone, Dellinger said, "so

Please see **MALWARE**, Page A6

■ Related: Ransomware attack pushes gas prices up. **Work & Money**, Page A9



Overcoming the COVID-19 pandemic and its economic impact

1. City Budget Process
2. Economic Context – January-April 2020
3. Municipal Government revenue
4. Reducing expenses in a pandemic
5. Lessons learned

Programmatic Decision Making

Benefits the City, Partners, and Residents

Transparency

Increases accessibility and comprehension of budget and services

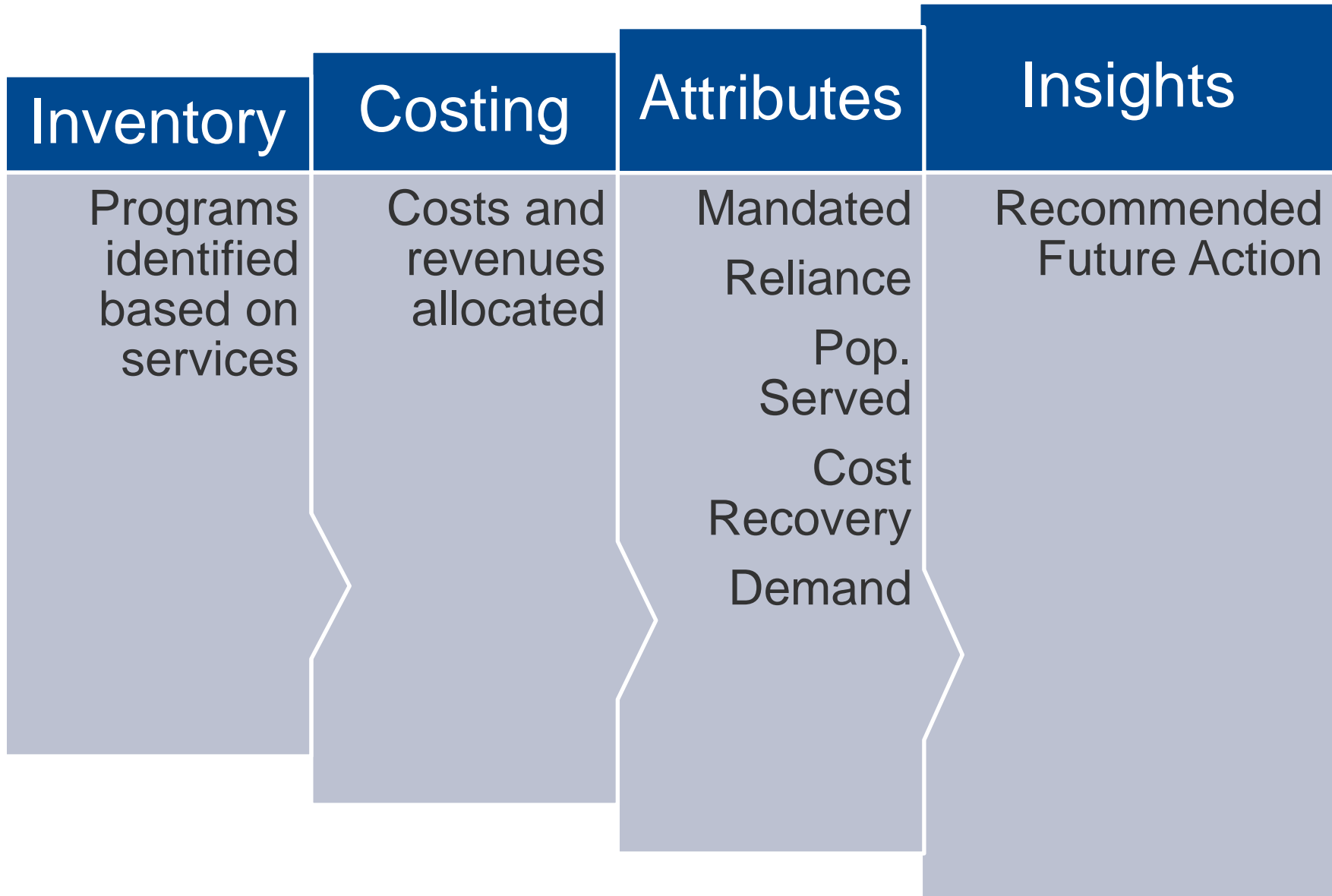
Stewardship

GFOA Best Practice; used on Moody's, S&P ratings

Results Oriented

Allows for simplified input on priorities and evaluation of results

The Process of Program Based Budgeting



Helping Constituents Recover from Crisis

Identify those
at risk of
eviction



Test text
messaging



Scale
messaging
referrals

Identifying Those at Risk of Eviction

Fall 2018 – Urban Data Pioneers Project

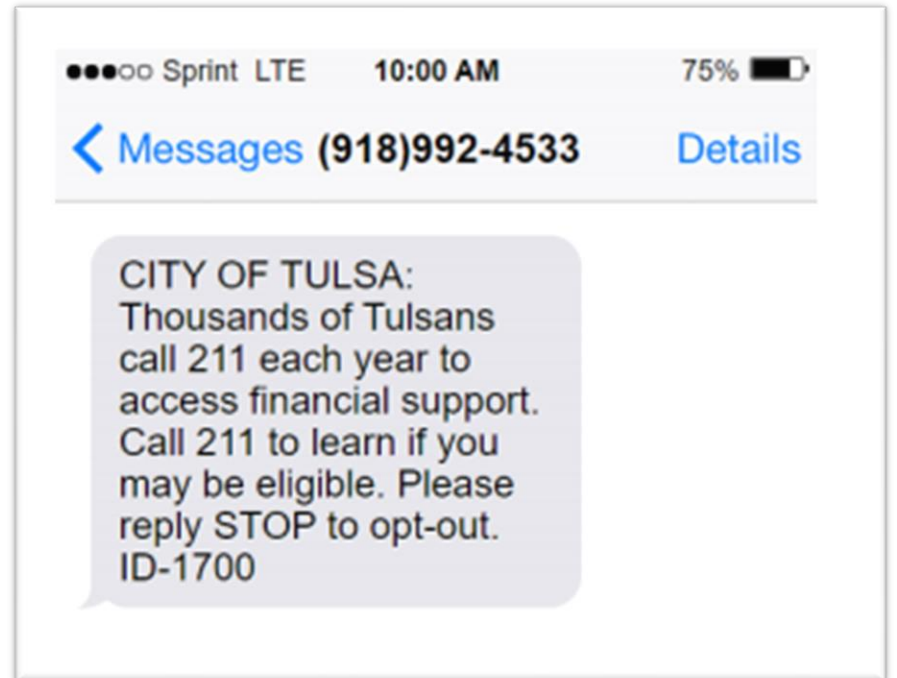
- Hypothesized that utility billing history could indicate eviction risk
- Analyzed water billing data, OK Policy dataset of eviction filings in County Court
- 78% of households with no eviction event had on-time payments
- 42% of households with eviction event had delinquent payments
- Developed time series predictive model to identify those at risk - 12x more likely to experience eviction



Testing Text Messages to Refer to Support Services

Randomized control trial
June to November 2020

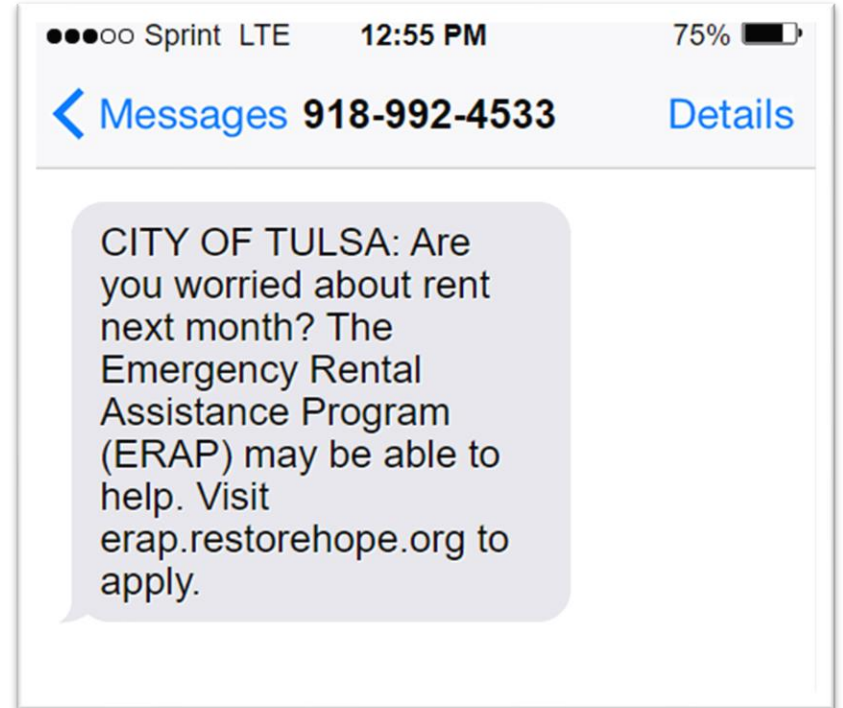
- 20% called 211 after receiving text
- 144 households received services



Scaling Text Program – CARES Act

Continuing texting campaign to refer to Emergency Rental Assistance Program

- Started April 2021
- 3,082 messages in first month



Questions?

