TulStat

Tulsa Fire Department

The City Experience, Well Being

July 28, 2017

CITY OF Tulsa
A New Kind of Energy

Introduction

Michael Baker to Present:

Issue #1 – Ongoing Operational Issue

High Healthcare Utilization by Individuals and Facilities

Andy Teeter to Present:

Issue #2 – Strategic Planning for Deployment of Resources

Four components/four TulStat Sessions

1. First-in response times (this session)
2. Advanced Life Support (ALS) deployment
3. Effective Response Force/Effective Firefighting Force
4. Staffing

Follow-Up Item Report

Communications

- CARES Story – The Frontier June 2, 2017

Legal

- HMIS Agreements Pending in City Legal
- Overall Strategy Documents Requested by SJMC and City Legal for Partnership

Adult Protective Services

- No more than a referral for documentation
- Case load exceeds staffing

Next Steps

- Transition of OU Students
- F&CS Case Manager Embed at TFD

Issue #1 – High Healthcare Utilization Impacting Fire Department Operations

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Issue & Context

The issue:

- Excessive utilization of public safety resources by patients who struggle to navigate complex health care systems

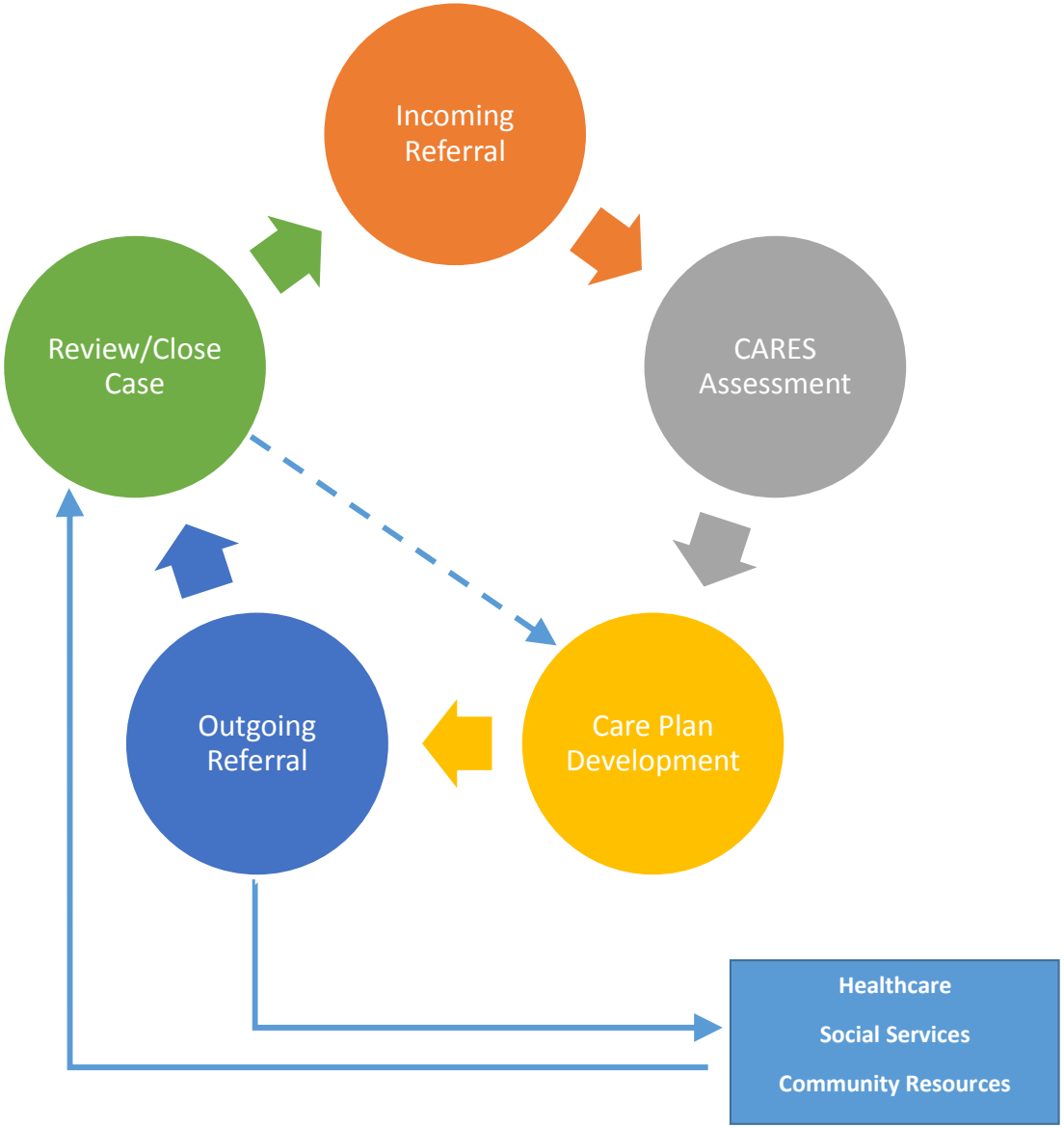
The *measurable* goal:

- Decrease in the number unnecessary responses to high health care utilizers and complex medical patients

How does it connect to strategic outcomes:

- Well-Being, Overall Community Health, Mental Health, Homelessness

TFD EMS – CARES Process Map



V1.0 June 2017

Measurement- CARES

How we Identify High Utilizers:

1. Fire/EMS Reports (CAD, EHR)
2. Fire Company Referral
3. Healthcare/Social Service Agency Referral

Our Goal:

20% Reduction in Utilization Post CARES Team Intervention/Assessment

EMS Encounters	User Category
1	Low
2–4	Moderate
5–14	High
≥15	Superuser

Issue #1 – Current Performance

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Current Performance Details

Data Collection Period

January 1 – June 30, 2017

Monitoring Total of 50 Patients

Closed Charts – 8

Top Ten Utilizer Demographics

ZIP	Age	Race	Gender	Source	911 Calls	Change
74128	75-84	Caucasian	Female	TFD Field	28	23
74126	45-54	Caucasian	Female	Data Flag	28	
74104	45-54	African American	Female	TFD Field	26	
74128	55-64	African American	Female	TFD Field	26	
74115	55-64	Caucasian	Female	Data Flag	24	
74134	65-74	Caucasian	Female	Data Flag	23	0
74145	>85	Caucasian	Female	TFD Field	19	
74128	22-34	Caucasian	Female	Data Flag	18	
74105	55-64	Caucasian	Female	Data Flag	18	
74145	>85	Caucasian	Male	Data Flag	18	0

Status

What it means

Impacting the utilization of the top ten is difficult despite connection to community services

Mayor/Council Goals

Well-Being

Improve overall health

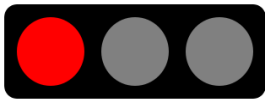
Top Ten Utilizer Demographics

80% Caucasian

90% Female

60% Located by TFD Data Review

Status



What it means

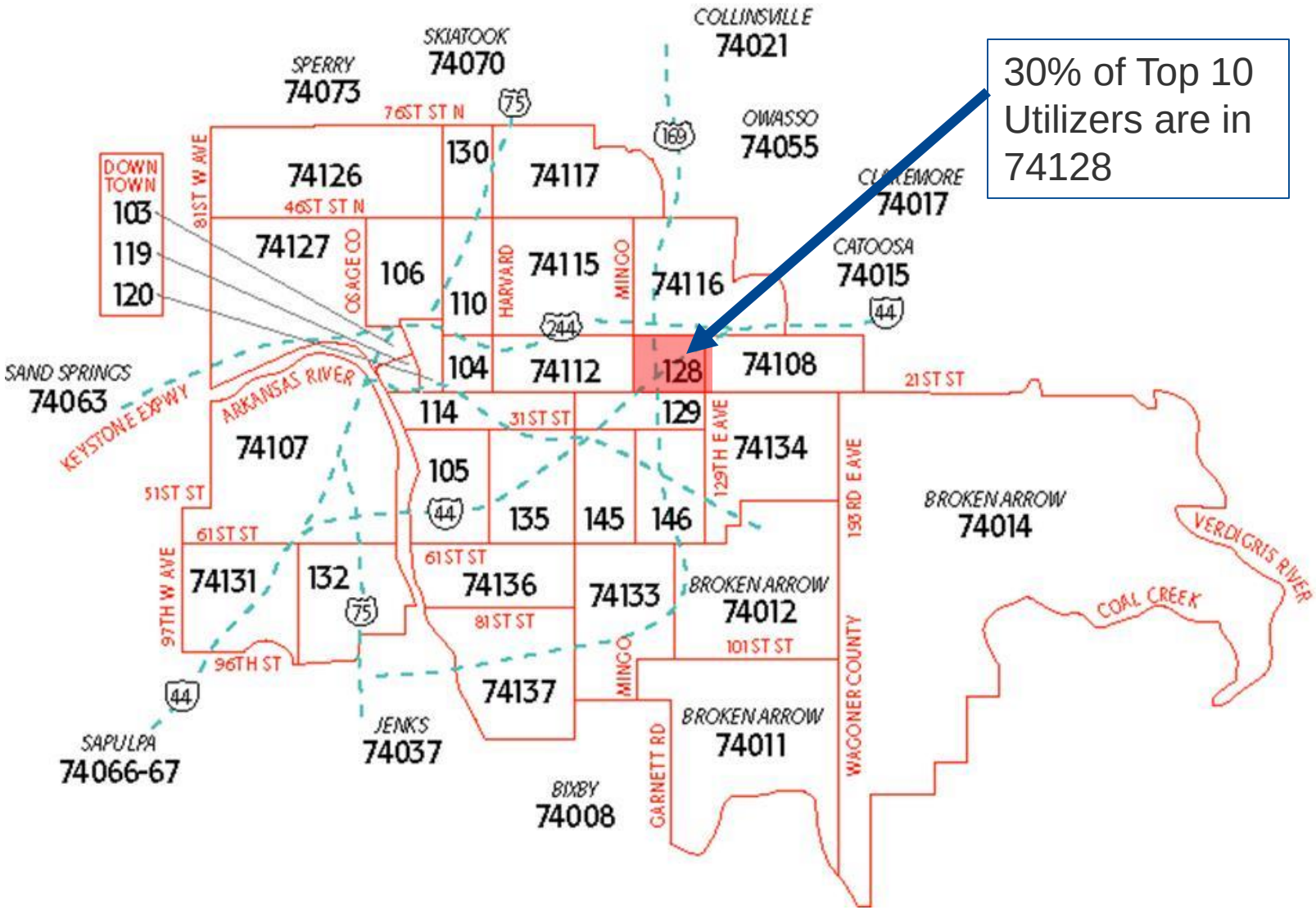
Disparity among population groups, gender, and geography indicate a potential gap in services and requires additional research

Mayor/Council Goals

Well-Being

Improve overall health

Geographic Distribution



Successful Referrals

2017 Response Count	Nature of Call	Intervention	Reduction Post Intervention
26	Lift Assist	Wheelchair Repair	85%
14	Lift Assist	Wheelchair Repair	100%
3	Hoarding	Social Service Refer	100%
23	Lift Assist	Home Health Refer	49%
18	Cardiac Health	OU Health Refer	100%
9	OD, Fall	OU Health Refer	100%
26	Diabetic	Refer Assisted Living	92%
15	Lift Assist	Social Service Refer	100%
19	Lift Assist	Home Health Refer	88%
18	Lift Assist	Home Health Refer	94%

Status

What it means

Referral to appropriate service providers and assistance with functional limitations often achieves high results

Mayor/Council Goals

Well-Being

Improve overall health

High Utilizer Referrals

Referral Agency	Count	Existing Services	Services in Place
Morton Clinic	6	Home Healthcare	6
Family & Children's Services	4	Family & Children's Services	3
Adult Protective Services	3	Indian Health Center	2
Life Senior Services	3		
OSU Medical Center	2		
Indian Health Center	2		
Legal Aid	1		

Status

What it means

Working, and communicating, with other agencies is essential to decreasing utilization

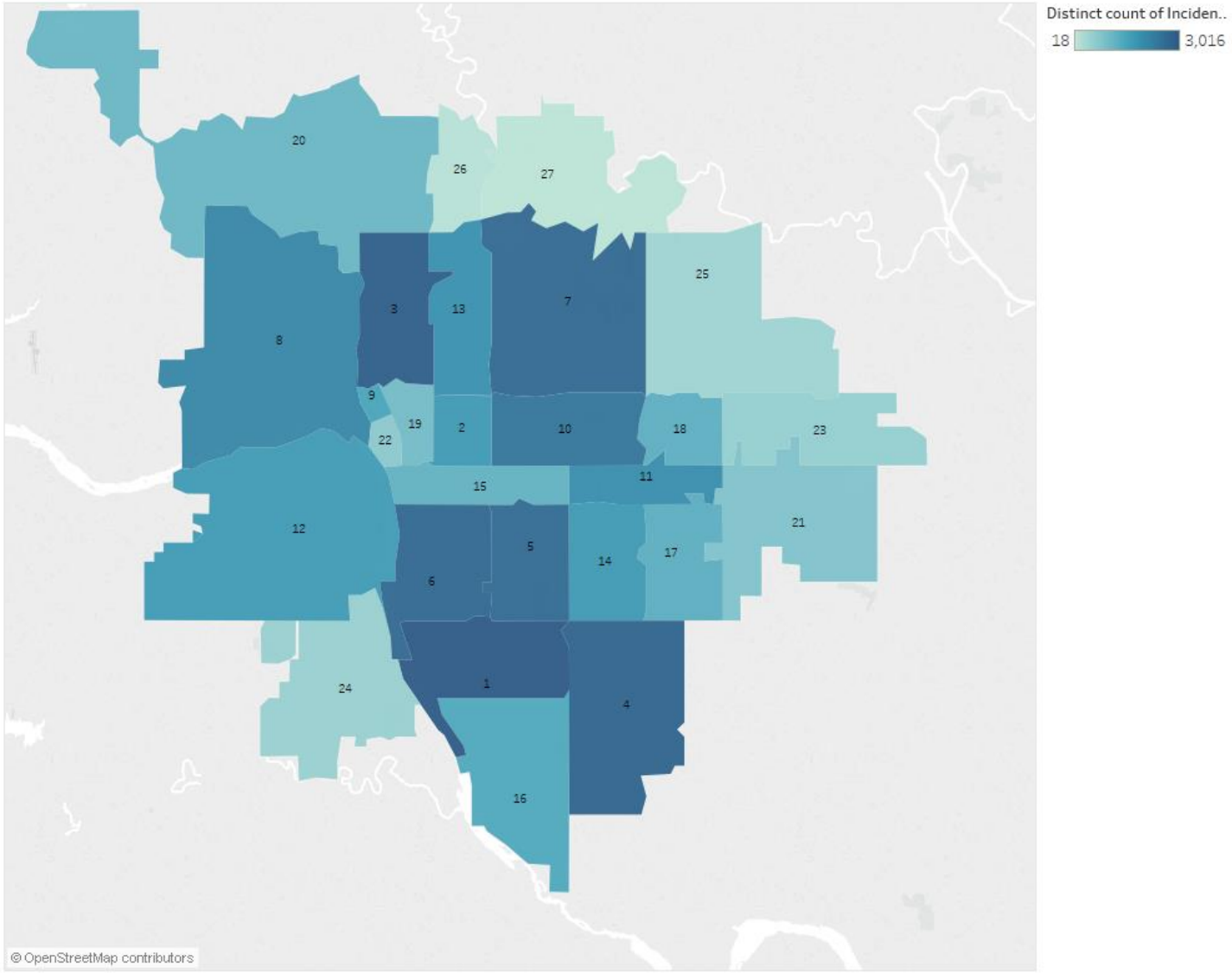
Mayor/Council Goals

Well-Being

Improve overall health

CARES

2016 Medical 911 Calls By Zip Code - January 1, 2017 thru December 31, 2017
The zip codes are color coded by highest total number of Medical calls being the darkest blue to the least number of calls to the lighter blues.
The labeled numbers are the number of super users in each zip code which is defined by having 15 or more calls during a year.



CARES

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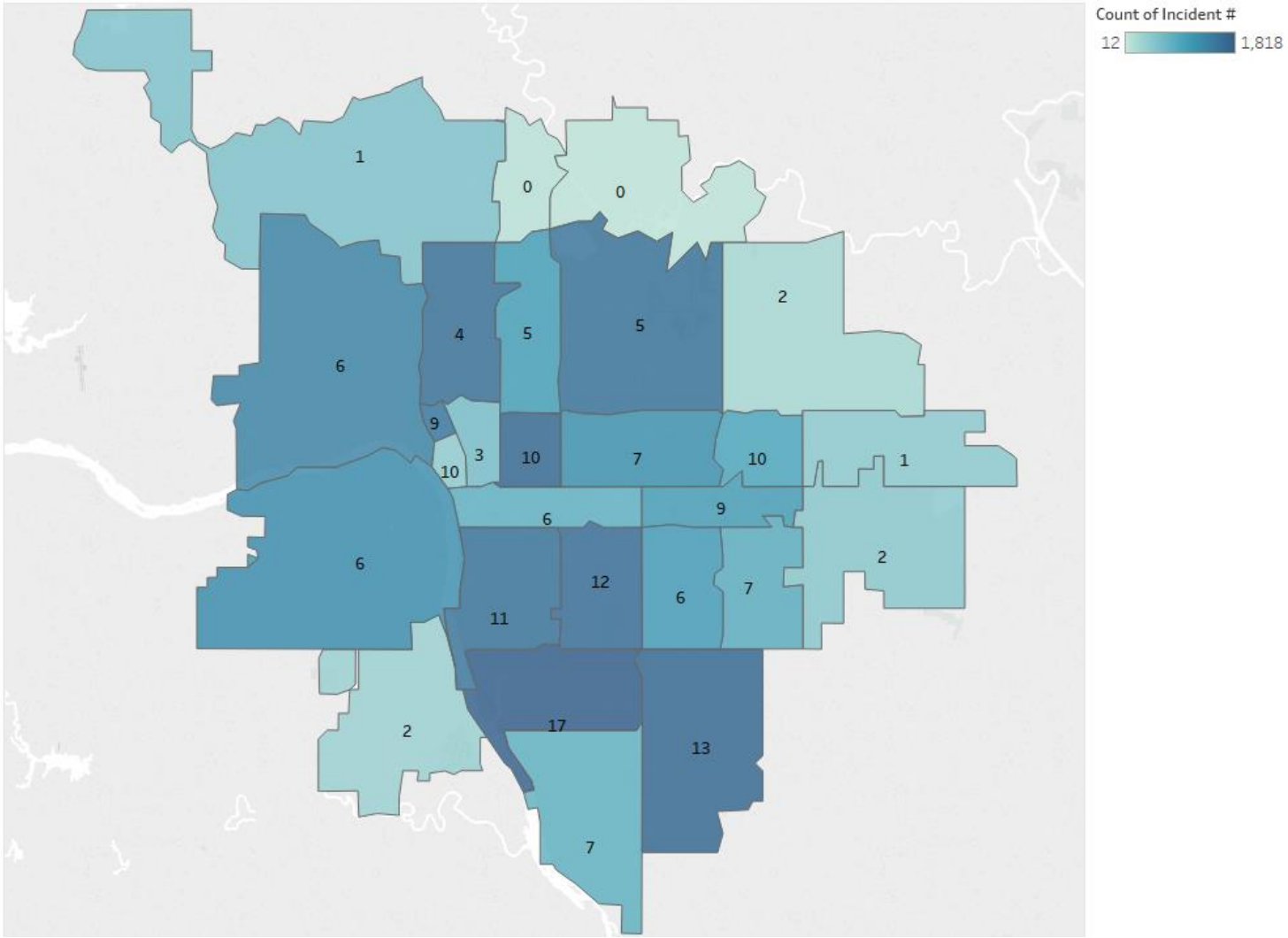
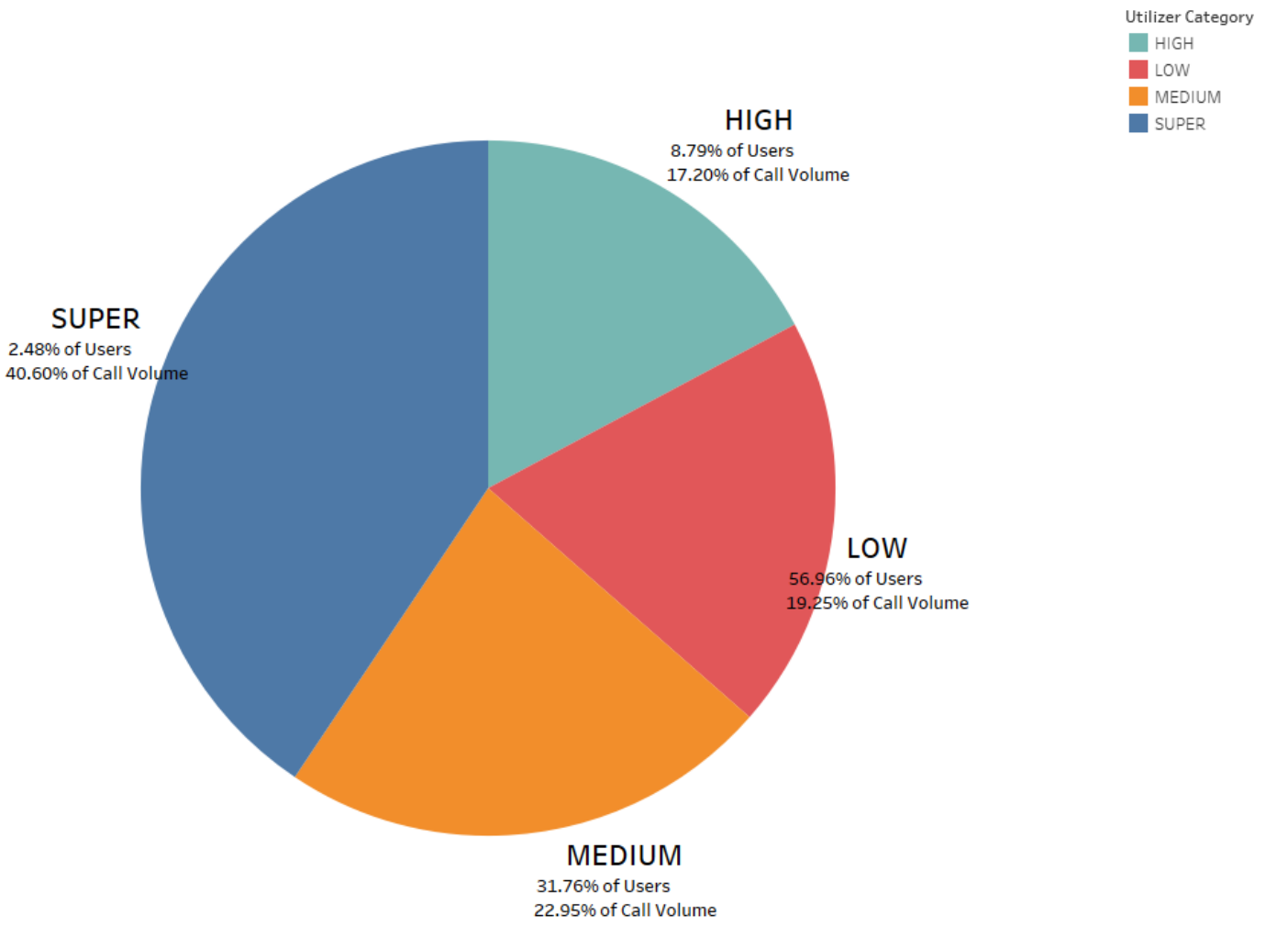


CARES

2016 Medical 911 Call Volume Drivers

Super Users 15+ Calls | High Utilizers 5-14 | Medium 2-4 | Low 1



CARES

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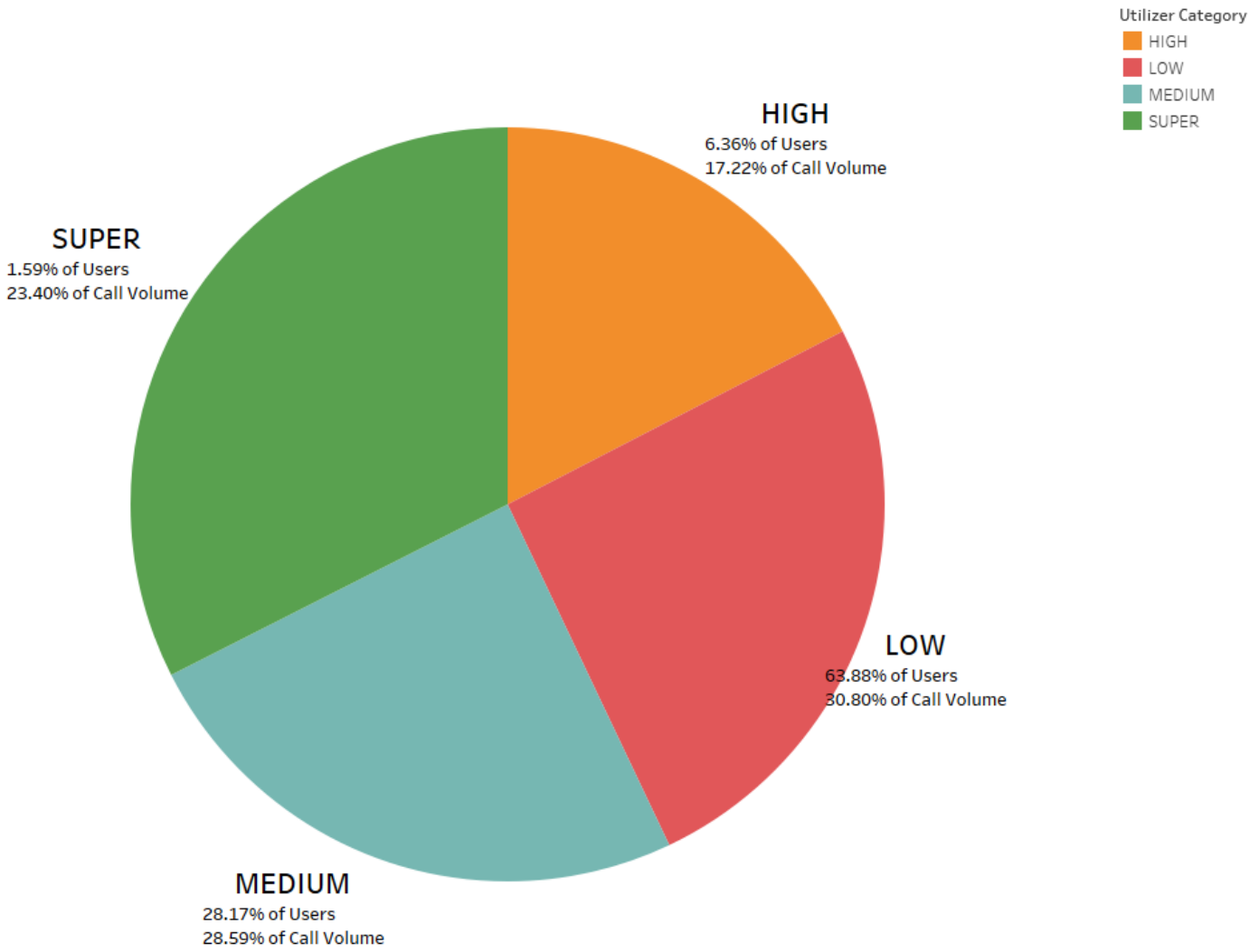

Strategic Direction & Actions

Strategy	Action Plan / Next Steps	By When	Hurdles
Reduce High Utilization by Individuals and Facilities through Data Analysis and Referral	Continue to Develop Processes and Policy	September 2017	Legal Review
	Develop Improved Data Analysis Processes	September 2017	Deep Dive and Evaluate Patterns
	Evaluate High Facility Programs	December 2017	Partnerships, Education Plan Development
Develop Program Sustainability	Seek Long Term Funding and Program Development	December 2017	Funding, Staffing, Labor,

Issue #2
Strategic Planning/Deployment of Resources

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Issue #2 - Strategic Goals

Goal 1: Fire Station Location

Use a realistic, reproducible, data-based methodology to determine the optimal placement of current and future stations based on identified life risk in the city.

Goal 2: Advanced Life Support Placement

Use a realistic, reproducible, data-based methodology to determine the most advantageous current stations for placement of ALS personnel.

Issue #2 - Strategic Goals

Goal 3: Multiple Company Stations

Identify which current and future stations should house one staffed apparatus and which current and future stations should house two or more staffed apparatus based on the predominant risk and call demand.

Goal 4: Staffing

Determine the most effective use of the personnel and equipment funded by Vision funding package.

Issue #2 – Current Performance

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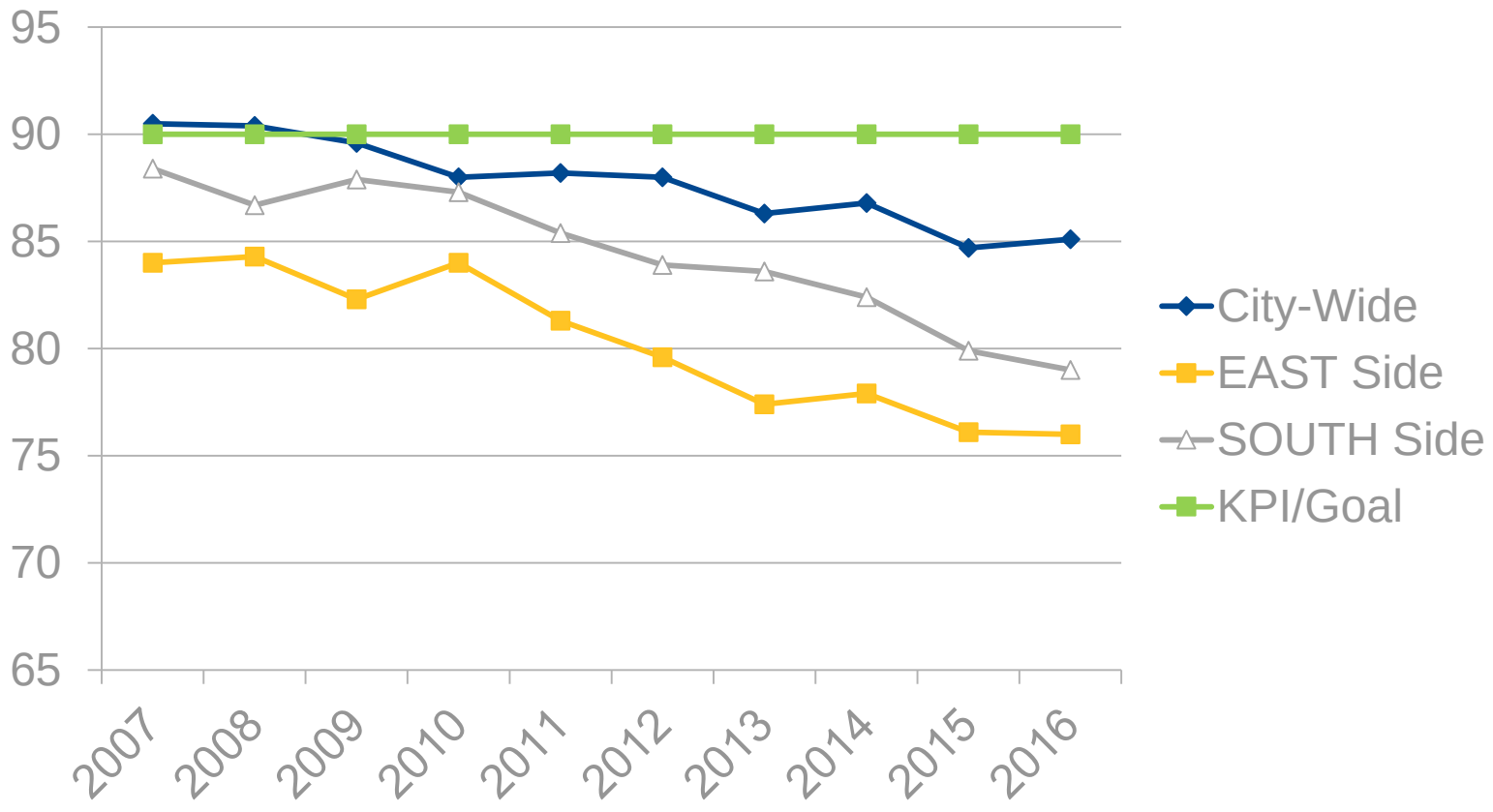
Issue & Context: Goal #1

- The issue
  - Fire station location in Tulsa based on life risk and consistent with nationally recognized standards

- Our *measurable* goal
  - Respond to 90 percent of all emergency incidents within six minutes of the call to 911

- How we connect to strategic outcomes
  - Connected to The City Experience and Well-Being

Arrival within 6 minutes from 911 call
Target: 90% of all emergency calls



2017 Fire Stations

Value = relative life and fire risk by fire station first-in response areas

= normal or acceptable risk

Mayor/Council Goals

Well-Being

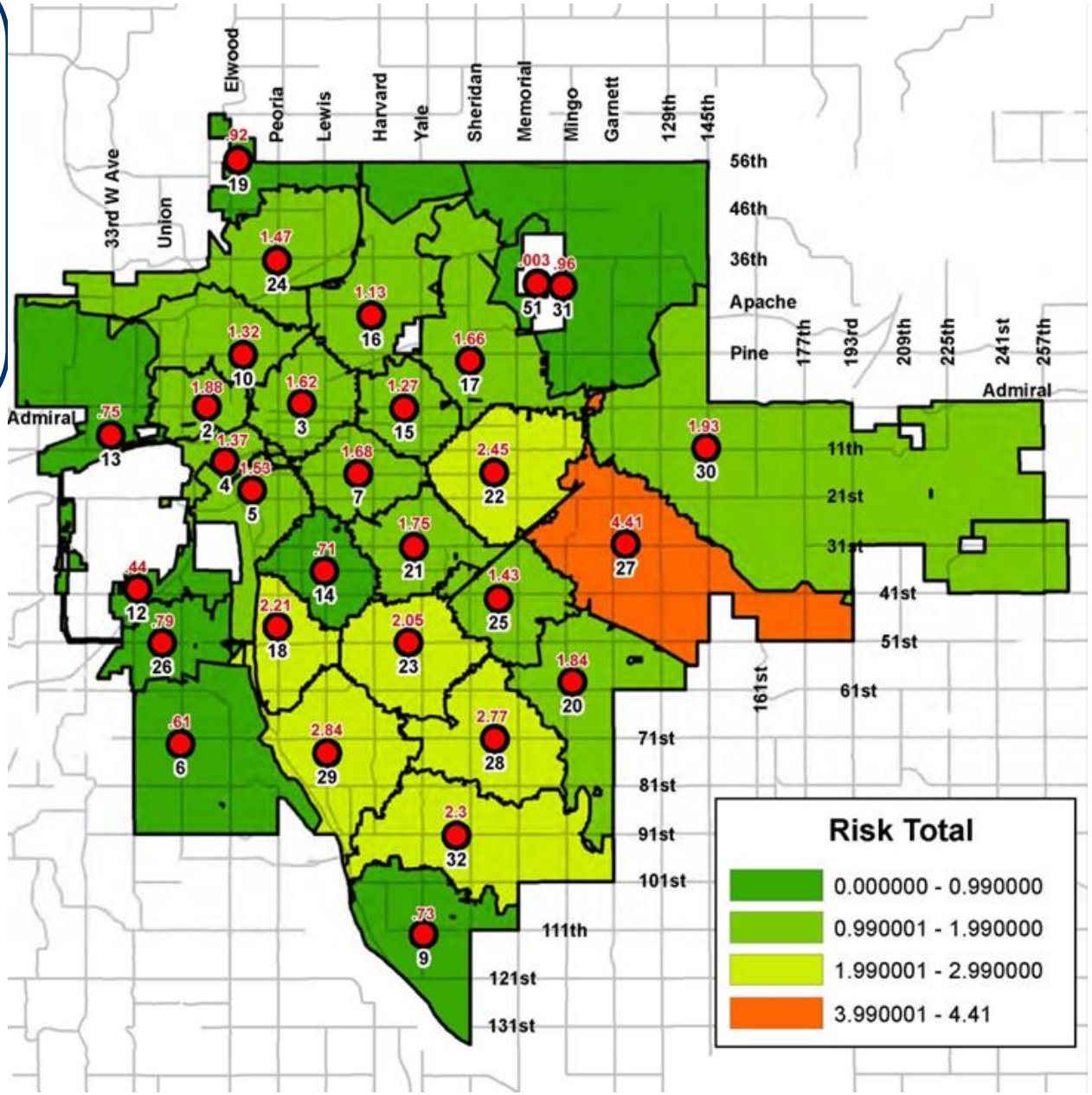
The City Experience

Status

East Tulsa

South Tulsa

Current Fire Stations



Criteria for “First-In” Response

Risk Ratio = Probability + Severity + Failures

Risk Inputs:

1. Probability

   Single and multi-family dwelling population divided by 10,000 in station area

2. Severity

   Actual number of incidents in station area divided by 2000

3. Failures

   Ratio of runs that the department cannot make within four minutes travel time in an existing or proposed fire station’s area

Why a Risk Ratio?

Allows for variable sized areas vs. fixed areas based on standard station spacing

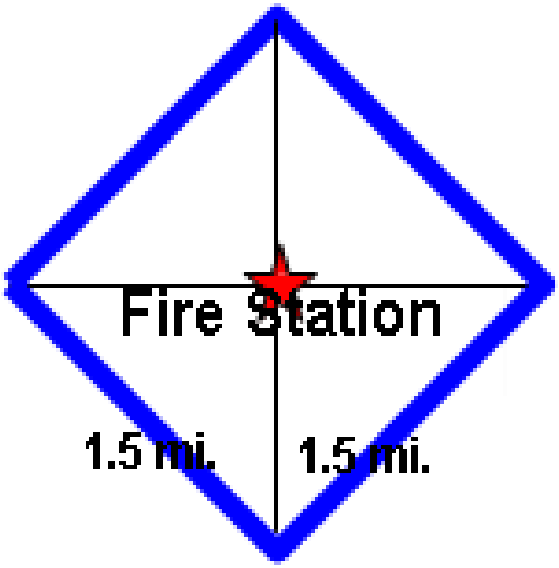
Most of Tulsa – standard three mile diamond

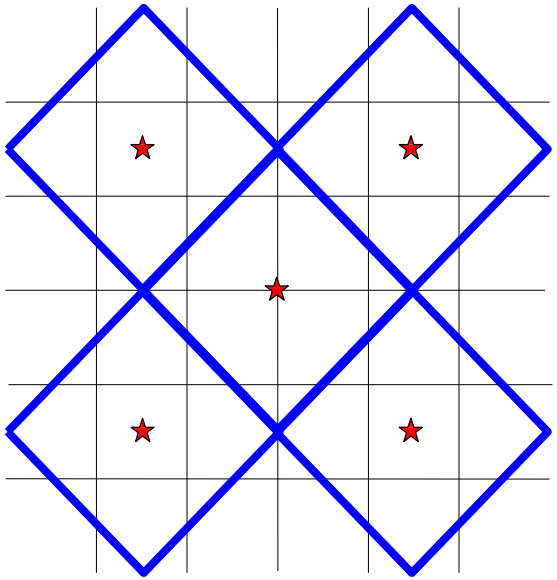
- Methodology provides confirmation of need

Downtown – three closely spaced high-demand stations

Certain outlying areas/perimeter – less closely spaced due to population density and actual incident experience

“Standard Station Spacing”





Resource Allocation Report – Station Spacing

Metropolitan downtown spacing

Closely spaced stations with overlapping coverage – 1 to 1.5 driving miles between stations

Urban

Standard spacing – three driving miles between stations

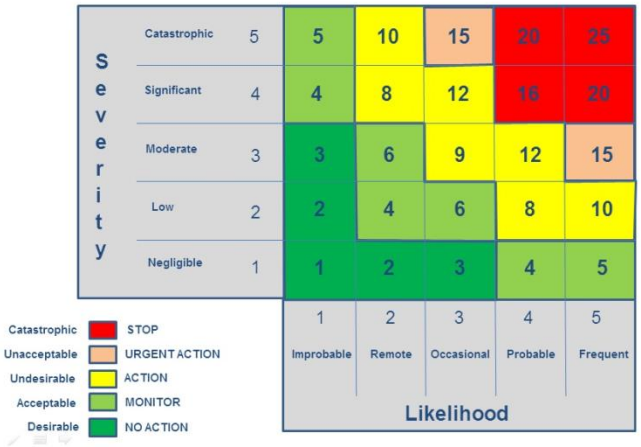
Suburban

Low density spacing – up to four driving miles between stations (depending on risk)

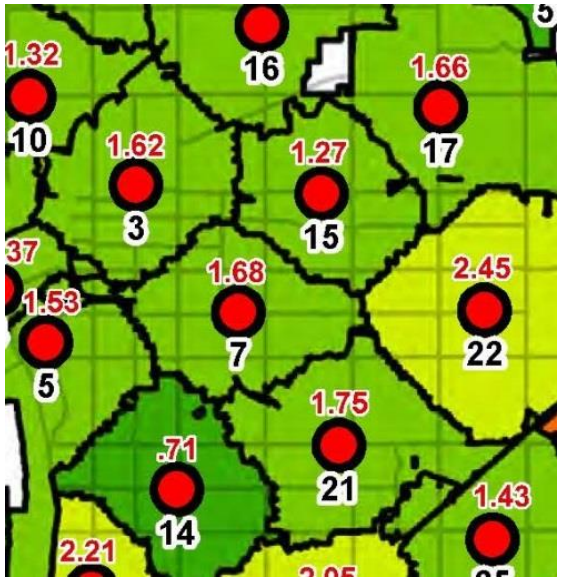
Rural

Up to 10 driving miles between stations

What is normal or “acceptable” risk?



Fire Stations 3, 7, & 21



Current Fire Stations Proposed Move or New

What it means:
Effect of East Side Station 33
(In progress)

= normal or acceptable risk

Mayor/Council Goals

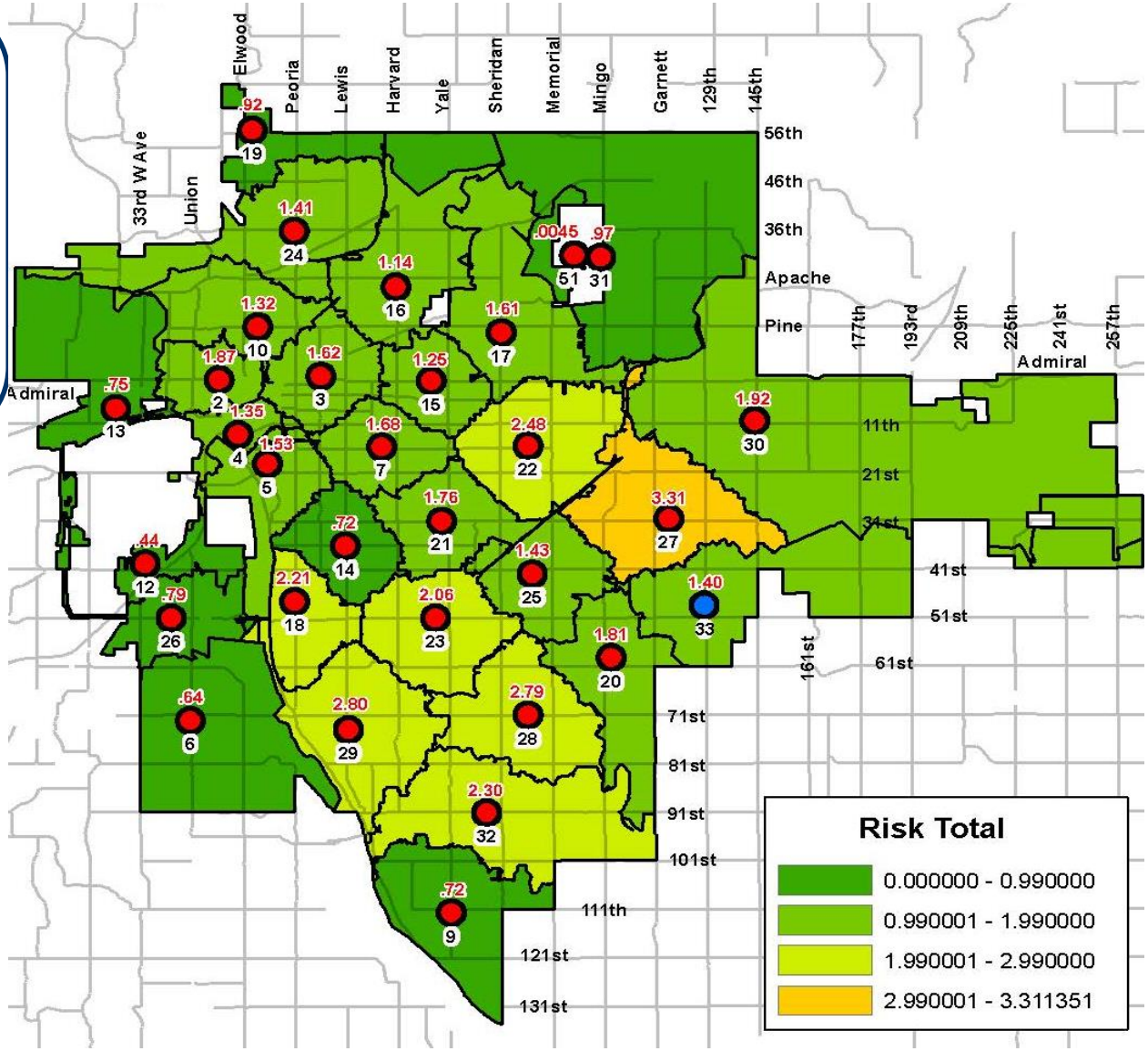
Well-Being

The City Experience

Status

East Tulsa

South Tulsa



Current Fire Stations Proposed Move or New

What it means:

East Side - Proposed

- New 33 (in progress)
- New 34
- Move 27

= normal or acceptable risk

Mayor/Council Goals

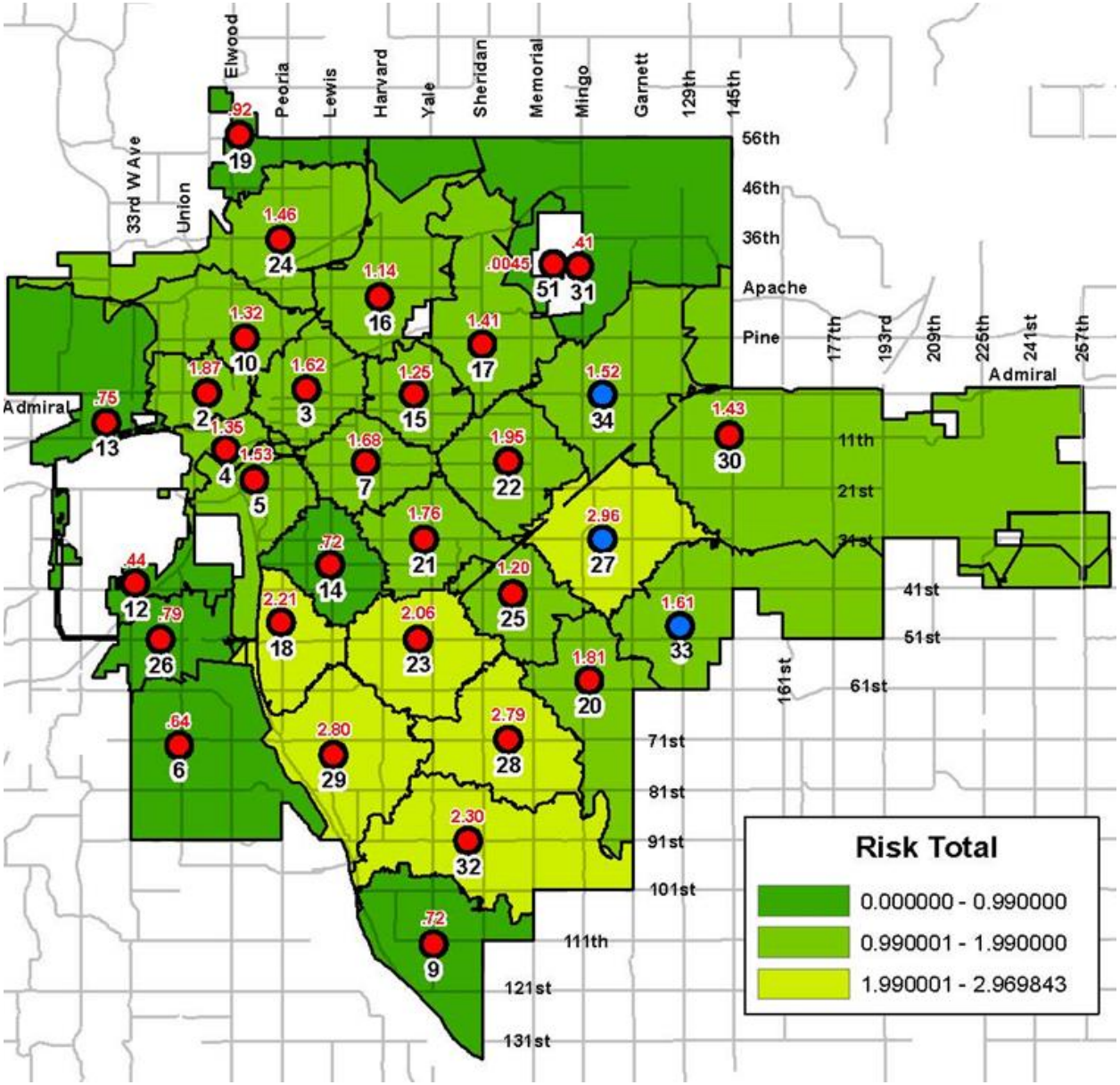
Well-Being

The City Experience

Status

East Tulsa

South Tulsa



Current Fire Stations Proposed Move or New

What it means:
South Side
- Move 18
- Move 23

= normal or acceptable risk

Mayor/Council Goals

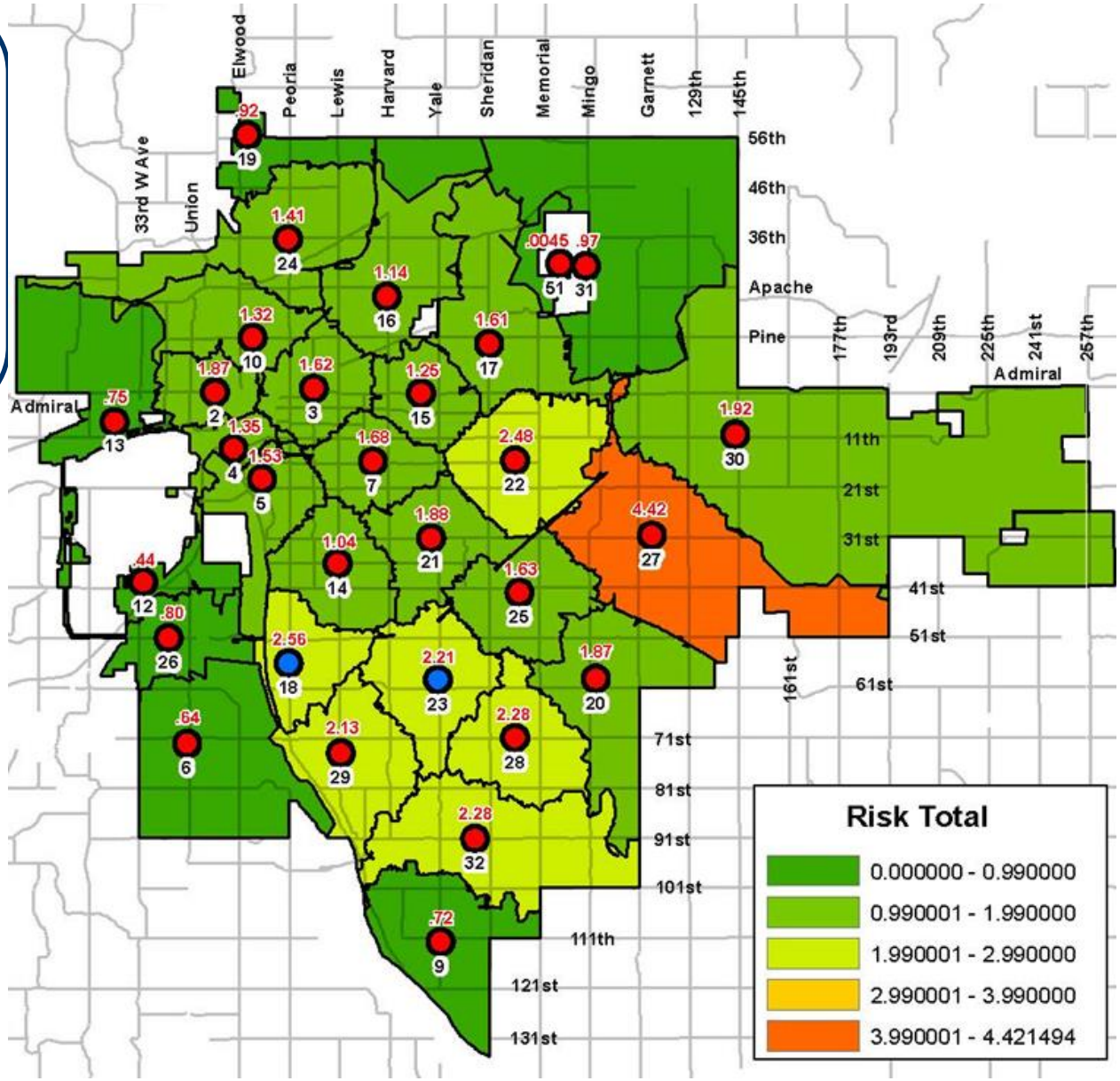
Well-Being

The City Experience

Status

East Tulsa

South Tulsa



Current Fire Stations Proposed Move or New

What it means:
Citywide – optimal
- Least moves or new stations

= normal or acceptable risk

Mayor/Council Goals

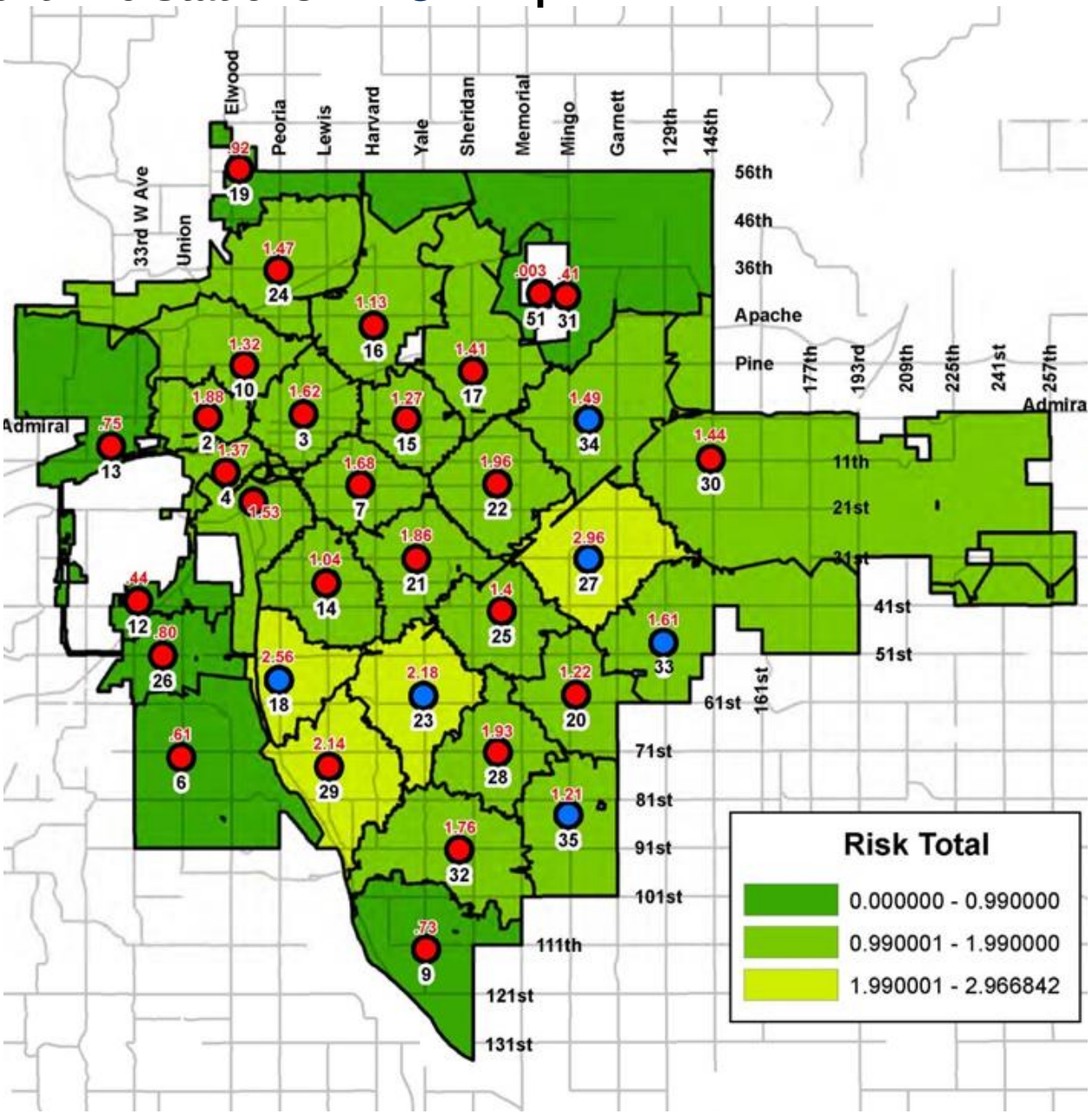
Well-Being

The City Experience

Status

East Tulsa

South Tulsa



Effects – Risk Reduction

Station	Current / As Is Risk	Future State Risk
14	.71	1.04
18	2.21	2.56
20	1.84	1.22
22	2.45	1.96
23	2.05	2.18
27	4.41	2.96
28	2.77	2.18
29	2.84	2.14
30	1.92	1.44
32	2.30	1.76
33	N/A	1.61
34	N/A	1.49
35	N/A	1.21

Strategic Direction & Actions

Strategy	Action Plan / Next Steps	By When	Hurdles
Strategy #1	Construction: New 33 (formerly “8”) Personnel funded by Vision	July 2019	Zoning
Strategy #2	Funding: New 34 (no personnel) Move 27 (no personnel) Move 18 (no personnel)		
Strategy #3	Funding: Move 23 (no personnel) New 35 (Vision personnel)		