

# ***PEDESTRIAN CRASH ASSESSMENT***

URBAN DATA PIONEERS COHORT 6  
SEPTEMBER 5, 2019 - NOVEMBER 21, 2019





# PROJECT OVERVIEW

FOR EACH CRASH, DETERMINE:

- Crash distance from a legal crosswalk (any street intersection)
- Crash distance from the closest pedestrian focused crossing (where cars are required to make a full stop including stop signs and traffic lights)



**15 PEDESTRIANS**

killed each year in pedestrian-vehicle crashes, per ODOT SAFE-T database



**1.75x**

**NATIONAL AVERAGE**



**BPAC** Bicycle and Pedestrian Advisory Committee

Began an assessment of these crashes to identify underlying characteristics



# DATASETS



- City of Tulsa Signalized Intersections
- TPD Crash Reports (TRACIS)
- ODOT SAFE-T Crash Reports

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## DATA LIMITATIONS:

- Not all marked crosswalks included
- Access to data due to PII (resolved)
- Location resolution is 1/2 block



# PROCESS

1

Use ArcGIS Network Analysis to find the shortest route from crash to signalized intersection

2

Limit to 1/2 mile routes

3

Use Excel to group by distance

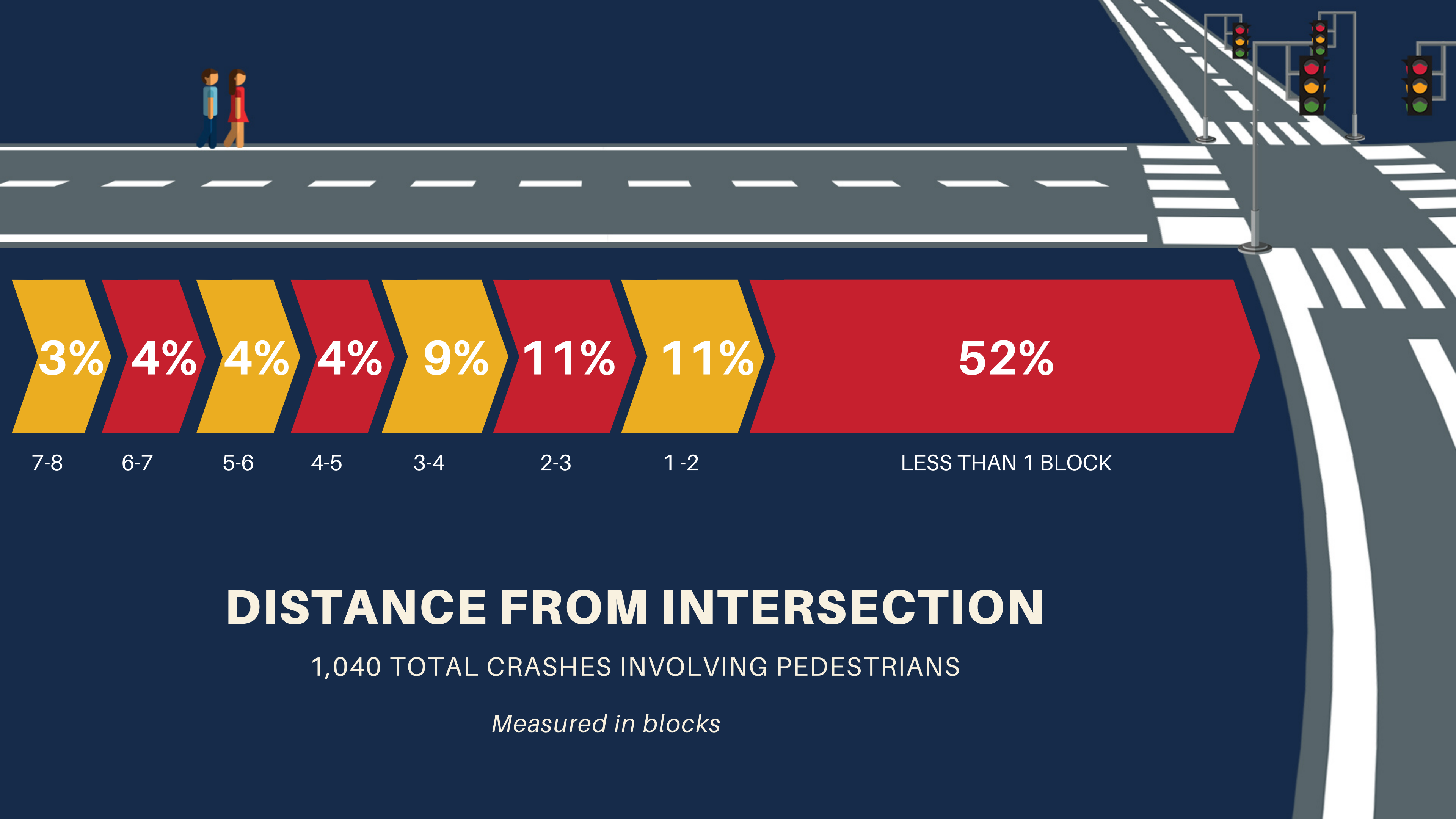
4

Examine results

5

Develop recommendations based on the findings







January	2	1	0	0	0	1	2	6	2	2	1	1	3	2	2	5	8	8	10	11	4	3	3
February	5	0	1	1	0	1	3	4	0	2	3	4	1	1	6	6	5	6	6	6	5	7	5
March	3	3	1	0	0	0	1	3	4	1	2	2	2	3	3	5	6	6	3	8	13	3	4
April	4	1	1	2	1	0	1	1	3	2	2	3	8	3	8	8	5	5	5	1	6	5	6
May	9	2	0	1	0	1	1	3	5	4	3	1	2	5	7	11	9	3	5	3	6	5	2
June	3	0	1	1	0	1	2	2	2	1	6	2	7	5	3	8	3	6	3	1	3	7	5
July	3	2	2	0	0	1	1	1	0	3	3	5	3	2	2	1	4	5	1	4	1	6	6
August	7	2	1	0	1	1	2	3	4	0	5	1	2	1	2	6	7	6	5	2	4	4	6
September	8	1	1	1	2	1	2	10	6	3	2	3	1	2	5	5	5	7	4	5	8	8	3
October	1	5	3	1	1	3	4	5	4	1	3	6	1	6	8	16	12	11	2	13	16	8	7
November	10	0	0	0	0	0	1	4	3	1	1	1	5	6	6	6	7	15	16	8	3	5	5
December	2	2	1	0	0	0	5	5	0	5	2	3	3	1	4	10	5	11	17	4	3	2	3
	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00

TIME OF DAY

WITH NOTATION OF SUNRISE & SUNSET



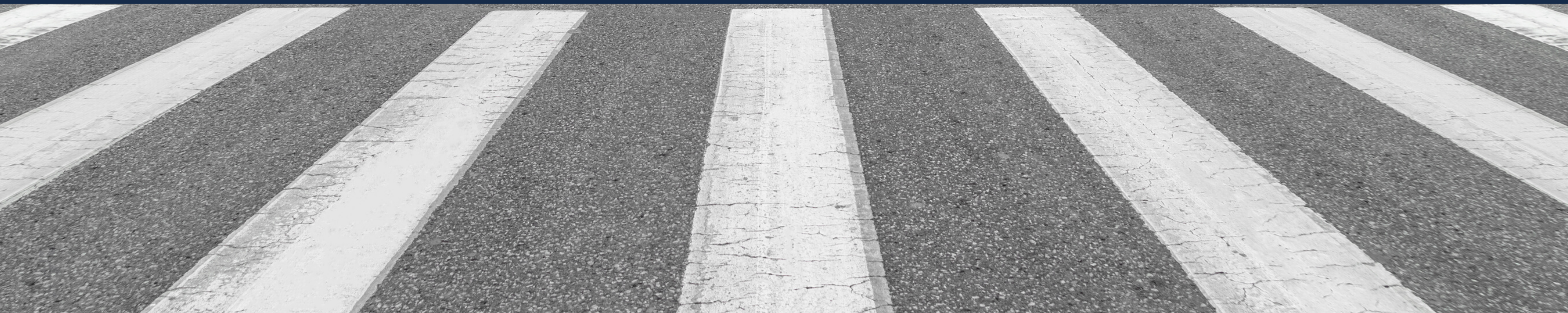
# FINDINGS

1


**DISTANCE ANALYSIS:** • Results point to intersections or near intersections.

2

**TIME ANALYSIS:** • Confirmation that sunset and dusk are factors.  
• A spike at 7:00 am in September correlated to sun alignment with streets.








# **RECOMMENDATIONS**

## **BASED ON DISTANCE ANALYSIS**

- **City of Tulsa prioritize intersection improvements at locations with high incidents of pedestrian-vehicle crashes**
- **Evaluate 1-block behaviors by all parties, including right turns on red lights and mid-block crossings**
  - **Police reports**
  - **Secondary research**
  - **Manual observation at intersections with high numbers of incidents**





# **RECOMMENDATIONS**

## **BASED ON TIME ANALYSIS**

- **Conduct additional research on sunlight glint**
  - **Similar results for Tulsa and Oklahoma City**
  - **Are we unique based on position in time zone, latitude, street orientation?**
- **Identify non-infrastructure opportunities, including public education and reflective clothing.**



A close-up photograph of a person's hands typing on a silver laptop keyboard. The laptop is open, and a smartphone is lying on the desk in front of it. There are some papers or documents scattered around the laptop. The background is blurred, showing what appears to be a person sitting at a desk in a dimly lit room.

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