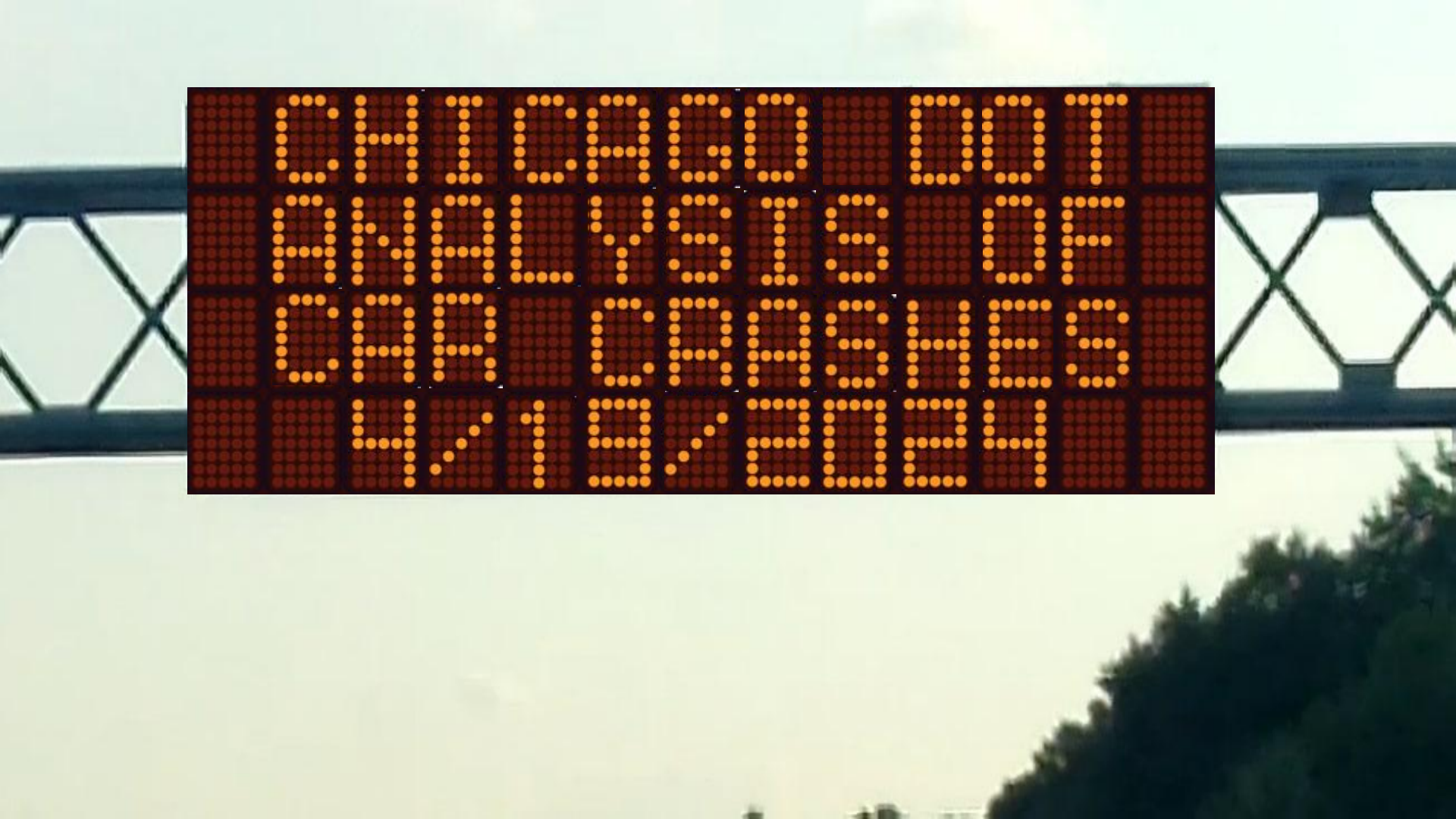
CHICAGO DOT
ANALYSIS OF
CAR CRASHES
4,183,284

The Team

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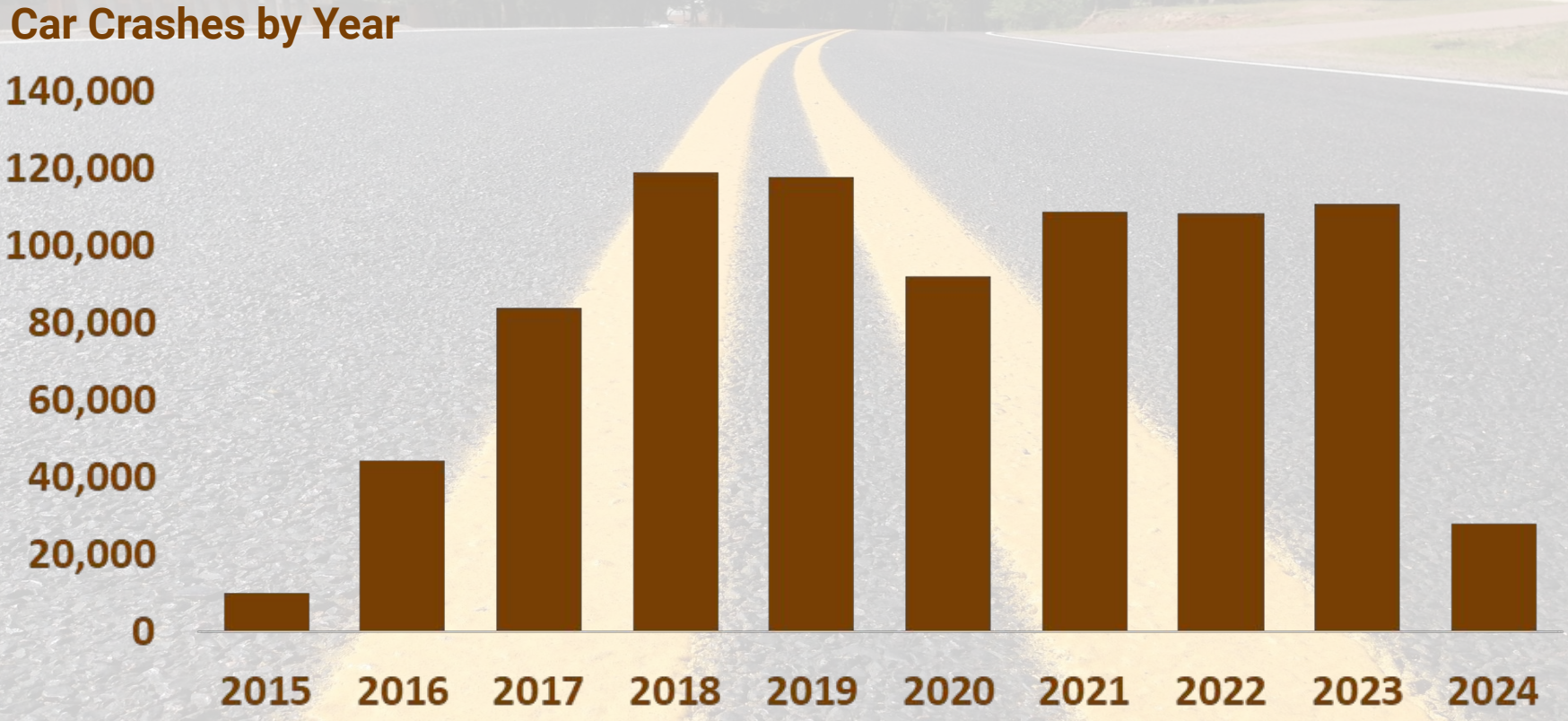
Key Findings

- Failing to use available safety measures: **678% greater odds**
- Incapacitated drivers: **228% greater odds**
- *Driving at night: **90% greater odds***
- *Crashes in disadvantaged areas: **28% greater odds***

Agenda

- Business Problem
- The Data
- Analysis
- Conclusions
- Future Steps

Mayor's Task: Reduce the Deadliness of Crashes



The Data

The Data

- Created in 2010, crash data added in 2015, widespread adoption in 2017
- Over 820,000 crashes, more added every day

Limitations

- Recorded by police officers onsite
- No information on safe trips

Analysis

Analysis

Our Target: Crash results in fatality or severe injury

Our Model: Logistic regression estimates odds that an outcome will happen

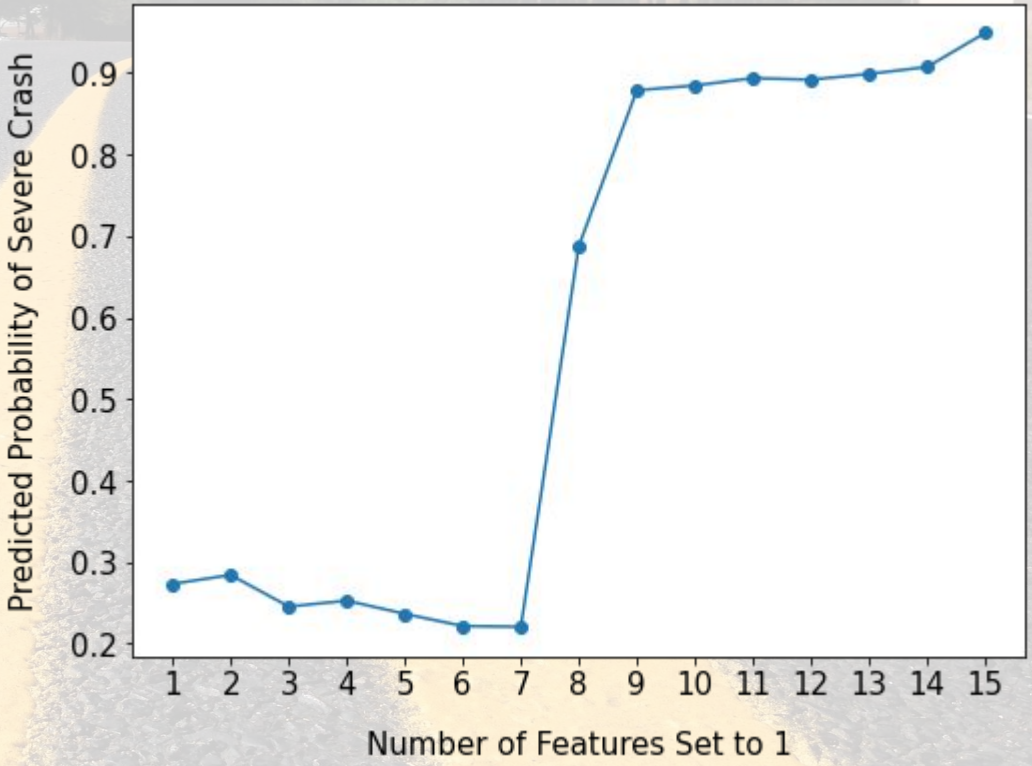
Our Predictors: 11 variables

Our Metric: Recall, measures correct predictions

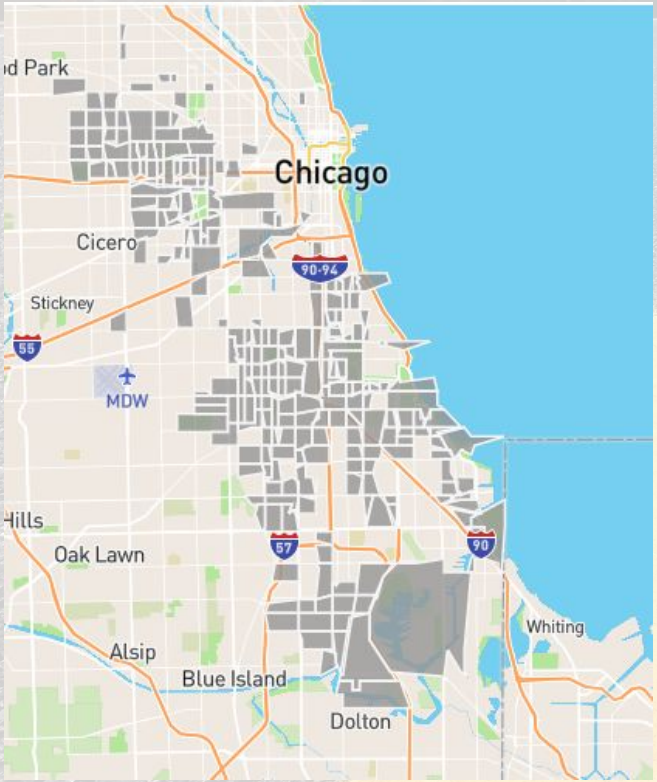
	Severe Crash Not Predicted	Severe Crash Predicted
Severe Crash Did NOT Happen	113,927	46,437
Severe Crash DID Happen	800	2,145

Model Results

Feature	Odds Incr
Poor Safety	678.3%
Incapacitation	228.7%
Night-time (v. Midday)	90.0%
SDA	28.4%
Morning Rush (v. Midday)	10.2%
Summer (v. Spring)	9.7%
Evening Rush (v. Midday)	7.9%
Autumn (v. Spring)	5.8%
Weekend	5.6%
Bad Weather	4.0%
Slippery	-0.5%
Winter (v. Spring)	-2.1%
Curves / Unlevel	-8.1%
Poor Visibility	-8.4%
Malfunctioning Stoplights	-18.1%



Socioeconomically Disadvantaged Areas



- **SDAs:** Areas of economic need based on three criteria
  - **Household Income**
  - **Poverty Rate**
  - **Unemployment Rate**

Conclusion

Recommendations

- **SDA:** Quality of services → location
- **Night Driving**: Large negative effect on car crashes
- **Invest in the Tech:** Detect distracted driving

Future Steps

Future Steps

- Test the effect of hospital proximity
- Track EV models separately
- Differentiate risks →Drivers vs pedestrians & cyclists

Questions?

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