

DETERMINING TRAFFIC ENFORCEMENT STRATEGIES  
USING A SPACE-TIME CUBE

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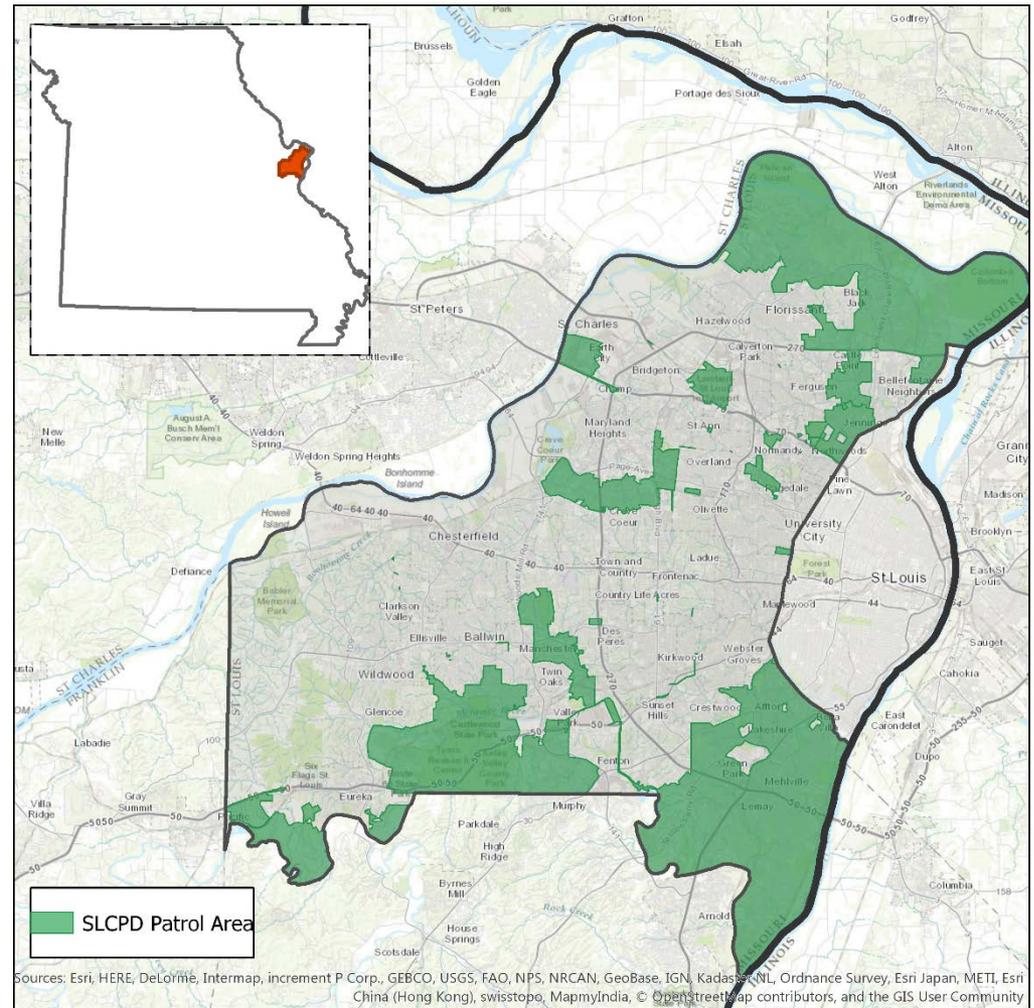
2017

# ABOUT ME

- Analyst with SLCPD 2+ years
  - 3 analysts with specific geographic locations and specialized units
  - My areas: low crime, more specialized units and admin analysis
  - Highway Safety Unit: crash and DWI analysis regularly
  - Work for other municipalities and present data analysis regionally

# ST LOUIS COUNTY POLICE DEPARTMENT

- Largest department in county
- 90 municipalities
- 50 or so police departments
- patrol 400k of 1.1 million of population
- Nearly 900 sworn



# PROBLEM

- **Came from Highway Safety Unit**
  - Responsible for traffic safety in patrol areas but can also go outside of SLCPD patrol areas
- **Needed to put an officer from 12pm to 10pm to patrol for crash prevention**
- **Would need to many maps that couldn't indicate time very well**
  - Creates patrol strategy to place officer at highest crash locations at certain times

# USING "CREATE SPACE TIME CUBE"

Geocoded/XY shapefile

Field with date AND time

Can change what date/hour you want to be "near ground"

What type of grid?

Geoprocessing

Create Space Time Cube

Parameters | Environments

\* Input Features

\* Output Space Time Cube

\* Time Field

Template Cube

Time Step Interval: Seconds

Time Step Alignment: End time

Distance Interval: Feet

Summary Fields (+)

Field

Statistic

Fill Empty Bins with

Aggregation Shape Type: Fishnet grid

What time interval do you want the cubes to represent?

How big should the bins be?



# VISUALIZE AND STYLE

- Could only do a count of bins → no neighbors for analysis
- Use familiar coloration- green to red like stop light
- Using for strategy so not interested in where crashes aren't
- -make “green” bins more transparent so its easier to read “red” bins

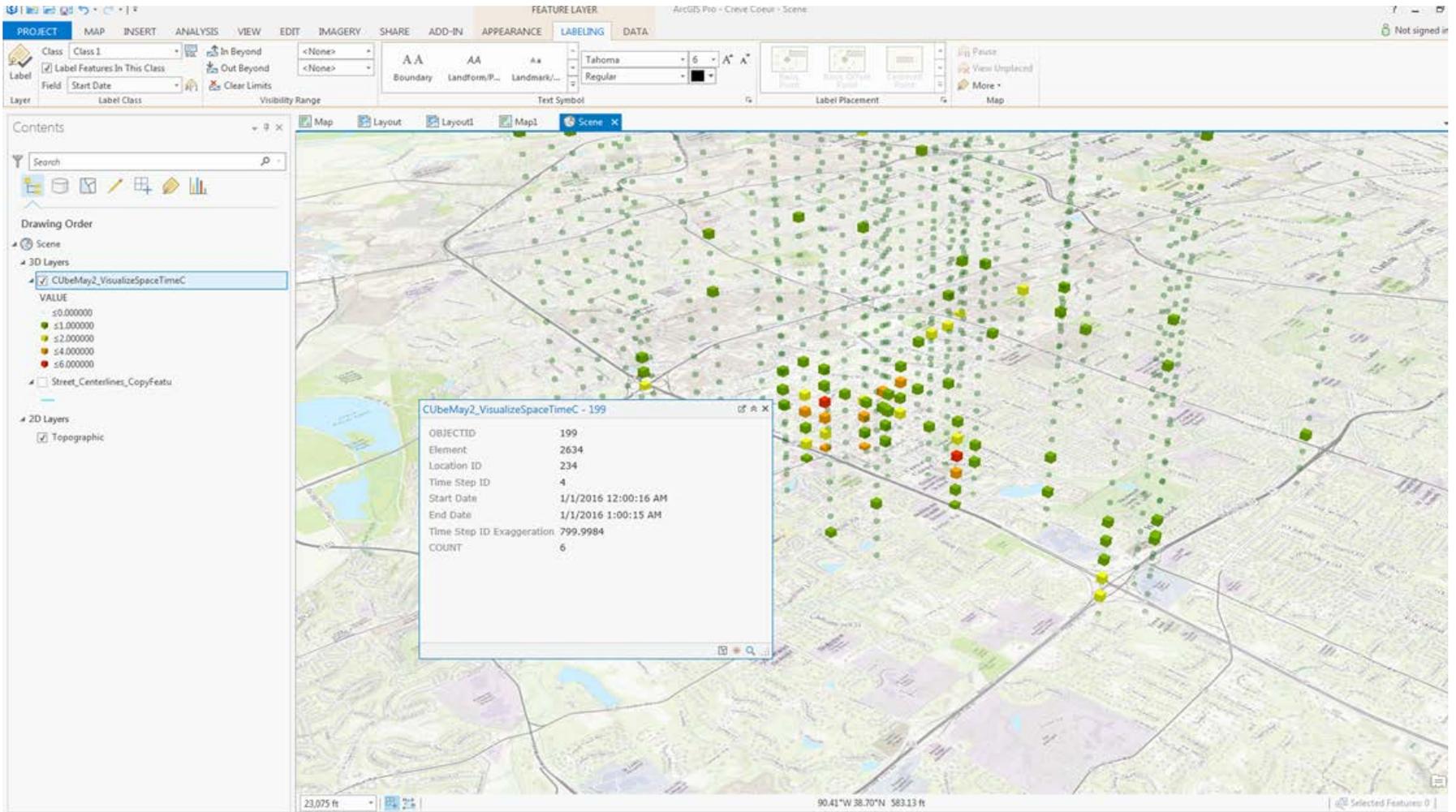


# BETA TEST

Animation with Exploration



# USE FOR DWI SATURATION PATROLS



QUESTIONS?

