



# UNFORESEEN COVID-19 IMPACTS TO INDIANAPOLIS TRAFFIC



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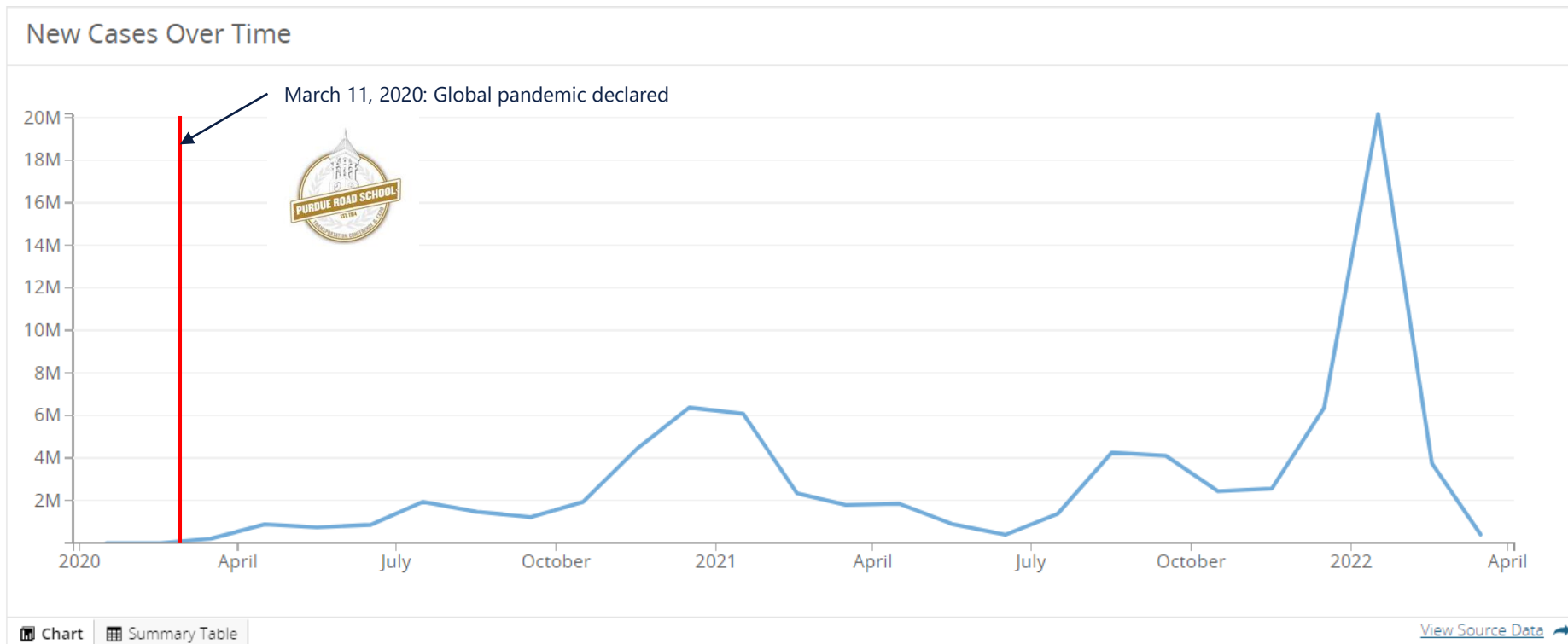


- ✔ National trends during/after COVID-19
- ✔ How COVID-19 impacted Indianapolis
- ✔ Case study
- ✔ Discussion



# NATIONAL TRENDS DURING COVID-19

*Where were we?*

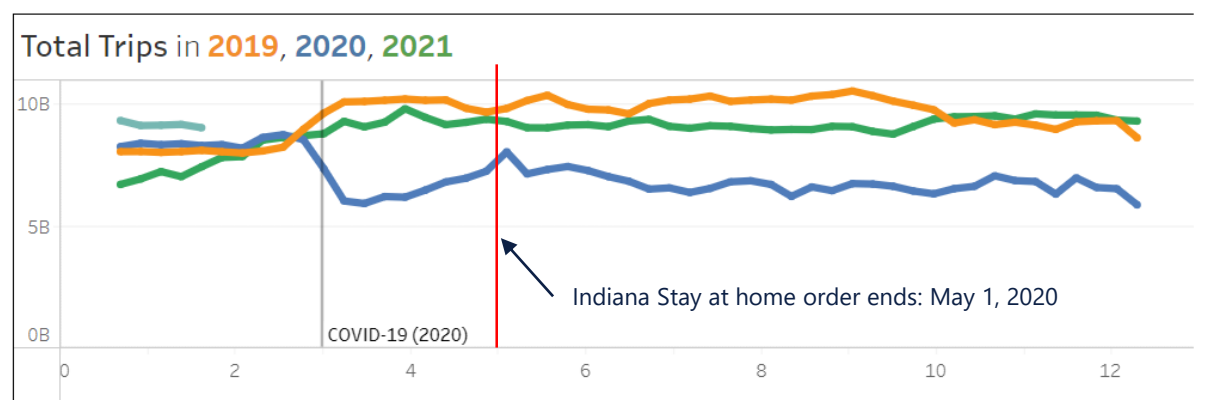
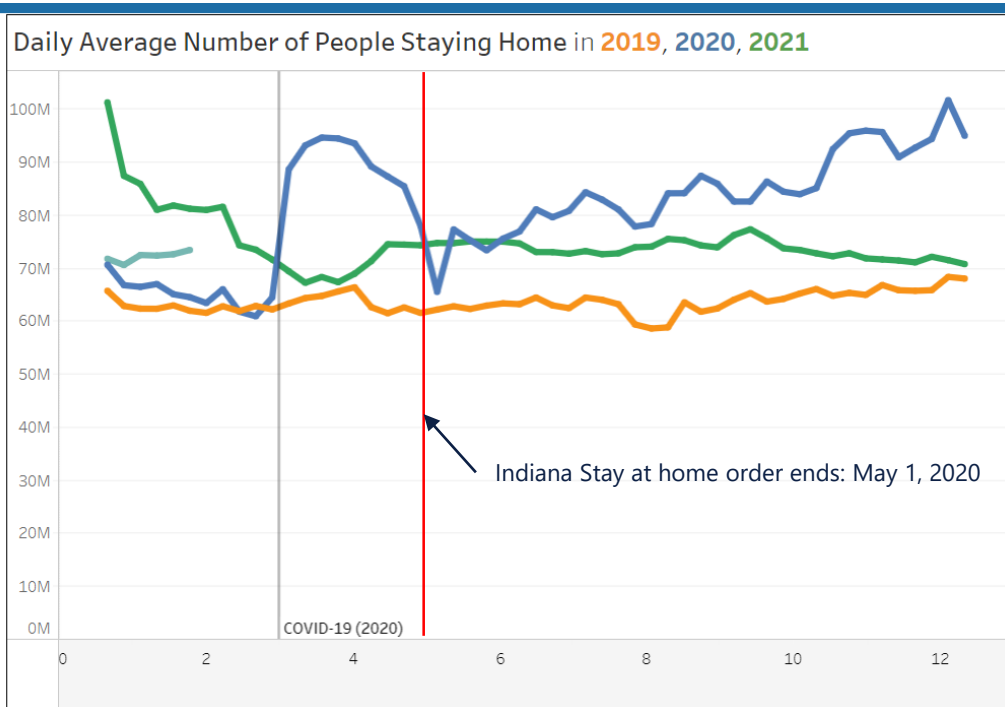


Source: *Data.cdc.gov*



# NATIONAL TRENDS DURING COVID-19

*Where were we?*



Source: Bureau of transportation statistics (bts.gov)



## COVID Effects on Transportation ITE Traffic Engineering Council

Ted Trepanier, PE

**The Dallas Morning News**  
By Tom Ichniowski  
11:56 AM on May 21, 2020 (ET)

**As coronavirus results in less traffic, transportation funding in Texas and beyond takes a hit**

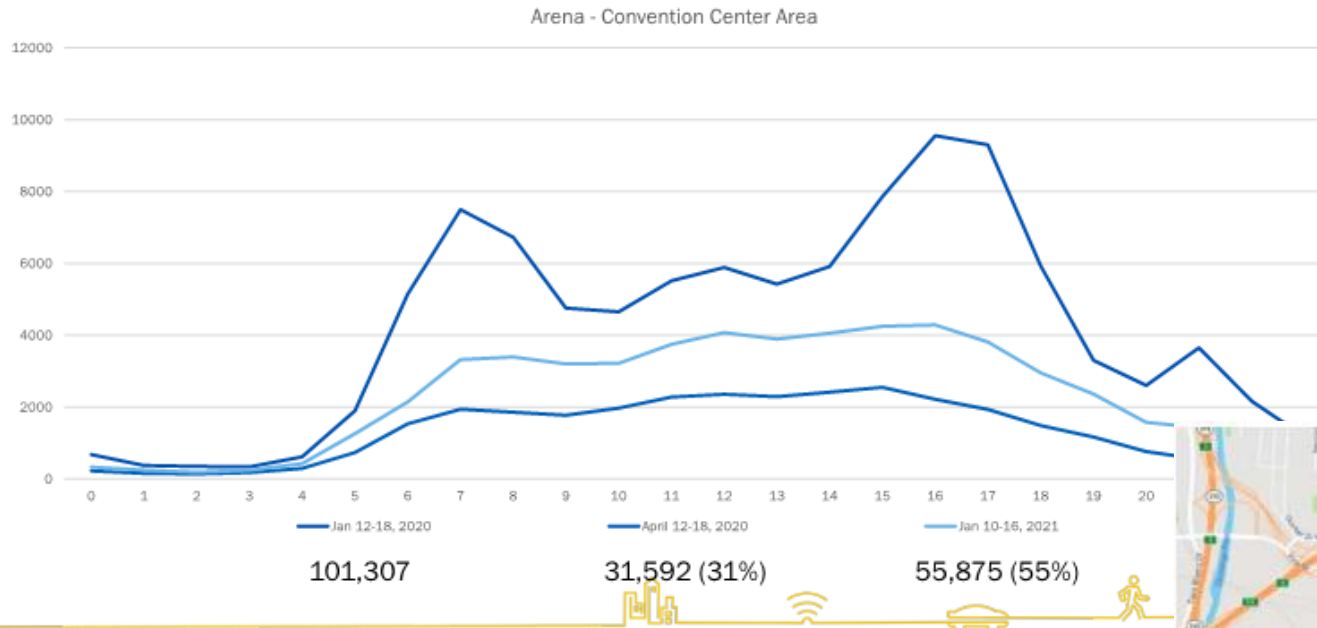
A main revenue source for road construction is gasoline taxes, and we're buying less gasoline.

Source: ITE Webinar: COVID Effects on Transportation. February 10, 2021.



### Nationwide Arena – Convention Center District Trips

Trip Starts by Hour



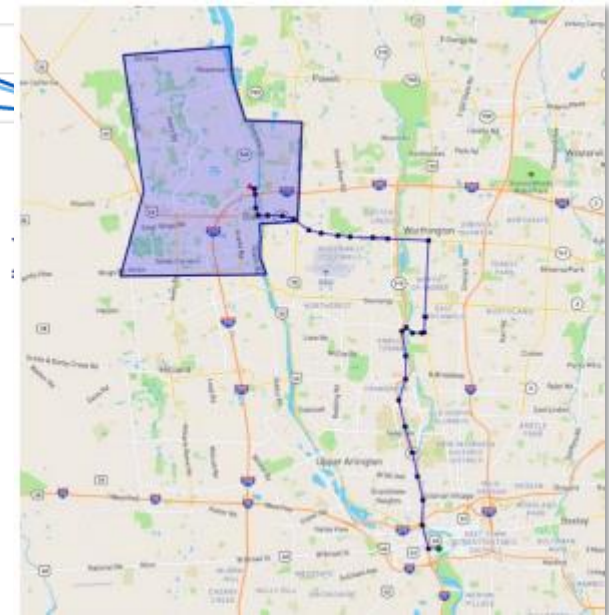
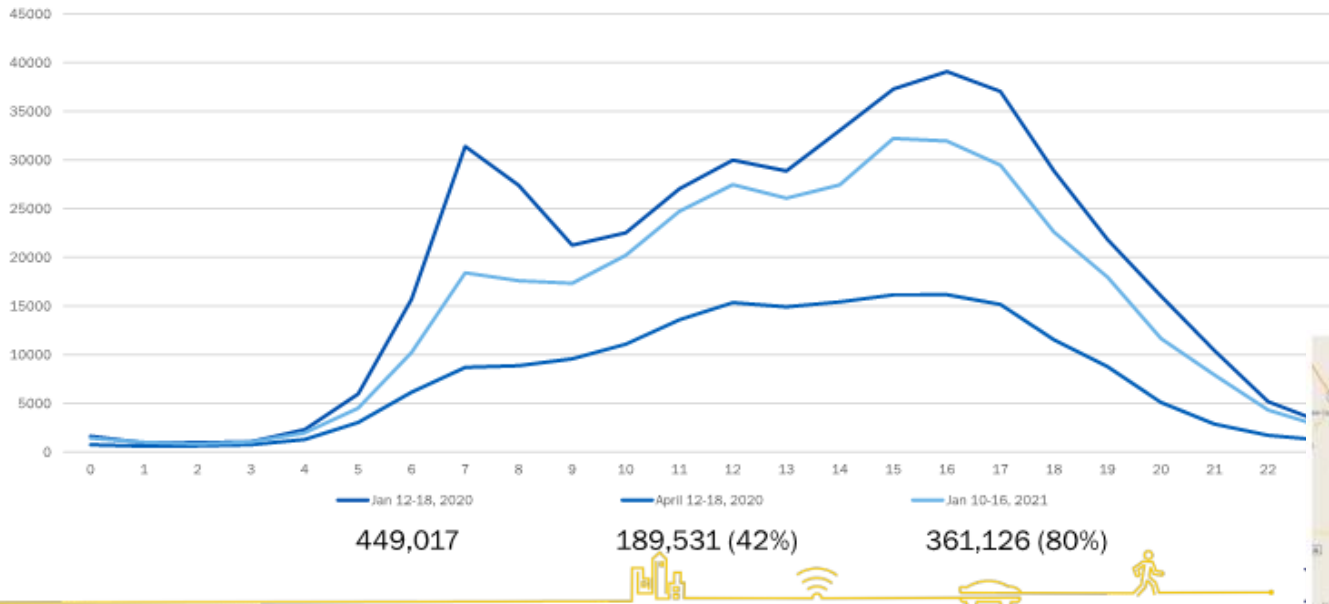
ITE Webinar: COVID Effects on Transportation. February 10, 2021.



### Dublin Residential Area

Trip Starts by Hour

Dublin Residential Area

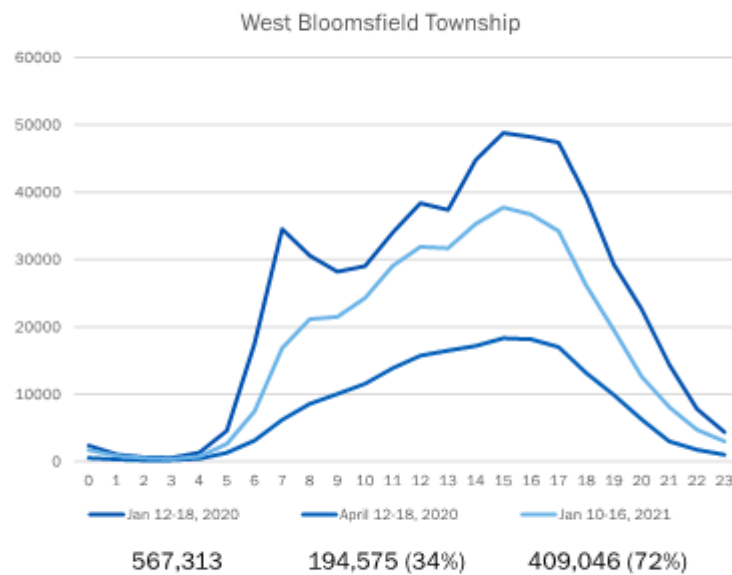
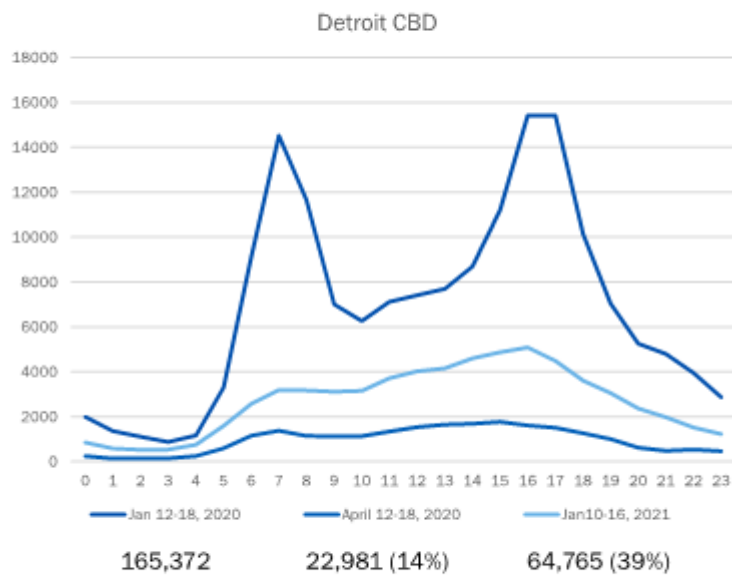


Source: ITE Webinar: COVID Effects on Transportation. February 10, 2021.



### Detroit CBD vs West Bloomfield Township

Trip Starts by Hour



Source: ITE Webinar: COVID Effects on Transportation. February 10, 2021.

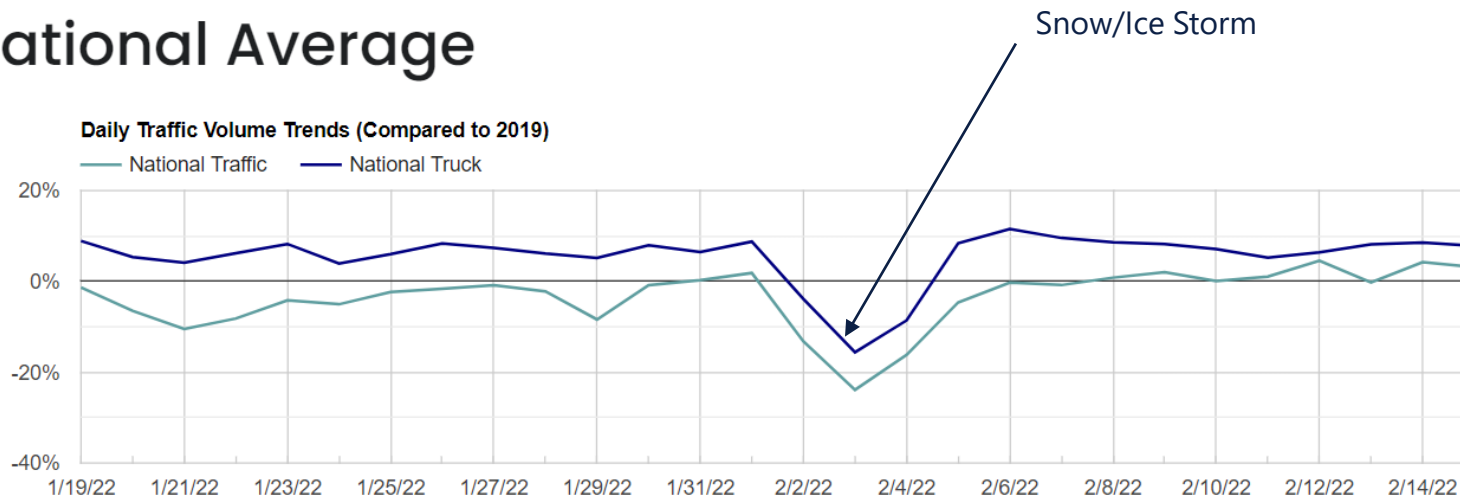




# NATIONAL TRENDS DURING COVID-19

*Where are we now?*

## National Average



Date ▼

National Traffic

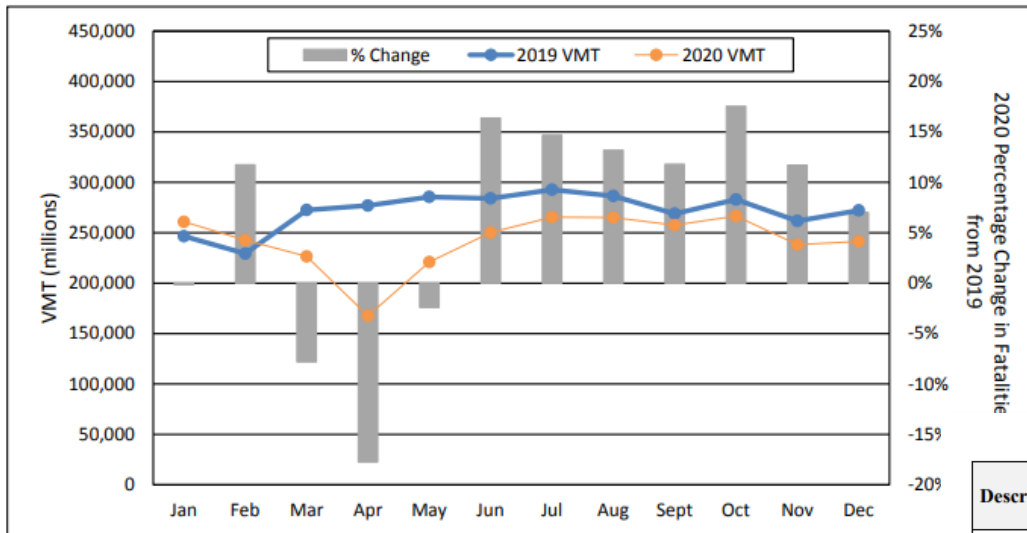
National Truck

Source: MS2



# NATIONAL TRENDS DURING COVID-19

## Safety Impact



Sources: FARS 2019 Final File, 2020 ARF; 2019 Monthly VMT – FHWA’s December 2020 TVT; 2020 Monthly VMT December 2021 TVT

Figure 1. VMT and Percentage Change in Fatalities, by Month, 2019 and 2020

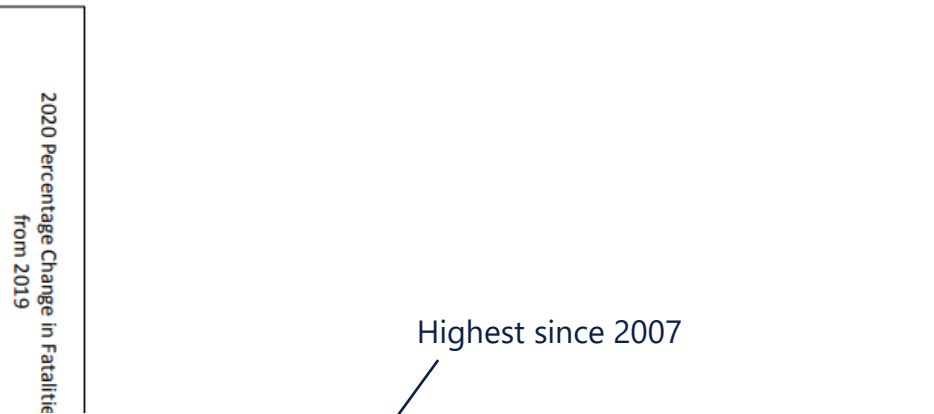


Table 3. Occupants and Nonoccupants Killed and Injured in Traffic Crashes, 2019 and 2020

Description	Killed				Injured			
	2019	2020	Change	% Change	2019	2020	Change	% Change
<b>Total</b>	<b>36,355</b>	<b>38,824</b>	<b>+2,469</b>	<b>+6.8%</b>	<b>2,740,141</b>	<b>2,282,015</b>	<b>-458,126</b>	<b>-17%*</b>
<b>Occupants</b>								
<b>Total Occupants**</b>	<b>23,891</b>	<b>25,536</b>	<b>+1,645</b>	<b>+6.9%</b>	<b>2,516,003</b>	<b>2,093,246</b>	<b>-422,757</b>	<b>-17%*</b>
Passenger Vehicles	22,372	23,824	+1,452	+6.5%	2,447,985	2,034,844	-413,141	-17%*
Passenger Cars	12,355	13,472	+1,117	+9.0%	1,498,083	1,221,335	-276,748	-18%*
Light Trucks***	10,017	10,352	+335	+3.3%	949,902	813,509	-136,393	-14%*
SUVs	4,727	5,075	+348	+7.4%	555,934	486,652	-69,282	-12%*
Pickups	4,213	4,330	+117	+2.8%	266,662	236,264	-30,398	-11%*
Vans	1,025	933	-92	-9.0%	122,928	88,724	-34,204	-28%*
Large Trucks	893	831	-62	-6.9%	45,688	44,934	-754	-1.7%
<b>Motorcyclists</b>								
Motorcyclists	5,044	5,579	+535	+11%	83,814	82,528	-1,286	-1.5%
<b>Nonoccupants</b>								
<b>Total Nonoccupants****</b>	<b>7,420</b>	<b>7,709</b>	<b>+289</b>	<b>+3.9%</b>	<b>140,324</b>	<b>106,241</b>	<b>-34,083</b>	<b>-24%*</b>
Pedestrians	6,272	6,516	+244	+3.9%	75,650	54,769	-20,881	-28%*
Pedalcyclists	859	938	+79	+9.2%	49,057	38,886	-10,171	-21%*

Sources: FARS 2019 Final File, 2020 ARF; CRSS 2019-2020

\*These estimates are statistically significant at the  $\alpha=.05$  level of significance.

\*\*Includes occupants of buses and other/unknown vehicle types.

\*\*\*Includes occupants of other/unknown light-truck vehicle types.

\*\*\*\*Includes other/unknown nonoccupants.

Notes: Changes in fatalities are not tested for statistical significance because they are from a census. The year 2020 was a leap year and there were 112 fatalities on February 29, 2020.

Source: US Department of Transportation’s National Highway Traffic Safety Administration: NHTSA Releases 2020 Traffic Crash Data. March 2, 2022

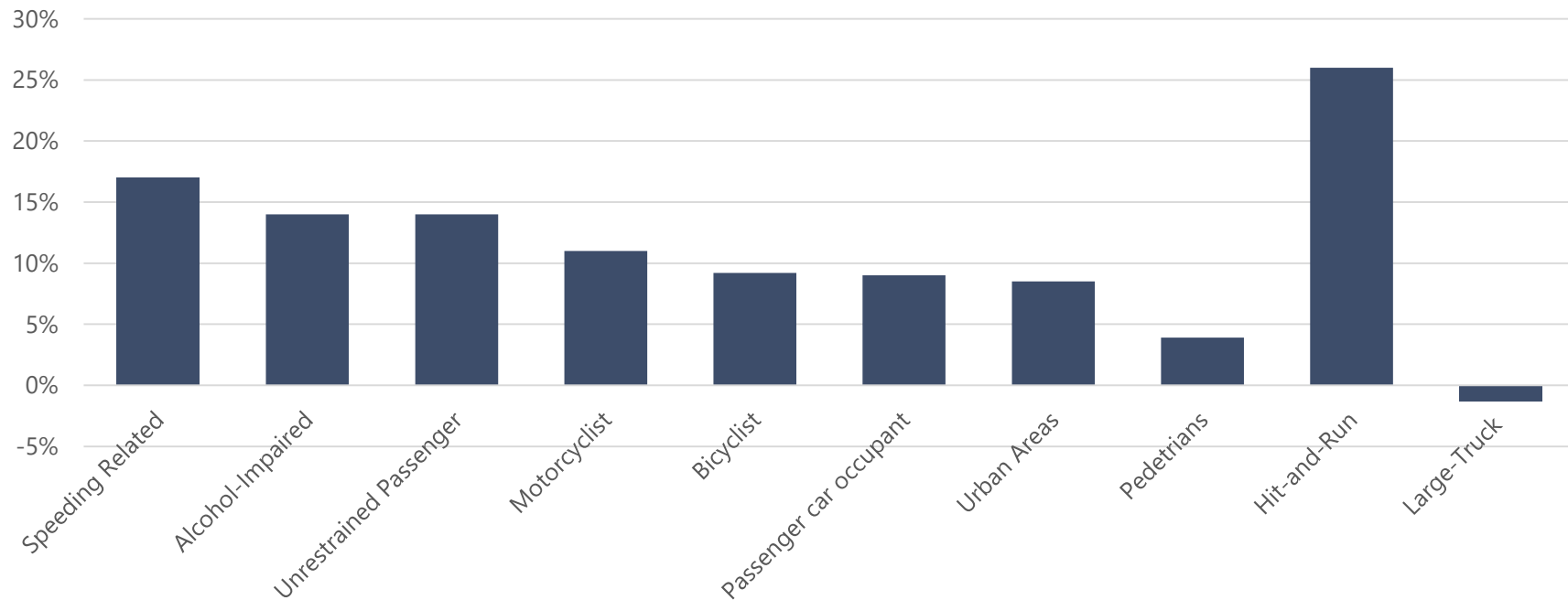


# NATIONAL TRENDS DURING COVID-19

## Safety Impact

Number of crashes and traffic injuries declined overall, fatalities increased by 6.8%

2020 Fatality Crashes compared to 2019



In 45% of fatal crashes, the drivers of passenger vehicles were engaged in at least one of the following risky behaviors: speeding, alcohol impairment, or not wearing a seat belt.

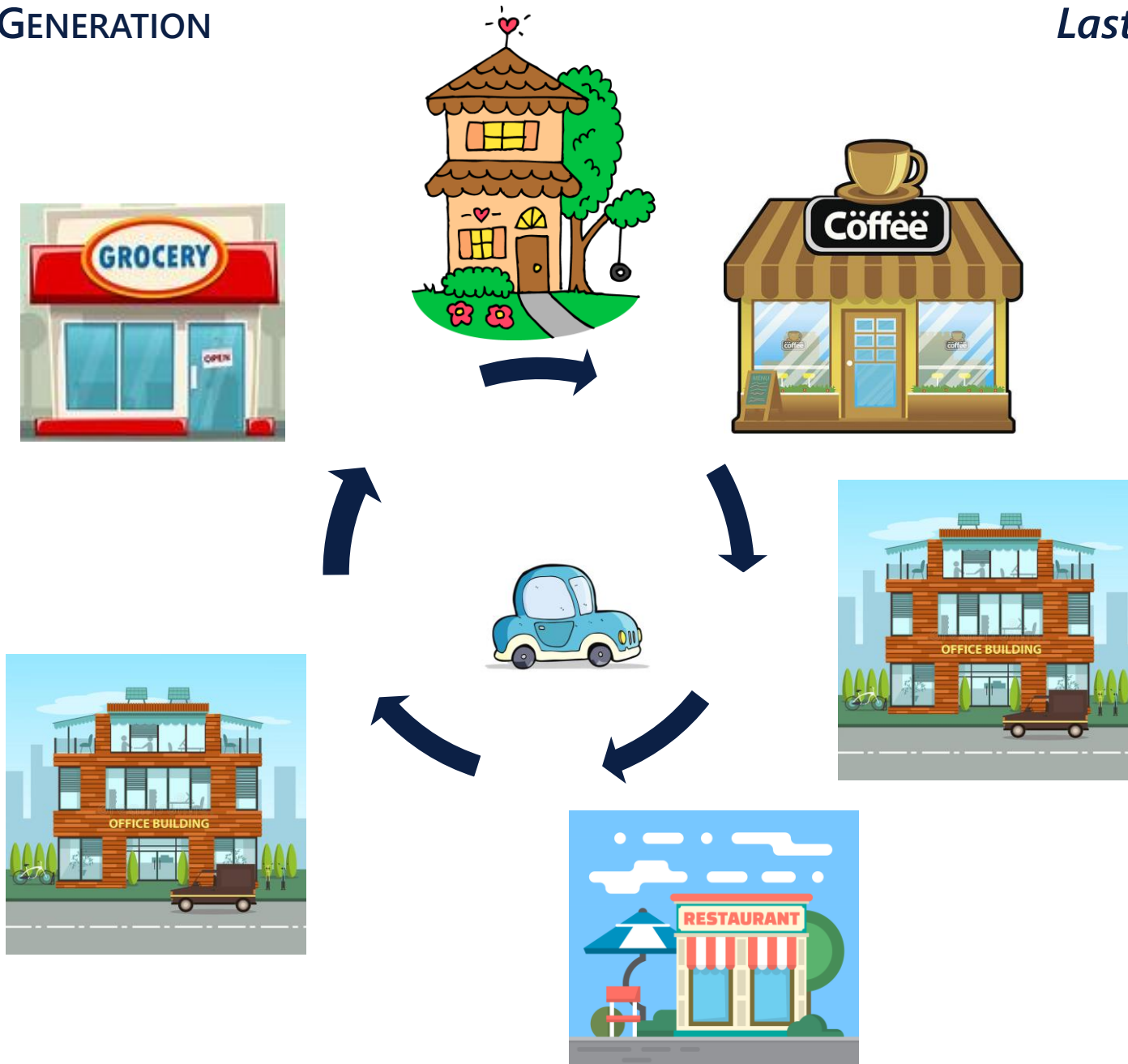
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# NATIONAL TRENDS DURING COVID-19

## TRIP GENERATION

*Lasting Impacts*

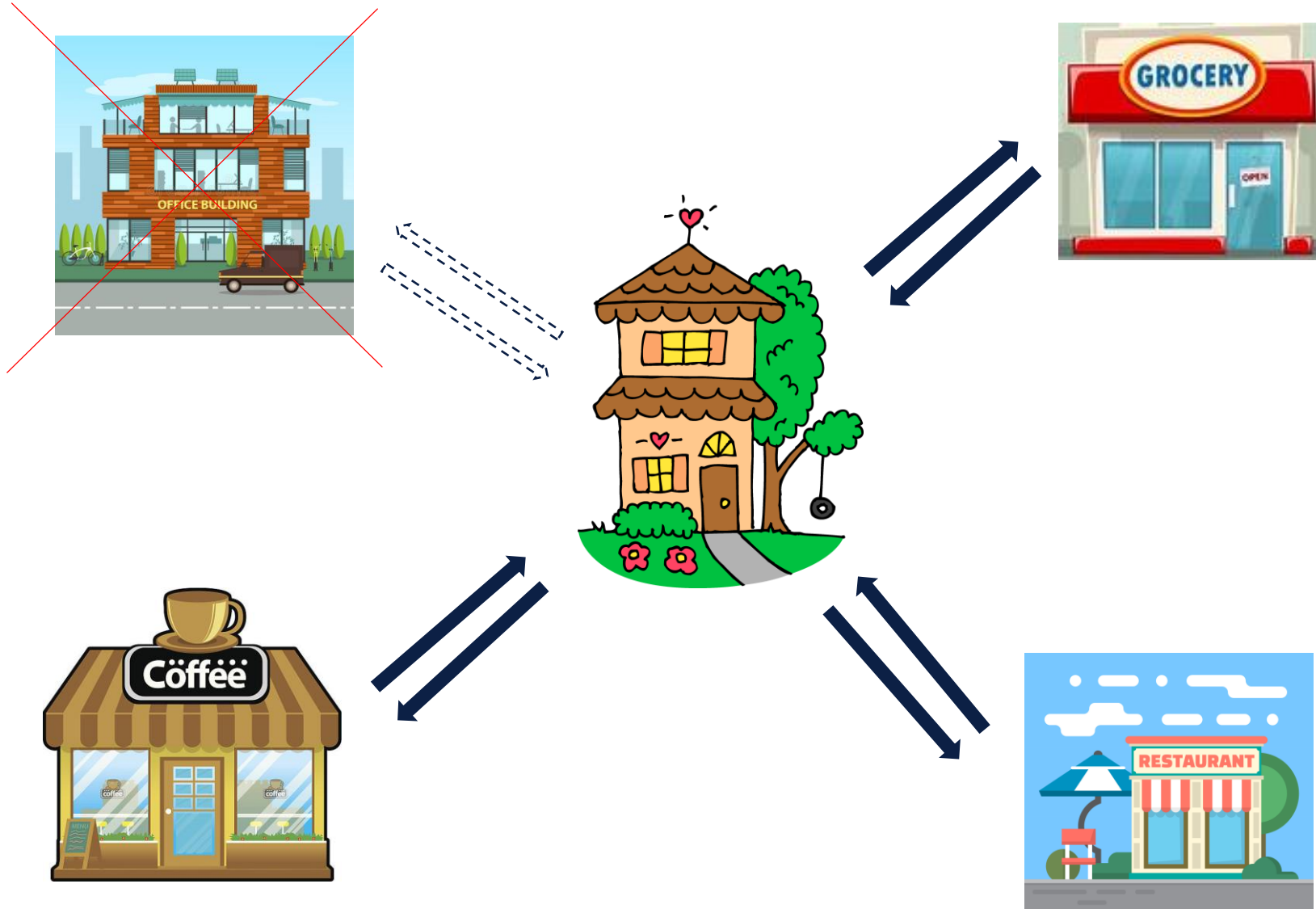




# NATIONAL TRENDS DURING COVID-19

## TRIP GENERATION

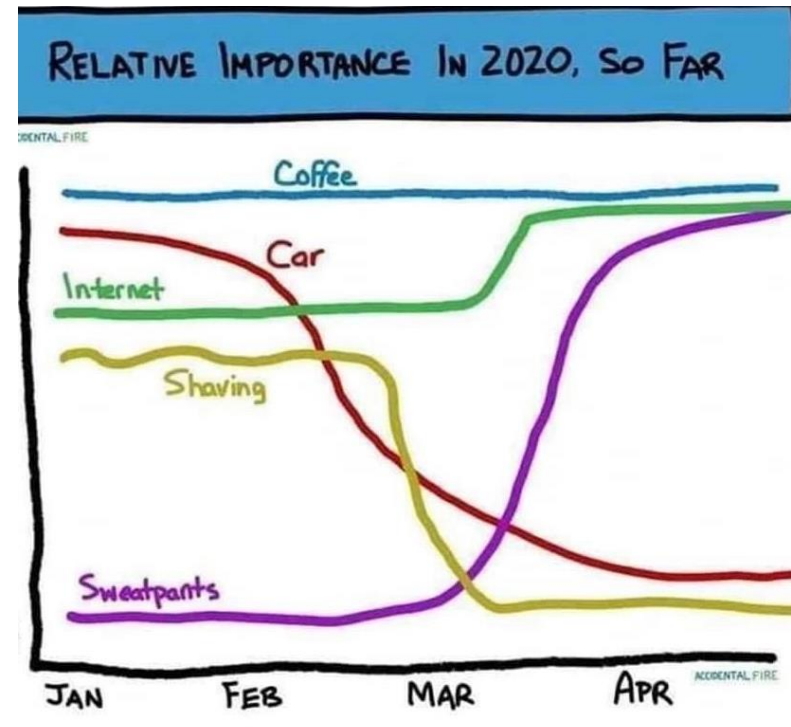
## *Lasting Impacts*









### 2020 Observations

- 1 Traffic volumes are down
  - Downtown
  - Office parks
  - Routes to downtown
- 2 People stay home
- 3 Reckless driving behavior increases





### Traffic volumes are down

-  Routine traffic counts suspended
-  Real estate development continued
-  Traffic Impact Studies needed to be done
-  Adjustment factors varies with location and time

# CITY OF INDIANAPOLIS - INSIGHTS



## Recent Traffic Impact Studies by:

A&F Engineering

American Structurepoint, Inc.

Etica Group

Civil & Environmental  
Consultants

TrafficEngineering.com

Kimley Horn

EMCS, Inc.

WSP







# CITY OF INDIANAPOLIS - INSIGHTS

	Date Completed	Growth Rate	AM COVID	PM COVID
1	Jul-20	1.5%/year	2.5	1.3
2	Nov-20	2%/year	0	0
3	Dec-20	0.5%/year	1.18*	3.03
4	Jan-21	1.5%/ year	1.56	1.26
5	Feb-21	0.9%/year	0	0
6	Feb-21	1%/year	0	0
7	Feb-21	Varied 1%/year to 2%/year and adjacent developments	1.1	1.1
8	Mar-21	Adjacent developments	1.1	1.1
9	Mar-21	2.1% and Adjacent developments	0	0
10	Mar-21	1%/year	2.22	2.22
11	Apr-21	Adjacent developments	1.1	1.1
12	Jun-21	1%/year and adjacent development	1.1	1.1
13	Sep-21	0.5%/year	1.19	1.19
14	Sep-21	0.5%/year	2017 volumes used	2017 volumes used
15	Nov-21	0.25%/year	0	0
Star	Ongoing	0.5%/year	Volumes collected above pre-pandemic levels	

\* Saturday Peak Hour



# CITY OF INDIANAPOLIS - INSIGHTS



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## People stay home

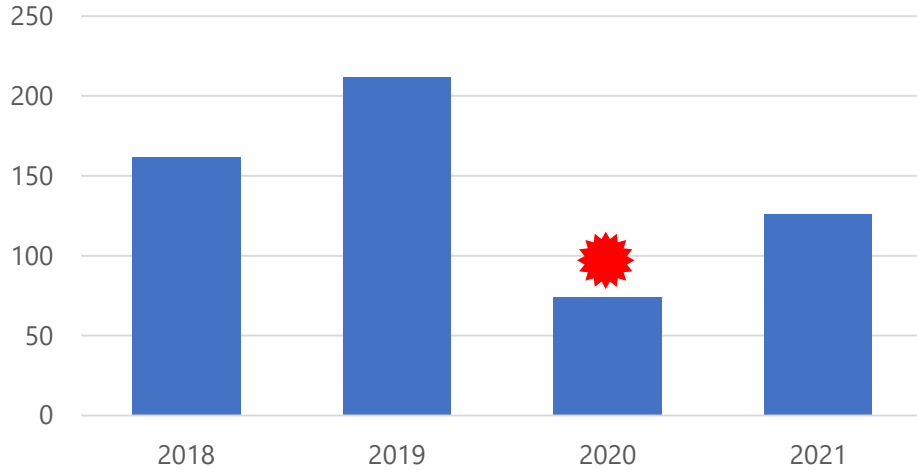
- ! More complaints in residential areas
- ! More complaints about speeding/request for stops
- ! More requests for bicycle infrastructure



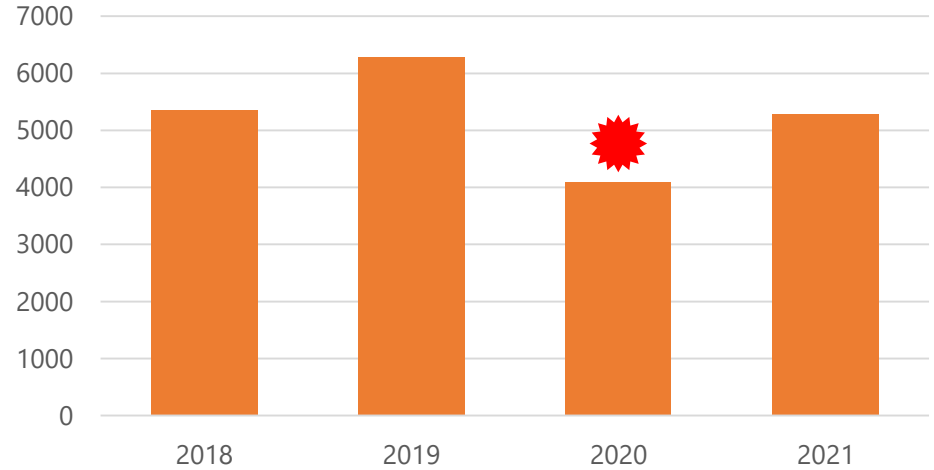
*Photo credit: FHWA*



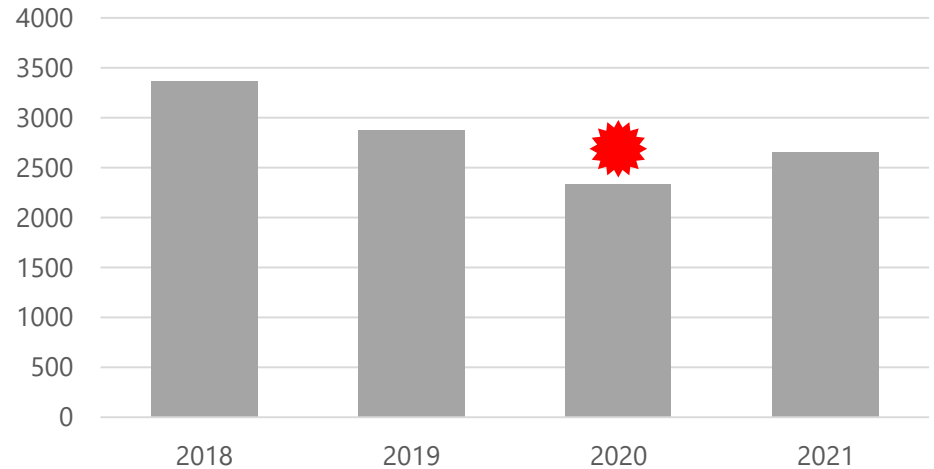
### New Signal Requests



### Signal Maintenance Requests



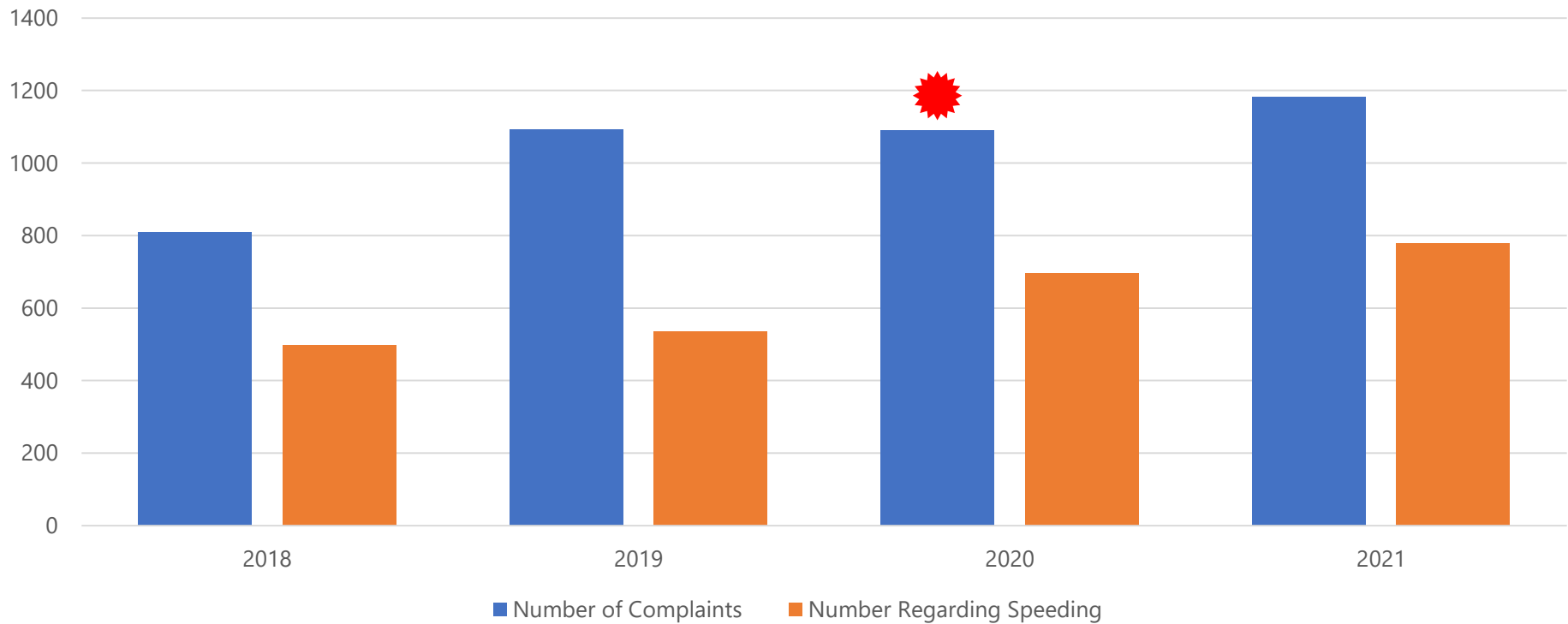
### Sign Maintenance Requests



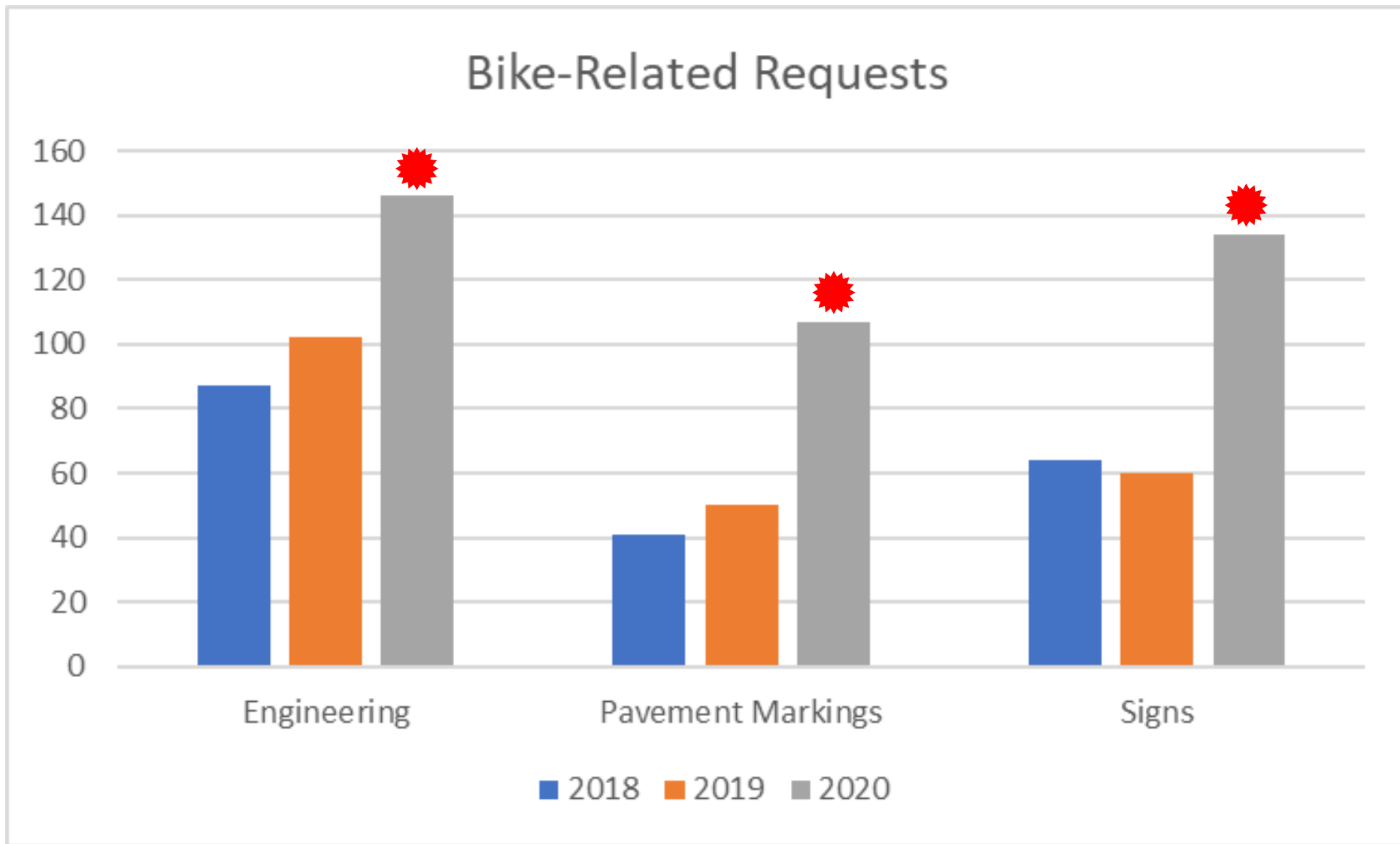
Source: Mayor's Action Center



### New Sign Requests



Source: Mayor's Action Center



Source: Mayor's Action Center





### Reckless driving increases



Anecdotal evidence – less traffic, more speeding



Traffic resumes, speeding and red light running continue



DPW Signal Maintenance – signals down

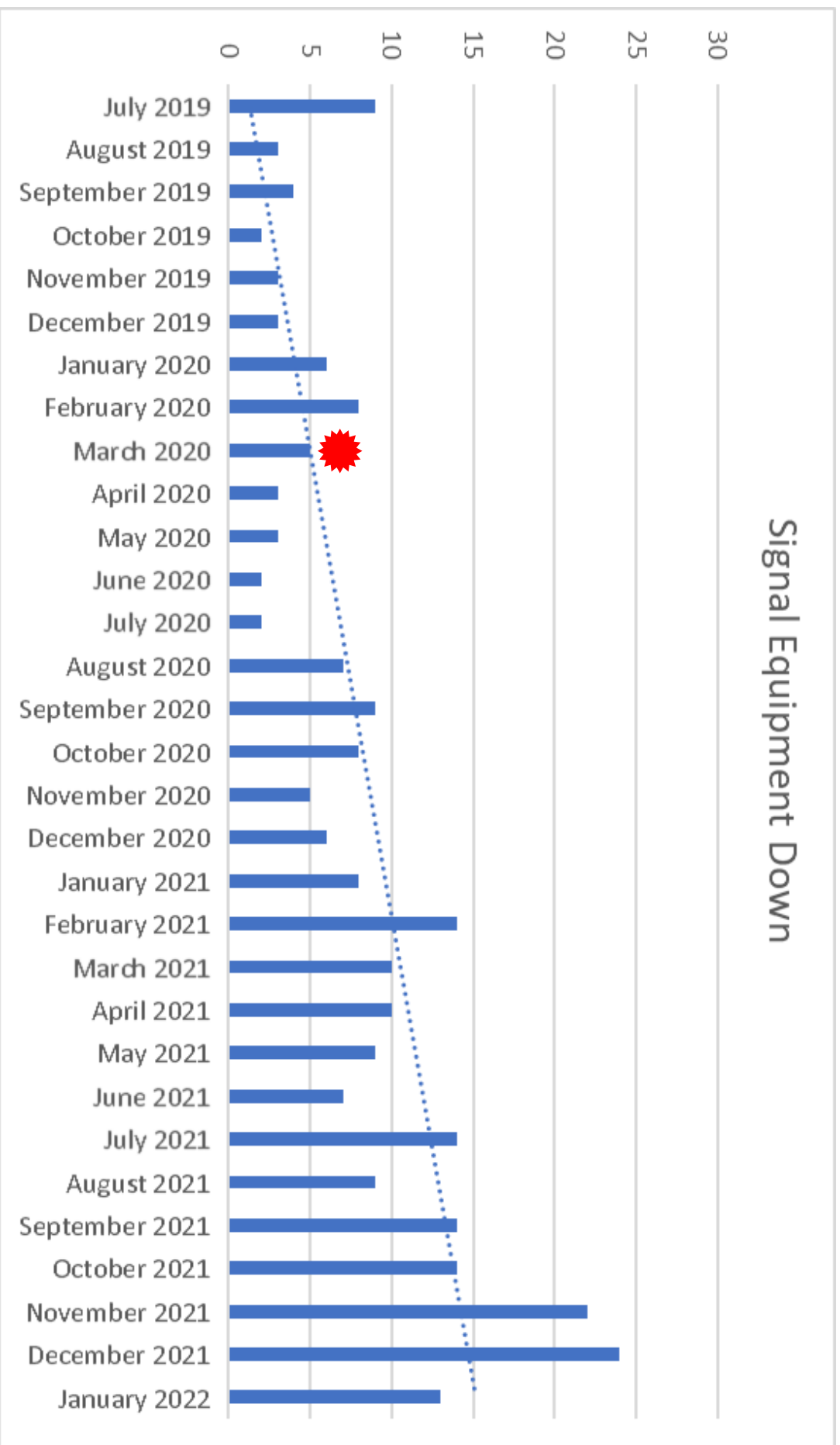


IMPD agrees – more severe crashes



# CITY OF INDIANAPOLIS - INSIGHTS

## Safety Impacts



Source: DPW Operations



# CITY OF INDIANAPOLIS - INSIGHTS

## Safety Impacts



	Total Crashes			% Change	
	2019	2020	2021	2019-2020	2020-2021
<b>State of IN</b>	217601	175921	208467	-19.2%	18.5%
<b>Marion Co</b>	37737	28711	36933	-23.9%	28.6%



	Pedestrian Crashes			% Change	
	2019	2020	2021	2019-2020	2020-2021
<b>State of IN</b>	1609	1356	1449	-15.7%	6.9%
<b>Marion Co</b>	354	289	329	-18.4%	13.8%
<b>Vehicle type = Pedestrian</b>					



	Bicycle Crashes			% Change	
	2019	2020	2021	2019-2020	2020-2021
<b>State of IN</b>	761	704	655	-7.5%	-7.0%
<b>Marion Co</b>	138	106	96	-23.2%	-9.4%
<b>Vehicle type = Pedalcycle</b>					




# CITY OF INDIANAPOLIS - INSIGHTS

*Safety Impacts*



	Total Crashes			% Change	
	2019	2020	2021	2019-2020	2020-2021
<b>State of IN</b>	217,601	175,921	208,467	-19.2%	18.5%
<b>Marion Co</b>	37,737	28,711	36,933	-23.9%	28.6%

	Fatal Crashes			% Change	
	2019	2020	2021*	2019-2020	2020-2021
<b>National</b>	36082	38680	45642	7.2%	18.0%
<b>State of IN</b>	746	811	821	8.7%	1.2%
<b>Marion Co</b>	104	135	138	 29.8%	2.2%

\*2021 National data is extrapolated from first half of 2021. Local data is actual.

Source: NHSTA for national and ARIES for state/local



New York Times 2/14/22  
"Pedestrian Deaths Spike in U.S. as Reckless Driving Surges"

People are frustrated, angry, stressed, anxious resulting in increased:



Violent crime



Customer abuse of workers



Vehicle crashes



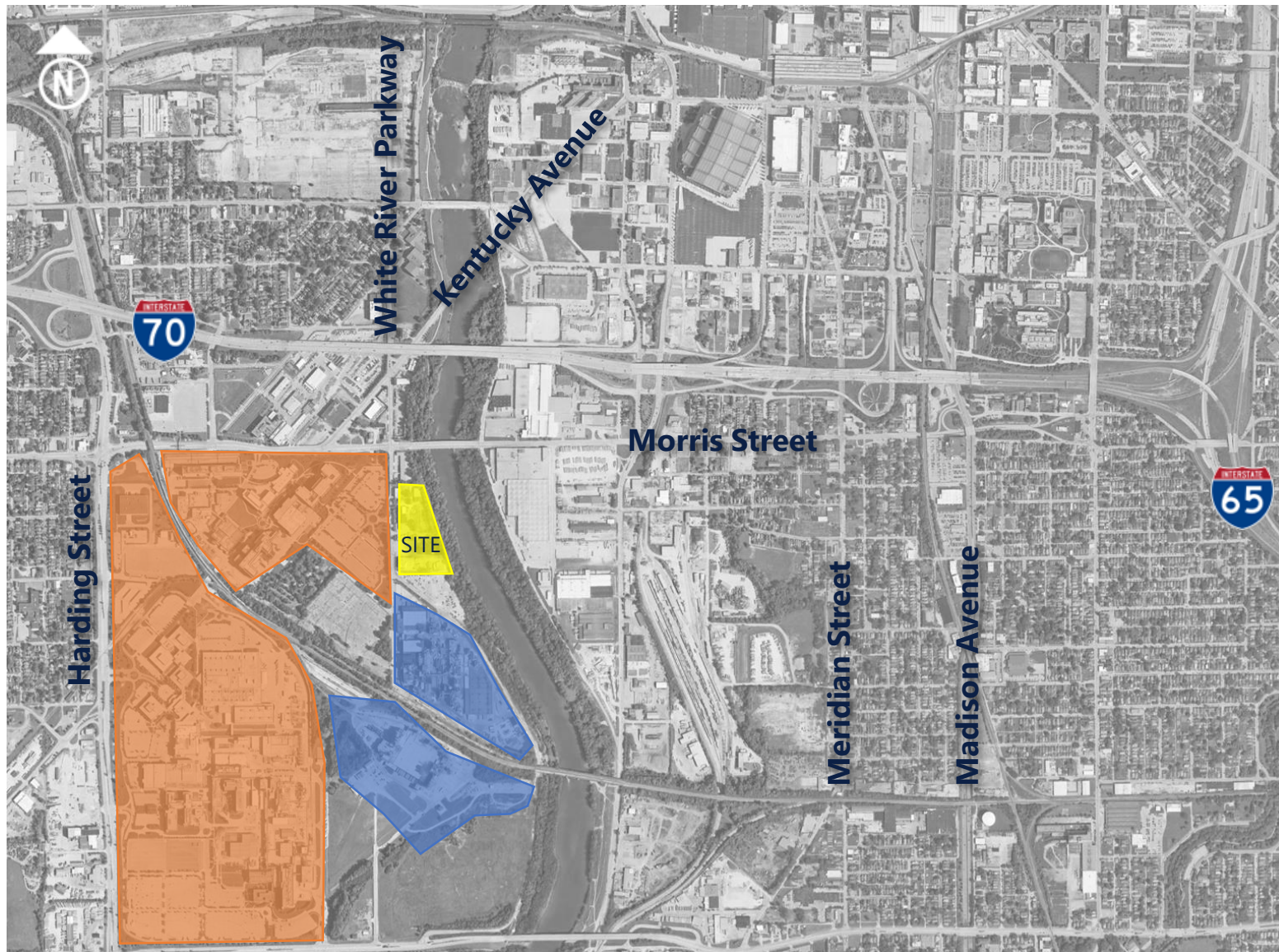
Can traffic calming fix this?



# CASE STUDY

## Flying Tee TIS – December 2020

1. Flying Tee
2. Trip Generation\*
3. 3 intersections

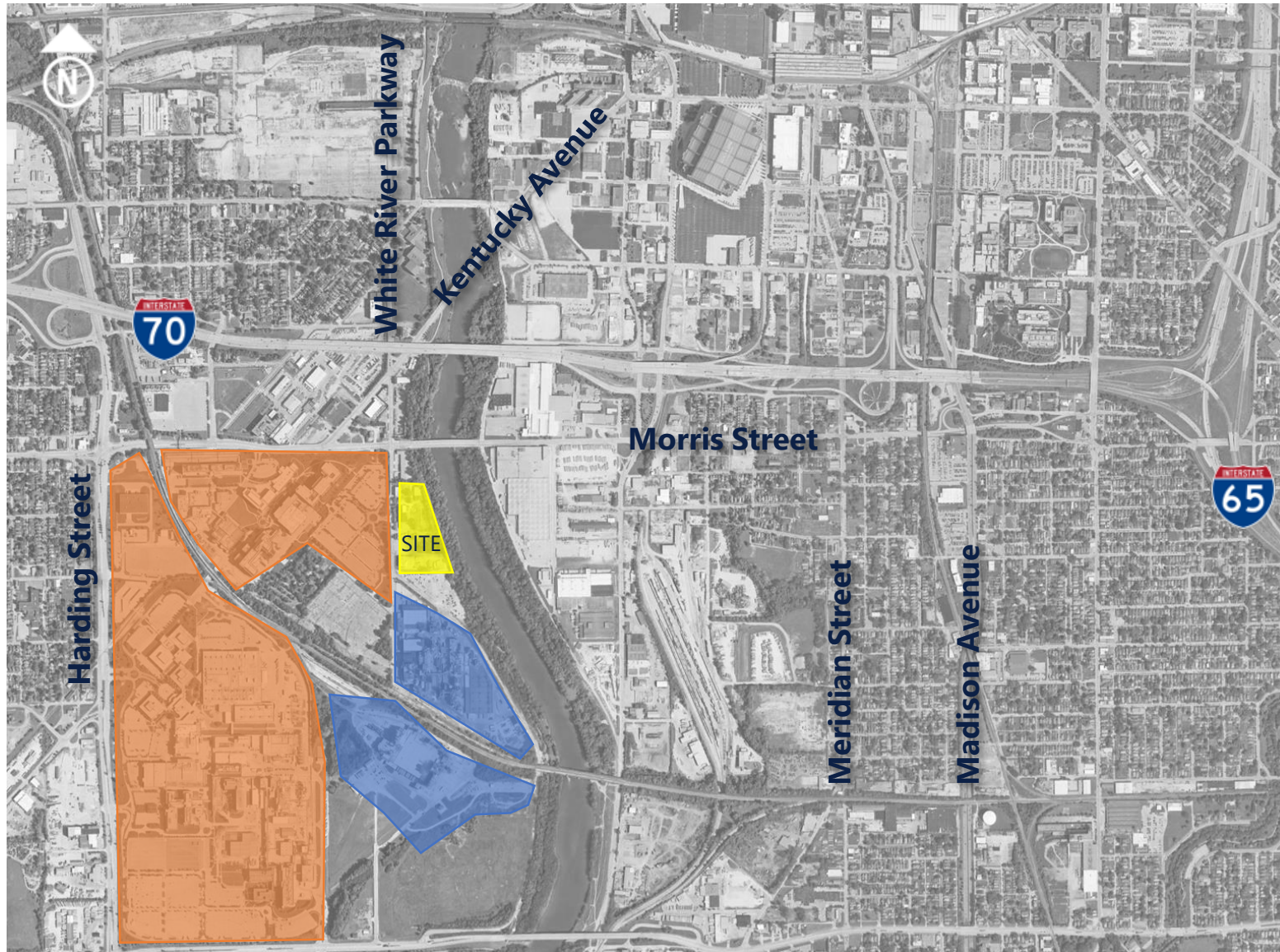


\*Fehr & Peers Burlingame Topgolf Transportation Impact Analysis Report completed in November 2019



# CASE STUDY

## Flying Tee TIS – December 2020



1. November 2020 Traffic Counts
2. Nearby Eli Lilly Campus and warehousing facility
3. COVID-19 Factor
  - PM-67%
  - SAT-15%
4. Background Growth
  - 0.5%/year



# CASE STUDY

## Central Avenue TIS – March 2021

1. Mixed Use Development (LandWorx)
  - 2 Phases
  - Residential
  - Retail
  - Office
  - Internal, Mode Choice Reduction, Pass-by Trips
  - A&D: considered north split
2. 2 intersections
3. Cycle Track



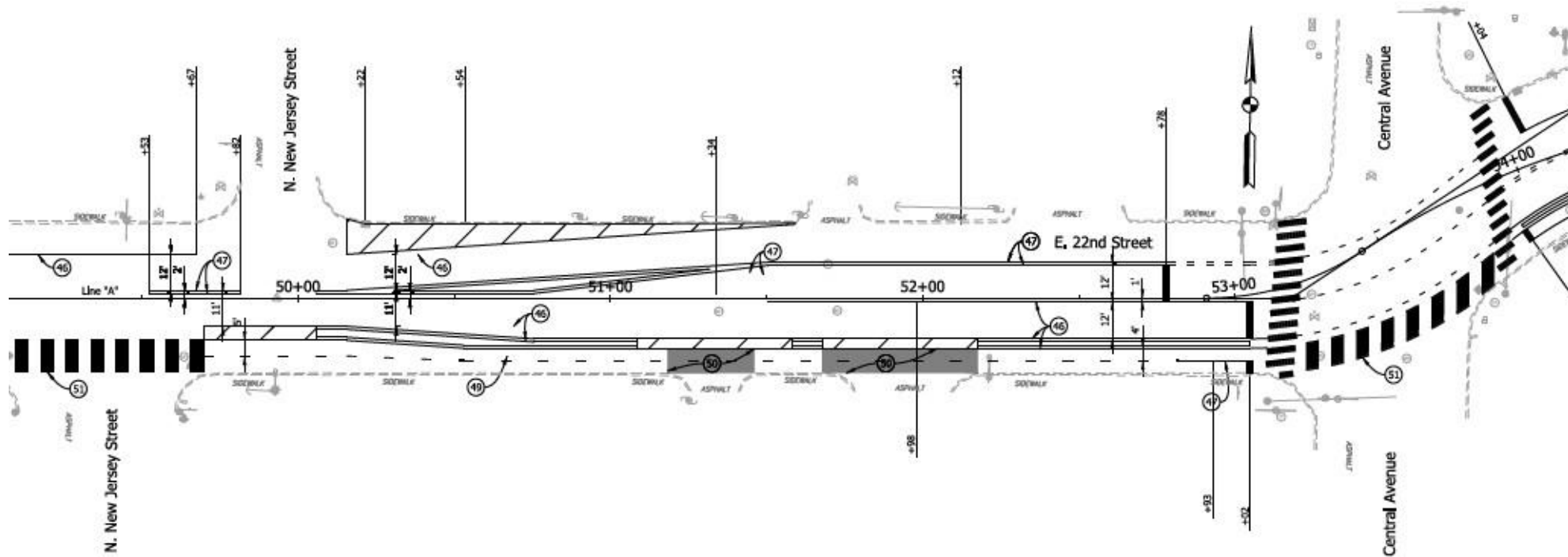




# CASE STUDY

## Central Avenue TIS – March 2021

### 1. Cycle Track West of Central Avenue



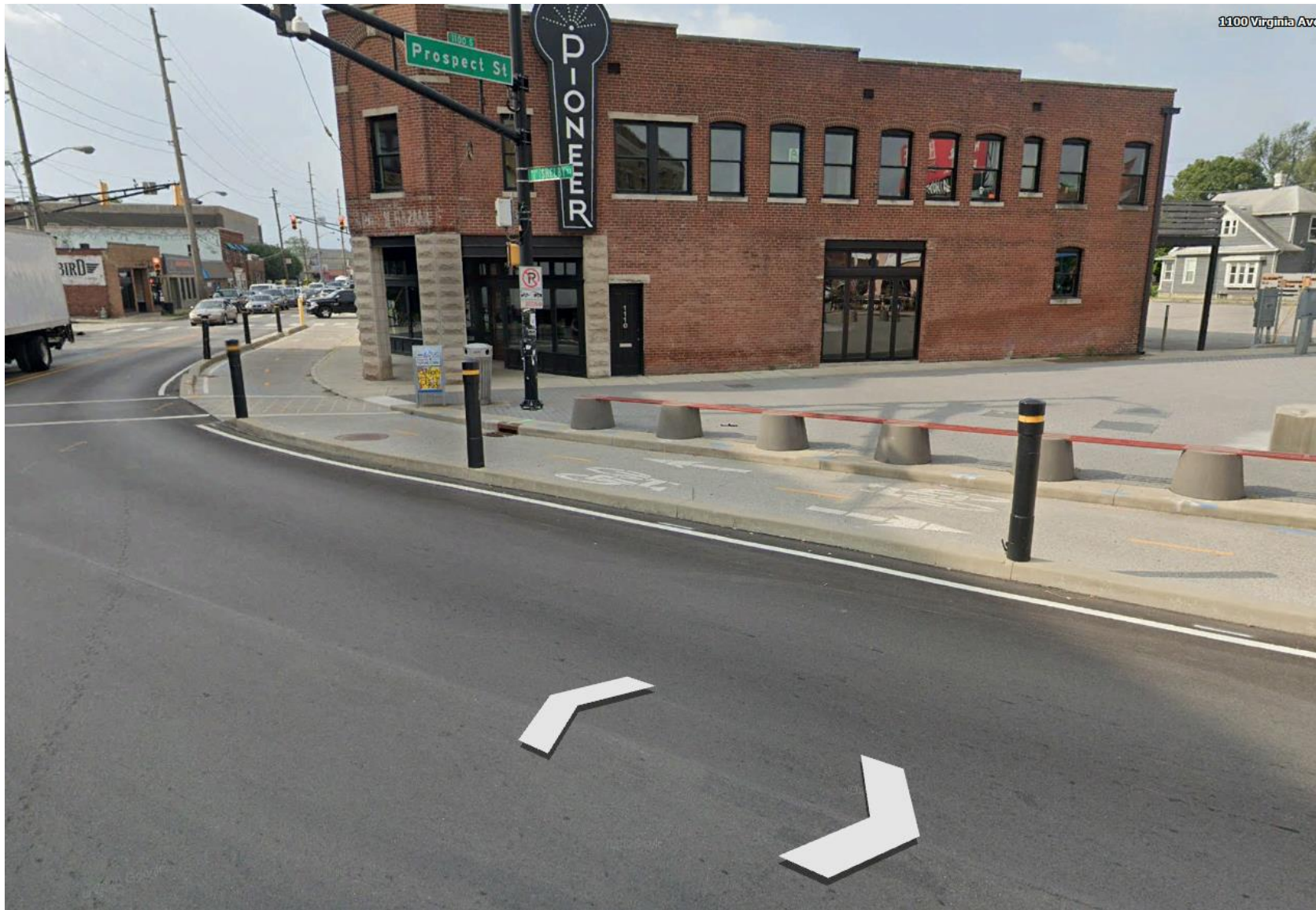
GAI Consultants Inc.



# CASE STUDY

## Central Avenue TIS – March 2021

### Cycle Track on Virginia Ave in Fountain Square



# CASE STUDY

## *Central Avenue TIS – March 2021*

Cycle Track on State Street, West Lafayette

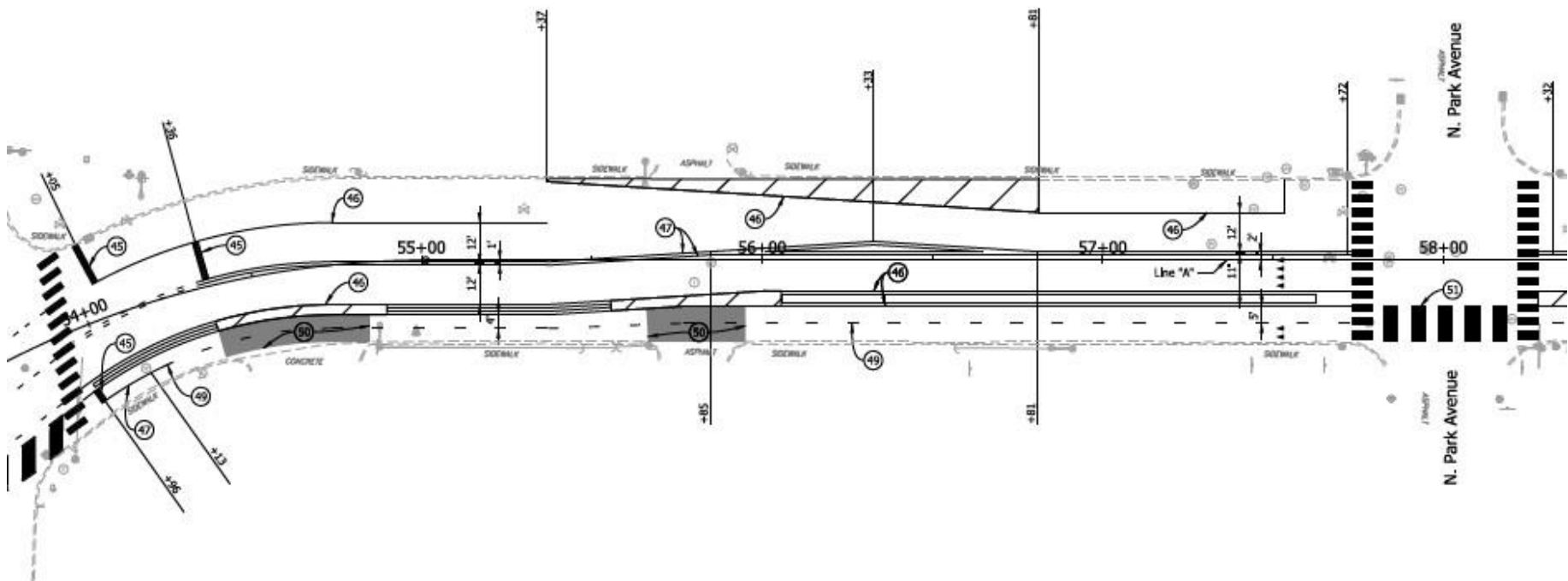




# CASE STUDY

## Central Avenue TIS – March 2021

### 1. Cycle Track East of Central Avenue





# CASE STUDY

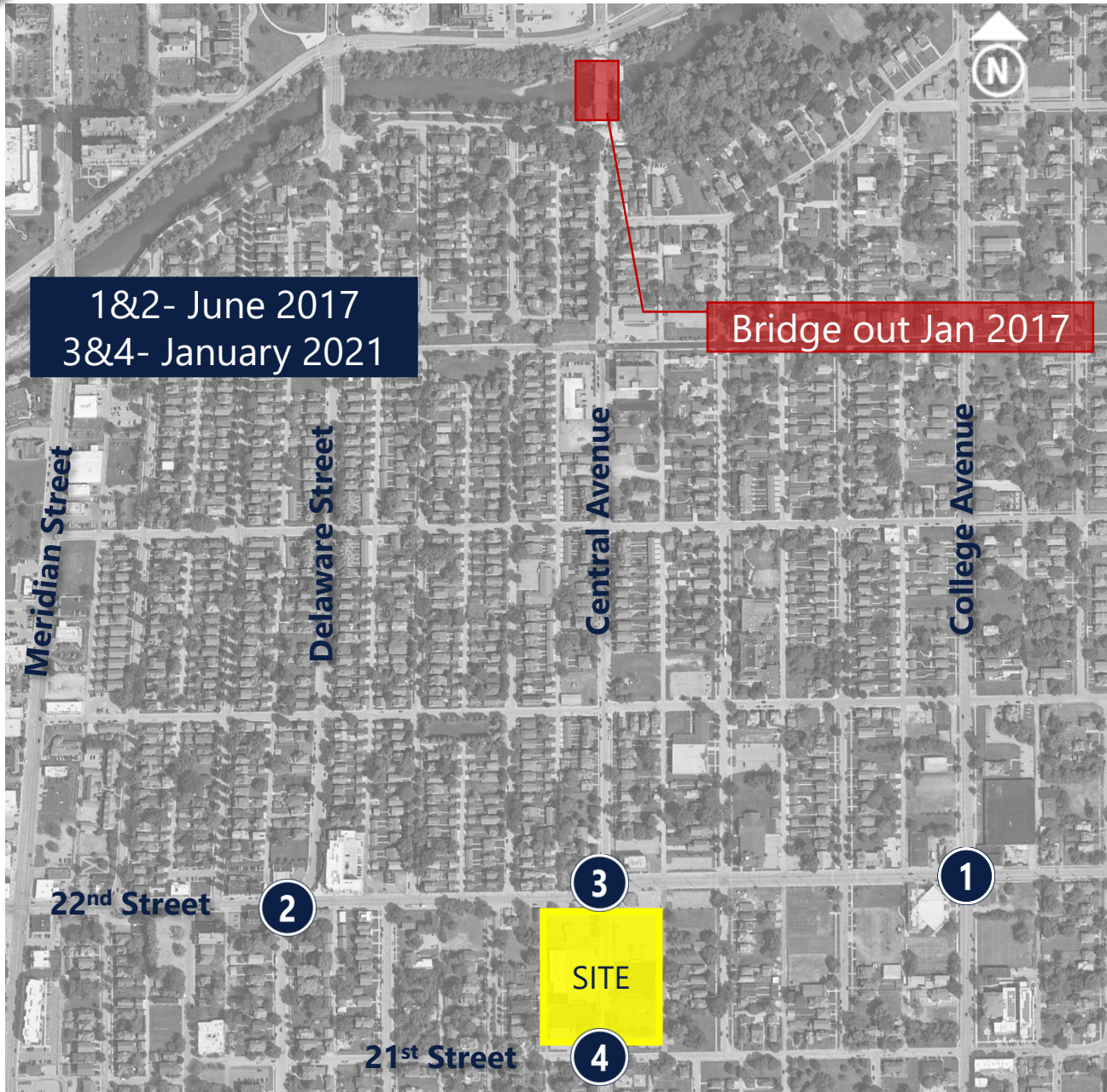
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2. 2 intersections
3. Cycle Track

## Central Avenue TIS – March 2021

1. Central Ave-1 way to 2-way conversion
2. Central Ave Bridge Construction
3. COVID-19 Factor
  - Big Data
  - 2021 Volumes 45% of 2017 volumes
4. Background Growth
  - 1%/year





# LESSONS LEARNED / TOPICS OF DISCUSSION

Good Data



Construction



Nearby businesses



Location



Good Study



## Discussion Prompts

- ✓ Are you still using COVID-19 factors?
- ✓ Historic Data – how do we track what other factors may have been affecting those volumes
- ✓ Safety
- ✓ Flatter peaks?
- ✓ Trip Gen adjustments?
  - ✓ WFH
  - ✓ Deliveries
  - ✓ Fewer Pass-by







- Intro (moderator): 5 min
- National Trends (Amanda): 10 min
- Indy Trends (Jill): 17 min
- Case Study (Lauren): 8 min
- Q&A / Discussion: 10 min