

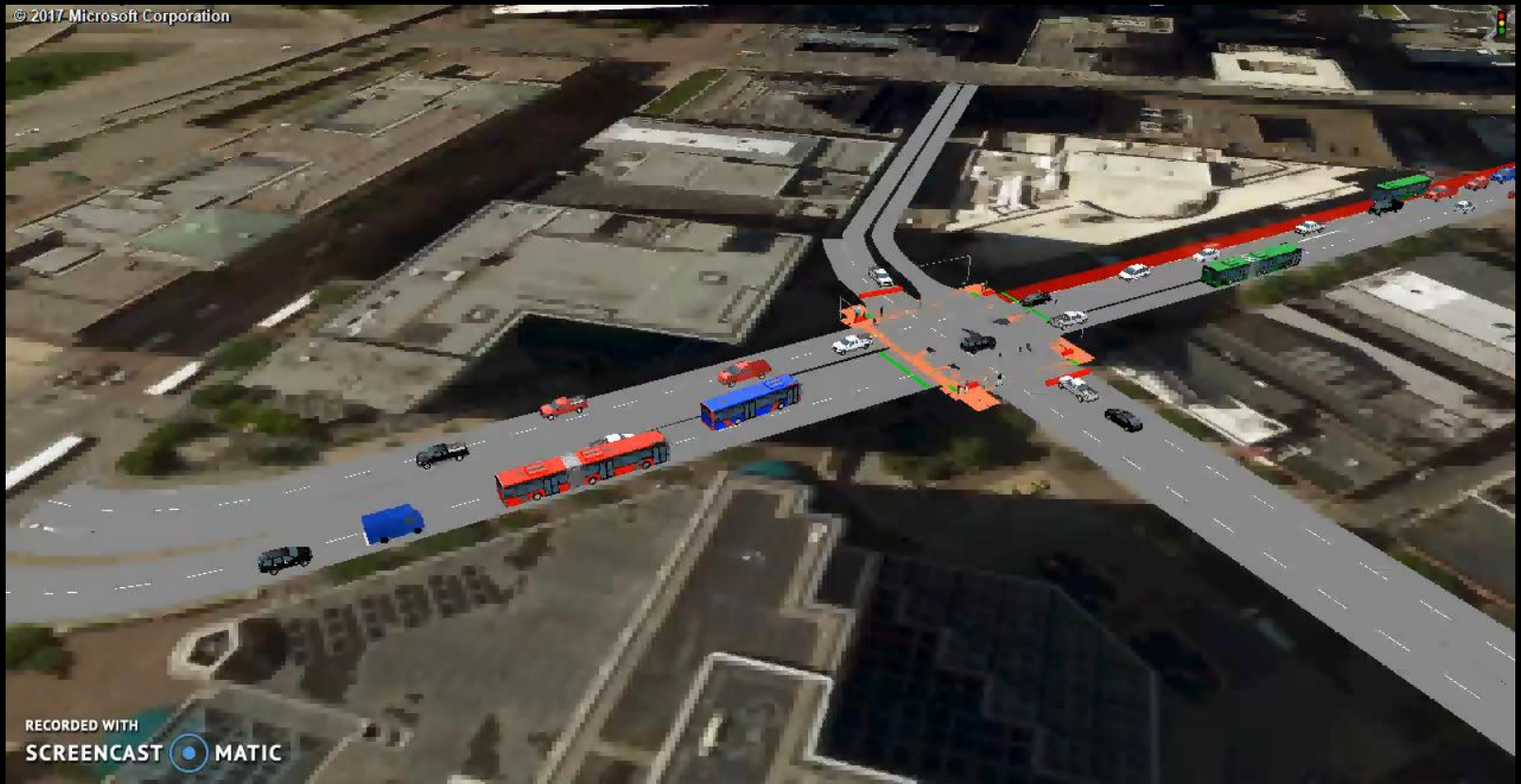


VISSIM Calibration

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CITY OF PITTSBURGH



- ★ MODELING THE CENTRAL BUSINESS DISTRICT IN DOWNTOWN PITTSBURGH
- ★ ENCOMPASSING DIFFERENT ASPECTS OF A DOWNTOWN AREA LIKE PEDESTRIANS, BICYCLES AND THE INTERACTION OF PUBLIC TRANSPORTATION WITH VEHICULAR TRAFFIC

I-95 Sector B



- ★ INCLUDES THE MAJOR HIGHWAYS AROUND PHILADELPHIA (I-95,I-76,I-676)
- ★ WILL HELP DETERMINE NEW RAMP CONFIGURATIONS

I-95 Sector B



CALIBRATION PROCESS OVERVIEW

1. SCOPE WITH CALIBRATION IN MIND
2. DATA / EXPERIENCE IS KEY
3. FOLLOW THE PLAN, FLEXIBLY

CALIBRATION AND THE PARETO PRINCIPLE

A photograph of a car engulfed in flames at night on a city street. The fire is intense, with bright orange and yellow flames rising from the vehicle. The car is a light-colored hatchback. In the background, there are other cars, a street sign, and a building. The scene is illuminated by the fire and streetlights.

- 20% OF THE PROJECT
- 80% OF THE PROBLEMS

SCOPING STAGE

- **ASK SPECIFIC QUESTIONS**
- **WHY VISSIM (AND NOT SYNCHRO)?**
- **WHAT DATA DO YOU WANT AT THE END?**
- **WHAT CORRIDORS / INTERSECTIONS ARE IMPORTANT?**
- **WHAT IS THE DESIRED TIMELINE?**
- **WHAT IS THE BUDGET?**

EXPERIENCE IS KEY

FIND SOMEONE WHO IS:

- EXPERIENCED IN TYPE OF VISSIM MODEL
- A WILLING TEACHER
- ABLE TO MANAGE TRICKY SITUATIONS

EXPERIENCE IS KEY

- **REACH YOUR CALIBRATION
DESTINATION BEFORE THE STORM OF
DEADLINES**
- **PLAN FOR THE UNKNOWN**
- **THERE ARE NO PERFECT MODELS**

DATA IS KEY

- **DATA IS THE MOST IMPORTANT ASPECT OF MICROSIMULATION CALIBRATION**
- **DECIDE EARLY:**
 - **WHAT DATA IS NEEDED**
 - **HOW IT WILL BE OBTAINED**
 - **CONFIRM WITH CLIENT**



DATA IS KEY

– SIMPLE CALIBRATION

- VOLUME, ORIGIN-DESTINATION, TRAVEL TIME

– INTENSIVE CALIBRATION

- QUEUING, SPEED, LANE UTILIZATION, VEHICLE BEHAVIORS

EXPERIENCE IS KEY KEEP A TRAVEL LOG



- DON'T FORGET A DETAILED ACCOUNT

- LOG INPUTS/ CHANGES IN THE NETWORK

FOLLOW THE PLAN, FLEXIBLY

- **STICK TO THE SCOPE, BUT
MAKE ADJUSTMENTS**
- **IT'S EASY TO GET CAUGHT
TAKING SCENIC DETOURS**



WHEN IS CALIBRATION REACHED?

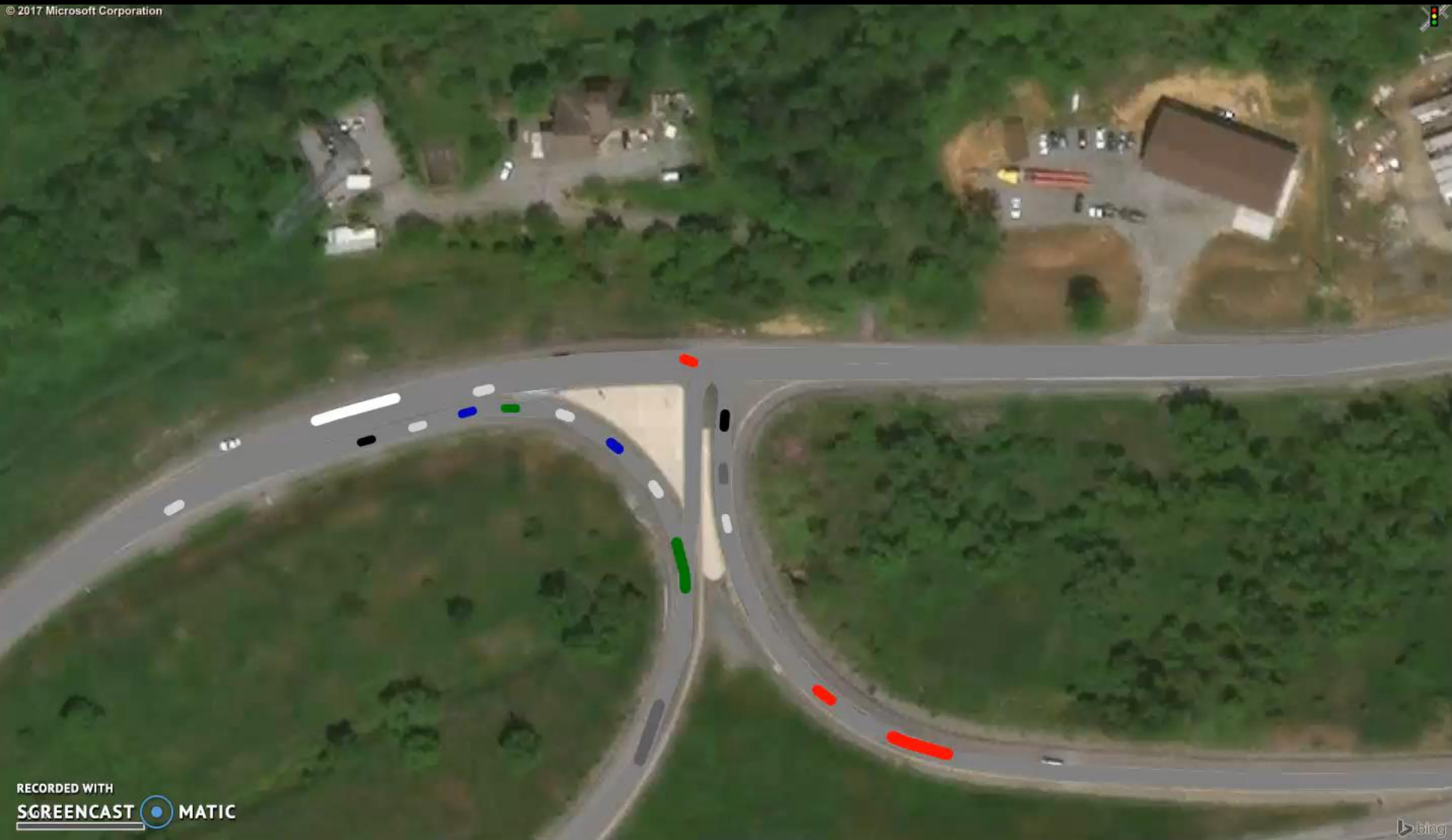
- NO MODEL IS CALIBRATED UNLESS YOU WATCH IT



- LOOK FOR:
 - CARS THAT RUN OVER EACH OTHER
 - CARS FOLLOWING RULES OF THE ROAD

Without Priority rules

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RECORDED WITH
SCREENCAST MATIC

Existing Conditions



Looking left from off-ramp

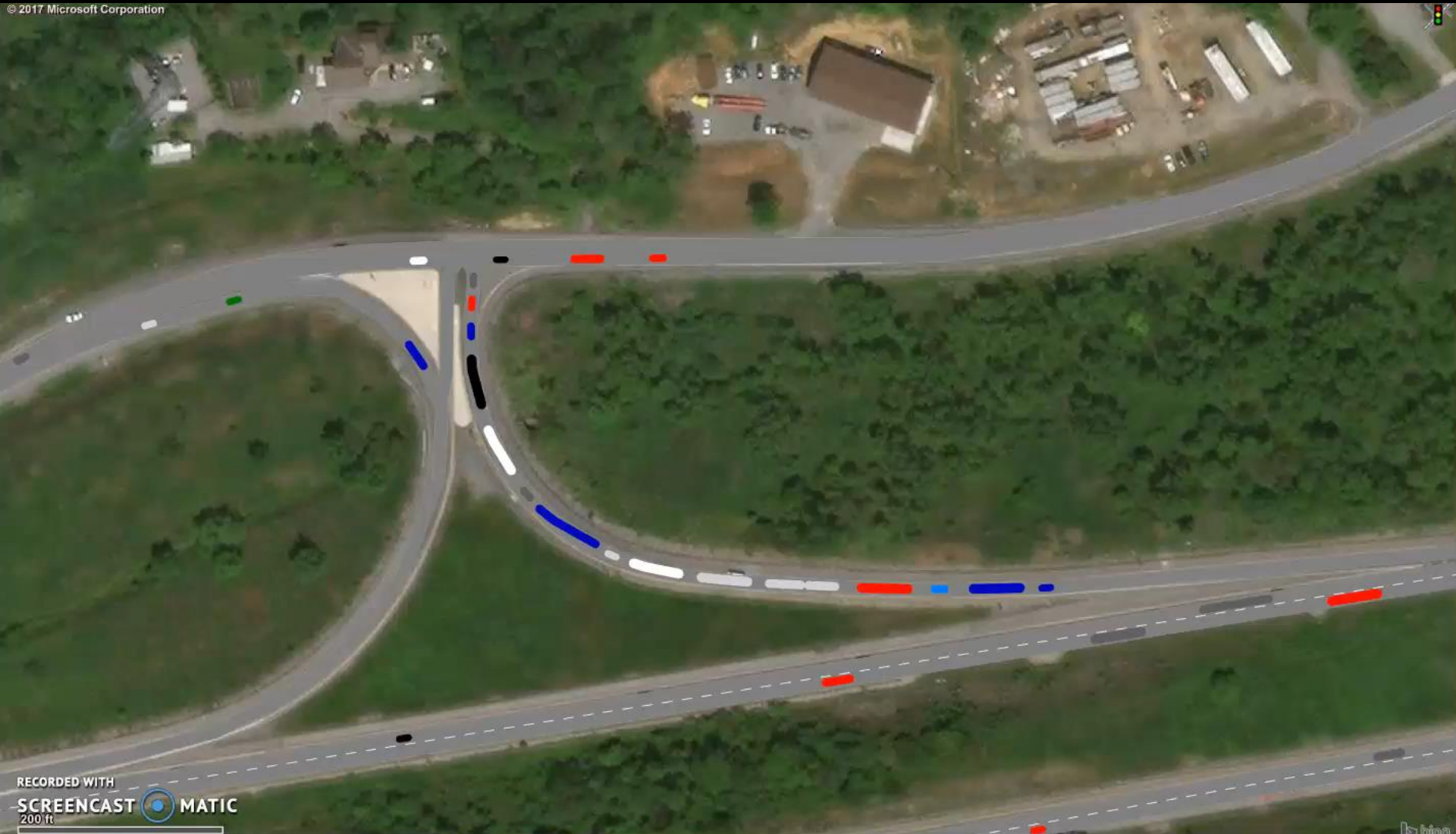


Priority rules



Local knowledge of queues is obtained with proper use of priority rules

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LOCAL KNOWLEDGE IS KEY

- **Truck Composition**
- **Transit Stop Lengths**
- **Driver Behavior**
- **Pedestrian Compliance rate for crosswalks**



Misc

★ ~~Boring Interchange~~
Diamond
Interchange



CALIBRATION SUMMARY:



- 1. SCOPE WITH CALIBRATION IN MIND**
- 2. DATA / EXPERIENCE IS KEY**
- 3. FOLLOW THE PLAN, FLEXIBLY**



...BUT NOT QUITE

- **CALIBRATION IS NOT THE END OF THE PROJECT**
- **OTHER JOURNEYS TO COME**
 - **CREATE ALTERNATIVES**
 - **SHOW RESULTS**
 - **CLIENT APPROVAL**

THANK YOU!

QUESTIONS?

