

eWalk



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6,000 Pedestrians were killed in 2016

12%

Increase in pedestrian fatalities since 2006 (overall traffic fatalities have **decreased** by 18%)

70,000

Pedestrians were injured in 2015

76%

Pedestrian fatalities occurring in urban environments

80+

Age group with highest pedestrian fatalities

Source: NHTSA



Blind Pedestrians Challenges

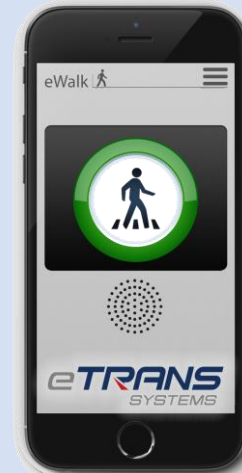
Blind and disabled pedestrians need extra helps at intersections.

1. Difficult to navigate intersection and find crosswalks.
2. Cannot find the pedestrian crossing actuation button.
3. Do not have any information about the status of the signal.
4. Do not know when is safe to start walking.

Need a methodology to improve users safety and provide real-time services.



1. Pedestrian connects to Wi-Fi connected to RSU with special eWalk App that helps with crossing the street.
2. App communicates with RSU that interacts with traffic controller to change light in intersection.
3. RSU broadcasts out Pedestrian Safety message.
4. App uses special algorithm that identifies true location of crosswalk.





What the Data Looks Like

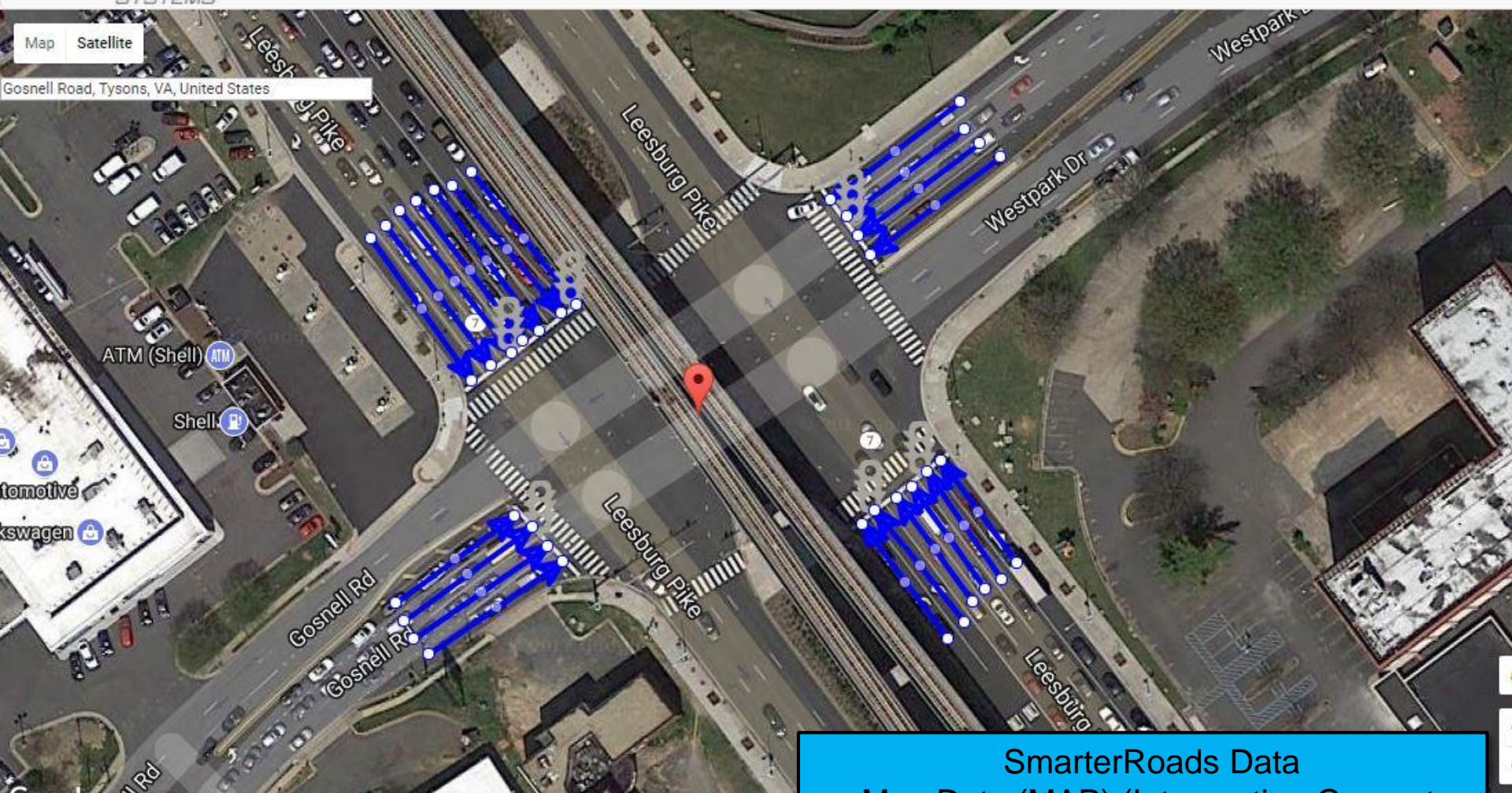
eTRANS SYSTEMS

All Messages

Save

Map Satellite

Gosnell Road, Tysons, VA, United States

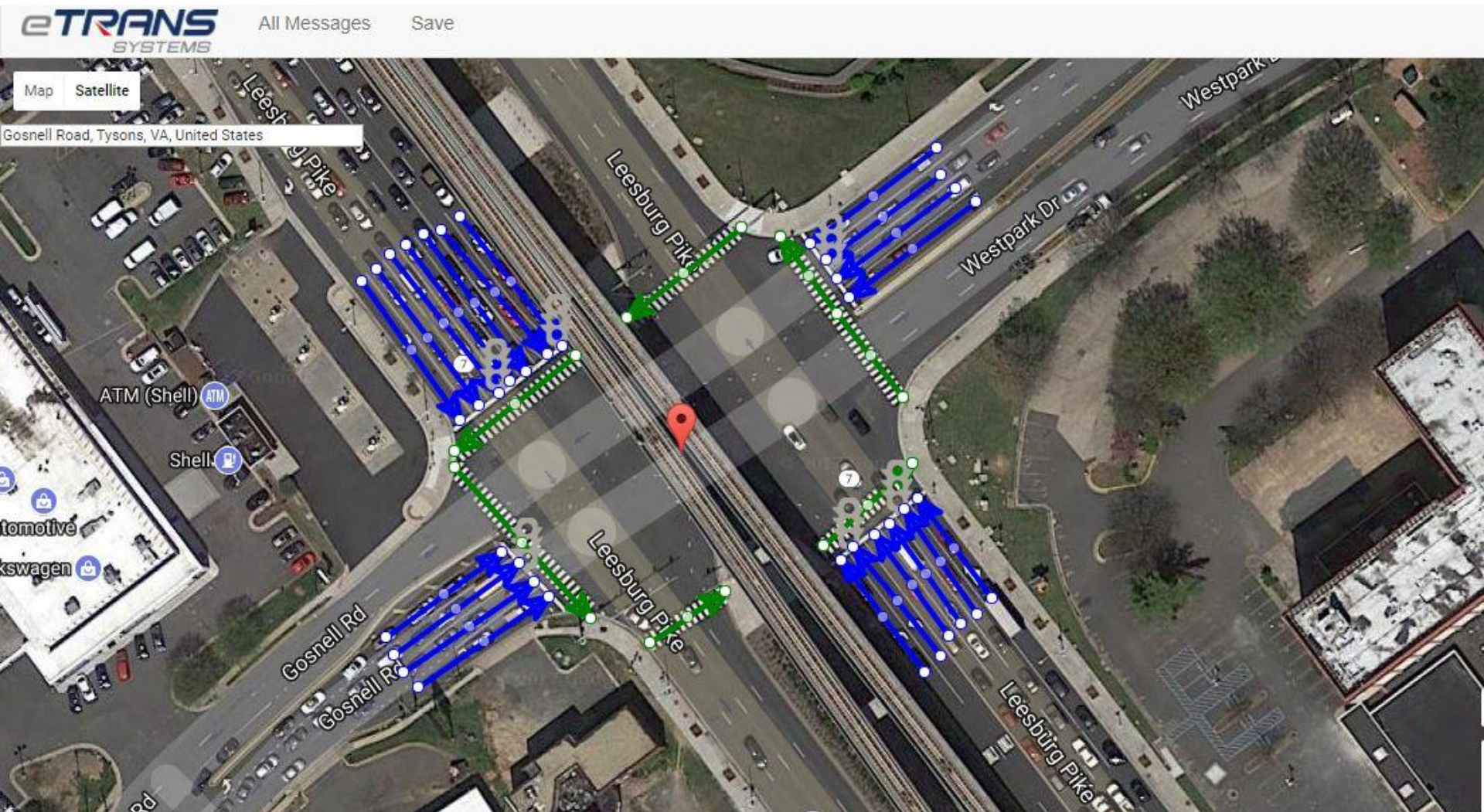









SmarterRoads Data

- Map Data (MAP) (Intersection Geometry information)
- Signal Phasing and Timing (SPAT)



What We Are Really Looking For..



State	Initial	Pedestrian is not facing the crosswalk and try to press Cross button	Pedestrian request is sent to traffic control	Walk interval	Count down interval
Visualization					
Auditory Message	NA	"You are not facing the crosswalk"	"Ped request has been sent"	"Walk sign is on"	"11, 10, 9, ..."
Haptic Alert	NA	NA	NA	Vibrate 	Vibrate 



What more eWalk can do

Notifications to vehicles are also presented via DSRC PSM (Personal Safety Messages)

1. eWalk communicates via Wi-Fi that pedestrian is in the area
2. Passes information to a DSRC Unit which creates and sends a Personal Safety Message about that Pedestrian.





What really matters is..



ACCESSIBILITY

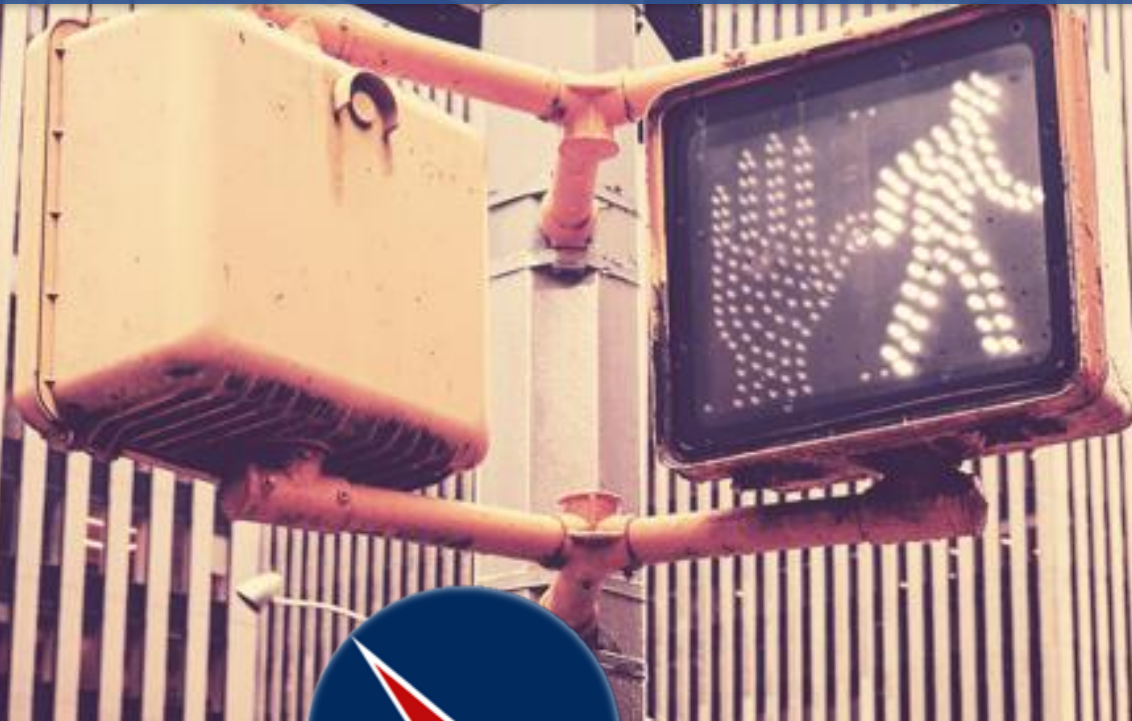
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MOBILITY

+

SAFETY

Questions?



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