

4th Annual Northern Virginia Transportation Roundtable
Driven by Innovation: A Glimpse into the Future of Transportation
Session: Transportation Technology Deployments and Shared Mobility
Initiatives across the Metro Area



IncenTrip

Personalized Multimodal Travel Demand Management

March 13, 2019



MARYLAND
TRANSPORTATION
INSTITUTE

Future
Mobility
Labs >>>

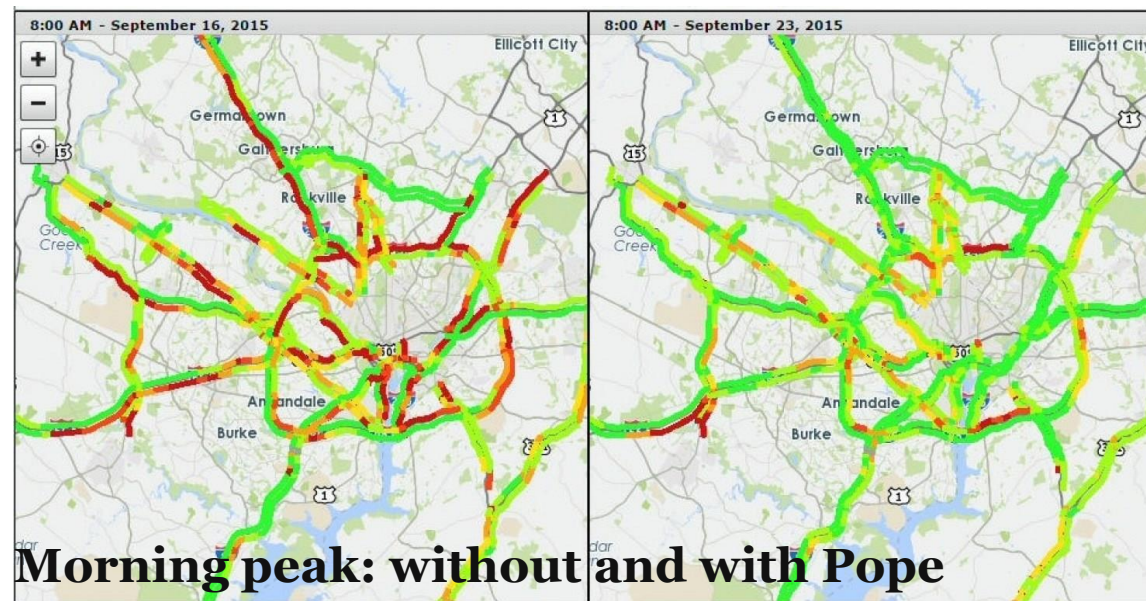
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Gridlock October 21, 2015

What Pope Francis did for D.C. traffic

The Washington Post

“A 2 percent reduction in volume [in peak hours] generally led to a 27 percent decline in highway congestion.”



Would you change your commute for cash?



By [Max Smith](#) | [@amaxsmith](#)
January 21, 2019 5:09 am

Transportation August 18, 2018

This app wants to reward you for smart commuting choices

The Washington Post

Emerging Technologies

Big Data

Artificial Intelligence

Internet of Things & Computing

Shared, Automated & Electrified

- **Personalized services**
- **Optimal resource allocation**
- **Sharing is the key for system benefits**



incenTrip.org

- **Goal:** Optimize and personalize traveler incentives to promote multimodal and shared mobility, off-peak travel, and smart routing/driving for reduced congestion, energy use and emissions **in the most cost-effective way.**

← Choose an option by mode ×

Walk&Bike Transit Multimodal **Rideshare** Drive

Commuter Connections

1 available match(es)

30 points ?

Note: All matches are within a 3~5 mile radius and a +/-30 minute departure window.

Uber

Ride there with Uber

21 points ?

Uber account first name Eric

Note: We will need the first name associated with your Uber account in order to give you points.

incenTrip Rideshare

30 points ? 19 mi | 34 min

Note: Share rides with another incenTrip user. Both users need to select this option to receive points.

← Recommended options ×

4 points ? Wed, Mar 14

05:00 PM 05:21 PM

0.36 gal 9.1 mi 21 min

35 points ? Wed, Mar 14

NH2 Blue

05:01 PM 05:04 PM 05:30 PM 06:10 PM

0.18 gal 18 mi 1h 9m

28 points ? Wed, Mar 14

NH2

05:01 PM 05:04 PM 05:29 PM 05:56 PM

0.08 gal 17 mi 54 min

SEE MORE OPTIONS ...

← Select departure time

Preferred departure time

4 points ? Wed, Mar 14

05:00 PM - 05:21 PM 21 min

0.36 gal 9.1 mi \$ 0.9

Recommended departure time options

1 18 points ? Wed, Mar 14

06:00 PM - 06:20 PM 20 min

0.35 gal 9.1 mi \$ 0.9

2 11 points ? Wed, Mar 14

05:30 PM - 05:50 PM 20 min

0.36 gal 9.1 mi \$ 0.9

3 9 points ? Wed, Mar 14

04:00 PM - 04:20 PM 20 min

← Select route

Gaylord National Resort & Convention Center → U.S. Department of Energy

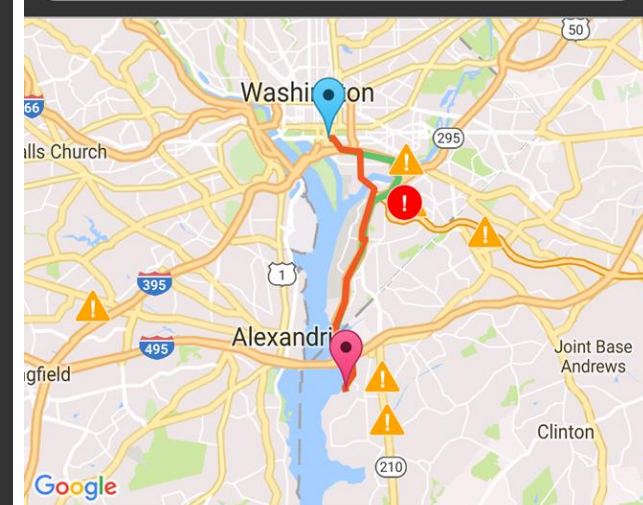
Wed, Mar 14

1 05:00 PM - 05:21 PM 4 points ?

0.36 gal 9.1 mi 21 min

2 05:00 PM - 05:18 PM 1 points ?

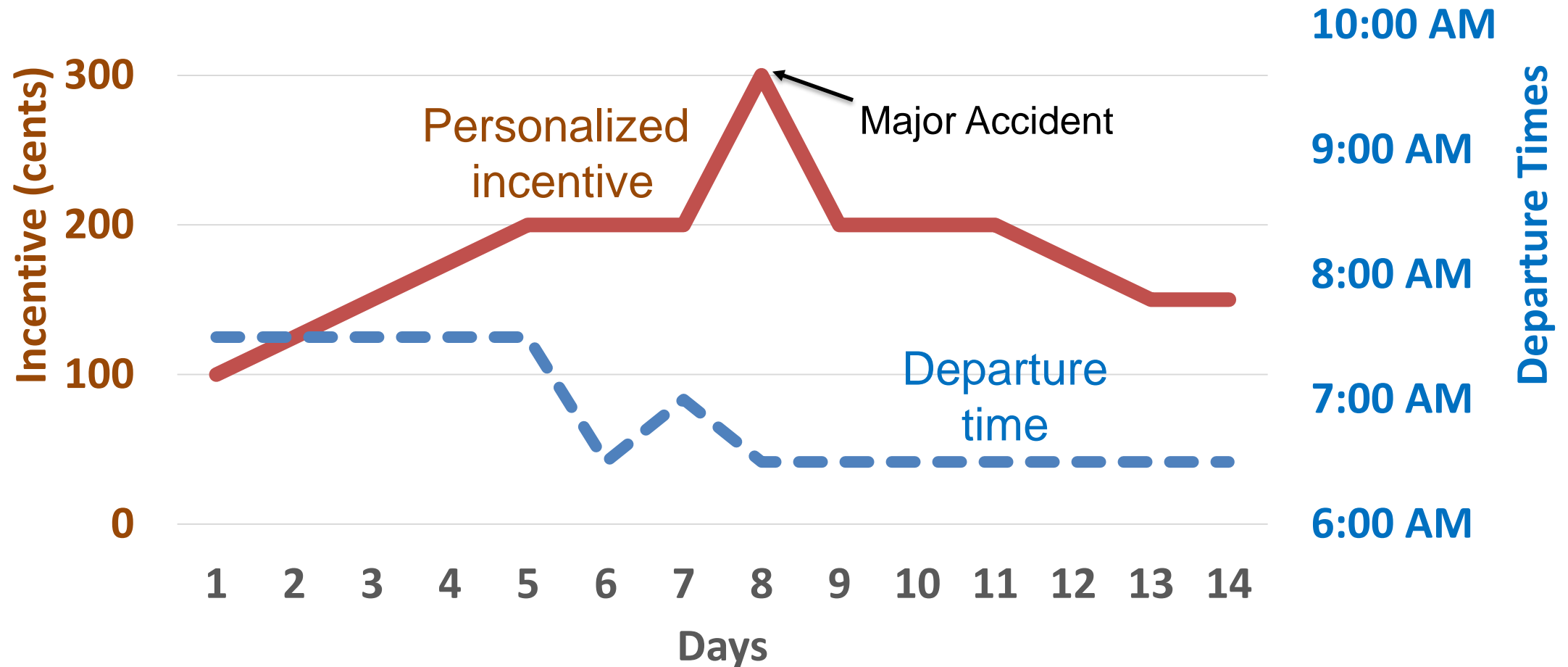
0.37 gal 9.9 mi 18 min



Same origin, destination, and departure time for all three travelers.

Commute Trip	Transit/Rideshare Mode Share	Incentive for Transit/Rideshare	Nonmonetary Incentives
Worker A Driving for all trips	0%	\$5/trip and first trip bonus	Alerts Challenges
Worker B Choice Rider	50%	\$1/trip and Weekly goal	Alerts Challenges
Worker C Loyal Transit Rider	100%	\$0.1/trip and off-peak bonus	Alerts Challenges

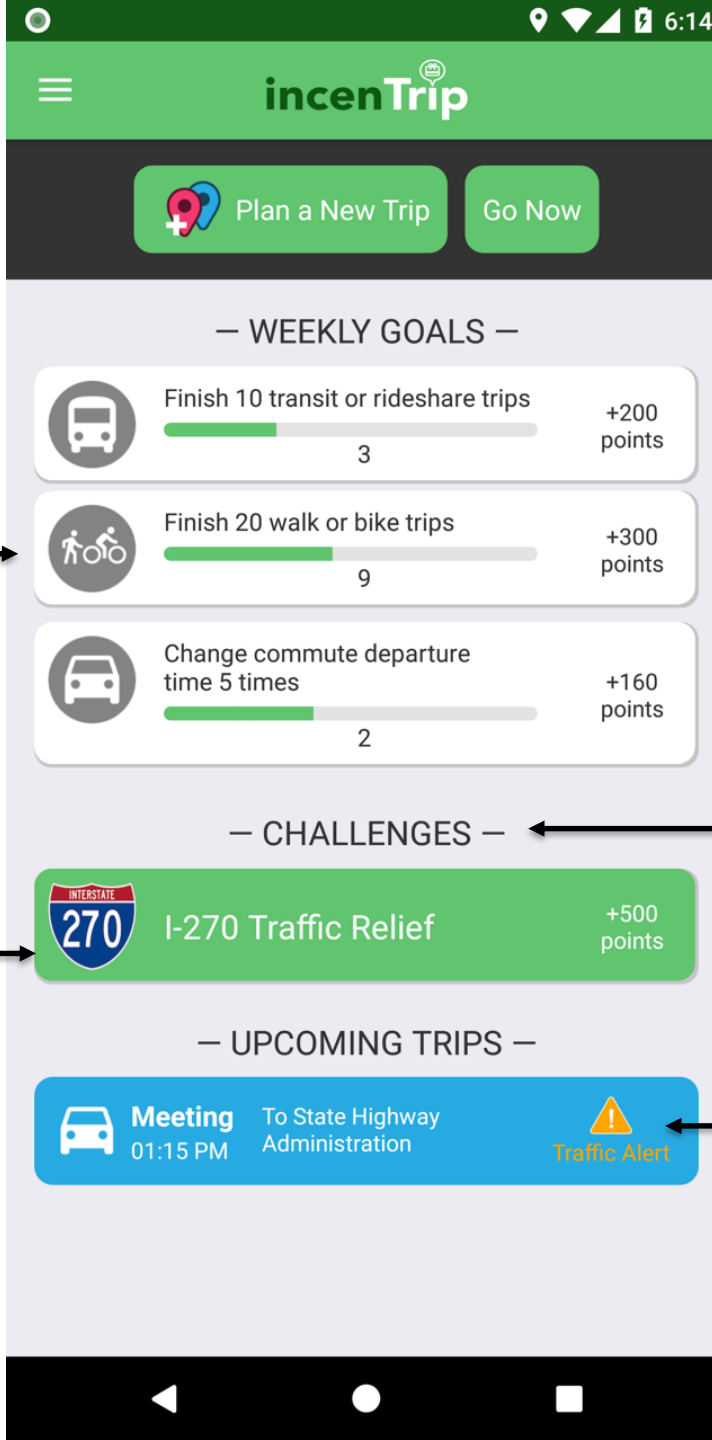
System congestion/energy/emission reduction benefit is worth \$20, except on day 8 (\$30 due to major accident)



Trip planning with mode, departure time, route options, and incentives.

New background trip logging function allows users to earn incentives without planning every trip.

Challenges enable customized incentive programs targeting congestion relief in specific corridors or subareas.



incenTrip v2.0



Users see trip statistics and are presented personalized goals.

Users may suggest challenges and partners for crowd-sourced solutions.

Alerts of unusual travel conditions are sent to impacted users before their trips.



Area **District of Columbia**

Time Period **01/01/2019**

Total Users: **2,126**

Total Trips: **512,175**



CONGESTION REDUCTION

Total hours of congestion reduced : **36,829**

Total cost of congestion reduced : **\$570,725**



EMMISSIONS REDUCTION

Total tons of emission reduced : **14,528**

Total cost of emission reduced : **\$290,808**



FUEL USAGE

Total gallons of fuel saved : **320,526**

Total cost of fuel saved : **\$818,734**

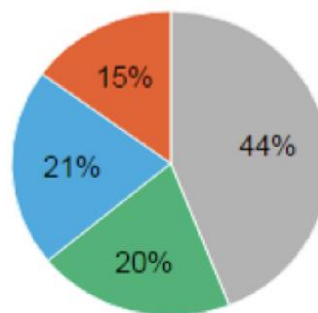
TOTAL BENEFITS: \$1,780.267

TOTAL INCENTIVES: \$98,652

RETURN ON INVESTMENT: 18:1

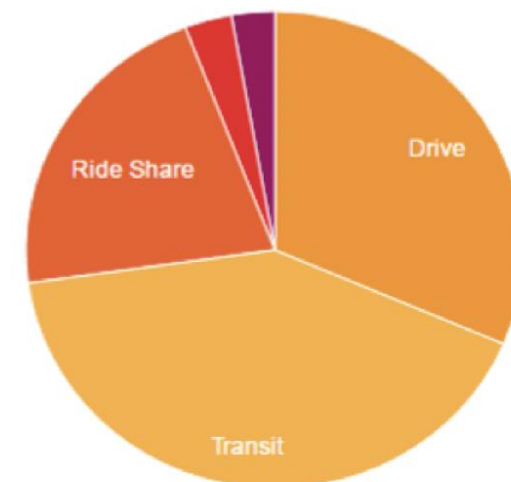
Traveler Behavior Change

- Original
- Change Route
- Change Departure time
- Change to Transit and ride Share

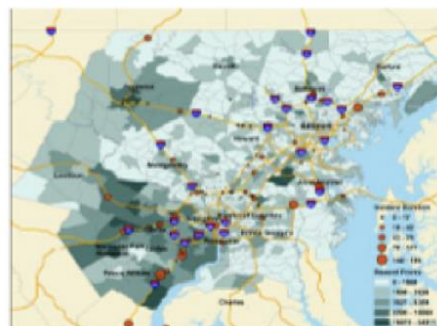


Trips taken by mode:

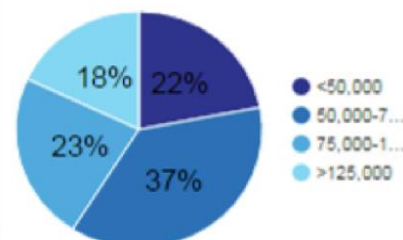
Transit: **2,082**
Drive: **1,584**
Ride Share: **1,076**
Multimodal: **154**
Bike/Walk: **141**



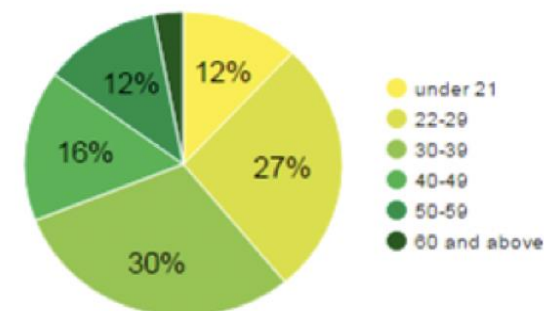
Incentive Distribution by Home Location



Incentive Distribution by Household Income

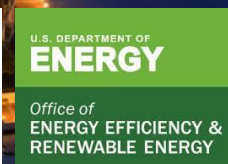


Incentive Distribution by Age





Open house, 5/2018
MWCOG Commuter Connection Pilot, 12/2018
MDOT Pilot 2/2019
Full Deployment, 7/2019



- **Regional collaboration on travel demand management (TDM) and incentive programs, and the addition of the Visualize 2045 TDM Initiatives as adopted by the TPB in December 2018, “Enhanced mobile apps to integrate gamification and rewards.”**
- **Integrate multimodal traveler incentive technology into existing transportation programs at the regional and corridor levels.**
- **Provide cost-effective incentives for emerging mobility options toward a shared mobility future.**