

Welcome



Building Trust from Controversy to Consensus

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The Parkway East



- 14.2 miles
- Fort Pitt Bridge to Turnpike
- Carries 165,000 vpd







Squirrel Hill Tunnel



- Opened 1953
- 4,225 feet long
- 29' -6 " each direction
- Two lanes each direction
- Capacity 3500 VPH each way
- Daily flow 93,000 vehicles







Squirrel Hill Tunnel



Congested 6+ hours per day

	Westbound	Eastbound
	Churchill to tunnel	Forbes to Tunnel
Distance	4.3 miles	2.9 miles
Off-Peak	5 minutes	3 minutes
Peak	20-40 minutes	14-28 minutes









Something needed to be done

Table 8	3: Top 10 Wors	t US Corridors					•	
RANK	СІТҮ	ROAD	FROM	то	WORST PEAK PERIOD	AM PEAK AVERAGE SPEED (MPH)	PM PEAK AVERAGE SPEED (MPH)	TOTAL HOURS OF DELAY (P.P.P.A)
1	New York, NY	I-95 Eastbound	Exit 1C/Alexander Hamilton Brdg W	Exit 6A/I-278	PM	16.32	10.80	118
2	Chicago, IL	I-90/I-94 Southbound	Exit 53C/I-55	Exit 34B/Lake Ave E	AM	24.18	25.77	98
3	Chicago, IL	I-290 Eastbound	Exit 15A/I-88	Exit 28B/Paulina St	AM	31.33	29.75	89
4	Los Angeles, CA	I-10 Eastbound	Exit 3A/S Figueroa St	Exit 13/I-110	PM	38.21	22.61	74
5	Pittsburgh, PA	I-376 Eastbound	Exit 65/Academy St	Exit 77/Edgewood	AM	37.26	29.93	66
6	Chicago, IL	1-90 Southbound	Exit SUA/N Ugden Ave	EXIT 43C/Montrose Ave	AM	23.88	29.04	66
7	New York, NY	E 34th St	FDR Dr	5th Ave	AM	5.81	5.79	59
8	New York, NY	Belt Pkwy E	Exit 3/I-278	Exit 17/Cross Bay Blvd	PM	47.00	28.83	57
9	New York, NY	E 42nd St	FDR Dr	7th Ave	PM	6.31	5.81	56
10	Boston, MA	I-93 Southbound	Exit 20B/Albany St	Exit 8/Furnace Brook Pkwy	PM	39.61	25.10	55







Ramp Metering

What is Ramp Metering?







Advancing Ramp Metering

Comprehensive Study

- Review of Best Practices
- Identification of Congested Freeways
- Criteria for Ramp Management
 Implementation
- Evaluation of I-376 Corridor
- Costs and Benefits of I-376 Ramp Metering
- Three options:
 - Meter six interchanges
 - Close three interchanges and meter three
 - Close one interchange









Access control in Parkway East plan

August 14, 2012 12:00 am By Jon Schmitz / Pittsburgh Post-Gazette

Closing some on-ramps and installing traffic signals on others may be the key to easing congestion and reducing crashes on the Parkway East.

The Pennsylvania Department of Transportation has budgeted \$5 million for design and construction of a ramp metering system similar to those that have improved traffic flow and safety in several other U.S. cities.

On a metered ramp, a red-green traffic signal allows one vehicle at a time to enter the highway. The timing of the signals can be adjusted based on traffic volumes, but they typically allow a vehicle to pass every few seconds. In nonpeak periods, they can be turned off.

"We do have intentions of ultimately down the road implementing some sort of access control to the parkway in order to improve the safety and mobility of the road," said PennDOT District 11 executive Dan Cessna.

"Any of those changes will involve public input," he said. "Obviously, it's a volatile issue."





Congestion indigestion: Some drivers would be barred from the parkway

August 20, 2012 12:00 AM

Pittsburgh Post-Gazette



Residents oppose plan for restrictions on Parkway East on-ramps

TOM FONTAINE AND TORY N. PARRISH | Friday, Nov. 16, 2012, 9:24 p.m.

"The elected officials of the City (of Pittsburgh), Swissvale, Edgewood, Forest Hills, Wilkinsburg and (Allegheny) County Council as well as the Turtle Creek Valley (Council of Governments), CONNECT and the Regent Square Civic Association are working together to represent our neighborhoods to garner support to have PennDOT reconsider spending \$5 million on this study which will have a negative impact," said Pat Schaefer, Edgewood Council president. "It's unfair. Why should we be penalized?" Keebler said.

"My first reaction was that I wondered about whether the benefits of this are going to be evenly distributed," he said in an interview. "The general reaction I got from other elected officials there was that this would be a negative."

Parkway East Plan Concerns Regent Square Leaders

Input is sought on a plan that could include increased traffic, pedestrian safety and negative business impacts on South Braddock Avenue, among other issues.

By Zandy Dudiak | Nov 19, 2012 3:25 am ET | Updated Nov 19, 2012 5:00 am ET







Please know that I too am alarmed about the potential effects of this project



Have you experienced controversy early in a project?

- How was it addressed?
- What steps did you take?
- Did the project move forward?
- Were there lingering issues afterwards?





Couldn't hide

Could not move ahead against community wishes

The need to do something remained as strong as ever

The Department Responds



PennDOT pulls plan to curb ramp access on Parkway East

November 21, 2012 12:11 am By Karen Langley / Pittsburgh Post-Gazette

"Certainly, we hear the residents loud and clear about access to the parkway," said Dan Cessna, chief engineer for PennDOT's District 11, which includes Allegheny, Beaver and Lawrence counties.





Comprehensive study

- I-376 from downtown Pittsburgh to Turnpike
- Intersecting Arterials
- Parallel Arterials
- All modes- Auto, freight, transit, pedestrians, bikes.

Technical Approach



1 Gathering Information Data Collection & Public Engagement	Traffic CountsO/D Study	
2 Understanding the Corridor Modeling & Traffic Analysis	Network ModelingCapacity Analysis	
3 <i>Identifying</i> <i>Needs</i> Concept of Operations	Identification of NeedsDefine Project	
4 Developing Solutions Innovative Ideas	Develop Conceptual PlansDevelop Cost Estimates	
5 Implementing Solutions Environmental, Design & Funding	PrioritizeDesign and Build	

Grounded in Public Input



1 Gathering Information Data Collection & Public Engagement	 Stakeholder Interviews Website/Online Survey
2 Understanding the Corridor Modeling & Traffic Analysis	 Public Meeting
3 Identifying Needs Concept of Operations	 Define Project Based on Public/Stakeholder Input
4 Developing Solutions Innovative Ideas	 Stakeholder Group – Plans and Estimates, Prioritize after Input
5 Implementing Solutions Environmental, Design & Funding	 Stakeholder Group – Finalize Projects Based on Input Design and Build

Stakeholder Interviews



Over 80 individuals invited representing:

- Adjacent Municipalities (11)
- Allegheny County
- City of Pittsburgh
- Other Stakeholder Groups (19)

	Over 25 interviews were held	
Dis	scussion topics cluded:	
•	I-376 Likes/ Dislikes Alternate Routes Travel by Bus, Bike and Walking	

Online Survey



Nearly 2,200 completed surveys and shared over **17,000** interests and concerns

Survey Visitors: 2,797 **Completed Surveys:** 2,179

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What We Heard

Survey & Stakeholder I-376 Common Themes

Congestion

- Include HOV lanes
- Utilize congestion pricing
- Widen the roadway/add lanes ۲



SPEED

LIMIT

- Consider completing the Mon/Fayette Expressway
- Improve variable messaging to include real-time updates
- Offer carpooling incentives •
- Consider closing ramps during peak hours
- Maintain existing interchange ٠ access

Speed

- Implement an education campaign related to maintaining speed and merging
- Speed limit too low •



Safety

- Consider accident management techniques
- Provide consistent merge points and ramp lengths

Squirrel Hill Tunnels

- Widen tunnels
- **Bypass tunnels**
- Use three lanes in one direction during rush hour in the tunnels

Need More Transit

- - Add more park-and-ride lots
 - Provide more transit alternatives
 - Extend East Busway

Pedestrians and Bikes

- Extend trail to Frick Park
- Connect Oakland to Eliza Furnace Trail
- Improve sidewalks under Parkway along Braddock Avenue







Public Meeting



Two Public Meetings

- Different Locations
- Open House &
 Presentation





Technical Studies



Traffic Studies:

- Traffic counts
- Geometric evaluation
- Capacity analysis
- Network modeling
- Network simulation







Needs:

- The Parkway East is congested
- Alternate routes are congested
- Crash rates are above average
- Parkway East does not meet existing design criteria
- Parkway East travel times are unreliable
- Multimodal transportation options are limited



Brainstorming

200 alternatives based on review of stakeholder comments and problems identified during technical analysis Qualitative Analysis based on MOEs



MOEs

Measures of Effectiveness:

- Ways to measure how improvements meet the goals of the project
- Evaluation of Cost, Benefits, and Constraints

Parkway East	nts		
are of Effectiveness	Ranking	Description	Weight
furtion of Parlway Fast Connection	1 - Neolizible	No anticipated impacts	
	3 - Low	Improvements in off-peak flow only	
	5 - Medium	Reduction in peak congestion at a single interchange	
	8 - Substantial	Reduction in peak congestion at multiple interchanges	
duation of Latendal Danafaran Constantian	1. Madiable	No application in congenition	
auction of Artenal Roadway Congestion	3 - Low	Improved traffic operation at a single intersection	
	S - Medium	Improved traffic flow at multiple intersections	2
	8 - Substantial	Improved flow on a single corridor	•
	10 - Major	Improved flow on multiple corridors	
provement in Travel Time Reliability	1 - Negligible	No anticipated charge	
	3 - Low 5 - Modium	Anticipated localized incident improvement Activity and localized daily improvement	2
	8 - Substantial	Anticipated incident improvement at the corridor level	
	10 - Major	Anticipated daily improvements at the corridor level	·
provement in Fuel Consumption/Emissions	1 - Negligible	No anticipated change	
	3 - Low	Intersection-level reduction in congestion or delays	2
	S - Medium	Reduction in congestion or delays at multiple intersections	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	B - Substantial 10 - Major	Reduction in stop-and-go or delays on an arterial corridor Reduction in stop-and-go or delays in the Parkass corridor	
	to major	needed of in hey and go of delays in the Farmery conduct.	
hances travel Options	1 - Negrigione 2 - Low	No anticipated charge Localized improvements in access to alternative modes	
	5 - Medium	Corridor level improvements in access to alternative modes	2
	8 - Substantial	Improved access to existing alternate modes	•
	10 - Major	Major new alternate mode facility	
fety Improvements	1 - Negligible	No anticipated improvement	
	3 - Low	Operational change that addresses localized safety issue	2
	8 - Substantial	Physical improvement that addresses localized safety issue	
	10 - Major	Physical improvement that addresses broad safety issue	
NSTRAINTS			
vironmental Constraints	1 - Negligible	No anticipated impacts	
	5 - Medium	Impacts consistent with categorical Ecolosion Impacts would require Environmental Assessment	1
	8 - Substantial	Impacts would require Erw. Impact Statement	- -
	10 - Major	Potential for nonmitigable impacts	
mmunity Access Limitations	1 - Negligible	No limitations on access	
	3 - Low	Possible slight changes in access or delay for certain trips	E
	8 - Substantial	Provide restriction or access on a single route/interchange Restriction in access to on a single route/interchange	5
	10 - Major	Restriction in access to multiple routes/interchanges	
sts			
nstruction Cost	1 - Negligible	Estimated Option Cost < \$50,000	
	3 - Low 5 - Medium	ps0,000 < Estimated Option Cost < \$500,000 \$500,000 < Estimated Option Cost < \$5,000,000	_
	8 - Substantial	\$5,000,000 < Estimated Option Cost < \$20,000,000	5
	9 - Very High	\$20,000,000 < Estimated Option Cost < \$50,000,000	
	10 - Major	\$50,000,000 < Estimated Option Cost	
erating/Maintenance Cost	1 - Negligible	No anticipated charge	
	3 - Low	Minor increase in electrical or other direct cost	2
	8 - Substantial	Additional staffing at existing facility or crew.	2
	10 - Major	Need for additional staffing unit or crew.	
perty impacts	1 - Negligible	None, project within existing right-of-way	
	3 - Law	Partial takes of less than five properties	_
	5 - Medium	Partial takes of more than five properties	5
	8 - Substantial	r us taking or ess than five properties	



Stakeholder Group

Stakeholder Meetings

- Representing: Local Access, Alternative Transportation Modes, Public Works, Regional Economic Development, Transportation Planning, Congestion Management
- Meeting 1: Measures of Effectiveness, Improvement Concepts by Area, Comment Card

Parkway Corridor

	BENEFITS						
Improvement Concept Reference No.	Reduction in Parkway Congestion	Reduction in Arterial Congestion	Improvement in Travel Time Reliability	Reduces Fuel Consumption/ Emissions	Enhances Travel Options	Improves Safety	
Congestion pricing	x		х	х	х		
Truck limits	x		х			х	
Managed lanes	X(2)		X(2)	х		X(2)	
Extra tunnel lanes	x	x	х	х	x	х	
Ramp management	х		х			х	
Additional VMS signs	x		х			х	







Initial Screening:

- Qualitative
- Rank each MOE from 1-10
- Weight MOEs based on importance
- Identify fatal flaws
- Consider potential benefit-cost ratio
- Consider Stakeholder Input
- Determine options to advance



Evaluating the concepts:

- 62 concepts advanced from Phase 1
- Evaluated in detail
 - Line and grade plans
 - Traffic simulation
 - Safety benefits
 - Emissons



Selecting the projects:

- 82+ evaluated
- Benefit-cost ratio
- High construction costs
- Benefits constrained by tunnel impacts
- 25 were determined to be feasible
- Similar projects grouped together for consideration



Have you shared complex/multiple projects for public input?

- How did you structure presentation?
- How did you gather input?
- How did you prioritize?
- Did the project move forward?



Presented to Stakeholders:

- Corridor-wide
 - Active Traffic Management (ATM)
- Interchange level
 - Bates, Squirrel Hill, Edgewood/Swissvale, Wilkinsburg, Churchill
- Arterial and local roadways
 - Signal Retiming and Upgrades
- Multimodal
 - Park and Ride, Bike facilities, Hard Shoulder Running (new)



Active Traffic Management



Concepts 1, 2 and 4



Corridor-Wide Improvements

Active Traffic Management

- Lane management
- Additional variable message signs (VMS)
- Variable speed limits
- Ramp management for incidents and emergencies



Active Traffic Management

What can ATM do?

- Advanced queue warning
- Speed harmonization
- Dynamic junction control
- Dynamic lane closure
- Dynamic speed limits
- Advise and redirect traffic on ramps





Active Traffic Management

What can ATM do?

- Advanced queue warning
- Speed harmonization
- Dynamic junction control
- Dynamic lane closure
- Dynamic speed limits
- Advise and redirect traffic on ramps





Stakeholder Group

Stakeholder Meetings

- Meeting 2: Phase 2
 Evaluation, Comment Card for each Concept, and Sticky Dot Exercise
- Additional concept proposed

Pros/Cons	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
This project would benefit the corridor.	4	9	2	0	1
There are minimal anticipated concerns/challenges associated with this project.	1	10	1	2	1
Project concerns could be overcome with further engineering, environmental consideration and/or public engagement.	4	9	2	0	1
Project benefits outweigh the anticipated challenges.	3	9	3	0	1

CORRIDOR ACTIVE TRAFFIC MANAGEMENT (ATM)



Candidate Projects		Orange	Yellow	Total
				Response
Active Traffic Management	3	9	4	16
Lengthen Eastbound On-Ramp at Bates	11	3	0	14
Eliminate/Improve Weave at Squirrel Hill	13	1	3	17
West Swissvale Ave Traffic Control	6	8	4	18
Monongahela Ramp Traffic Control	9	7	4	17
Eastbound Ramp Consolidation at Edgewood/Swissvale	10	2	6	18
Single-Point Interchange at Wilkinsburg	0	7	11	18
Control Eastbound Weave	3	7	5	15
Park and ride Facilities	9	8	1	18
Bike Facilities	1	6	13	20
Signal Retiming and Upgrades along Arterials	11	5	0	16
TOTAL	76	63	51	187



Stakeholder & Public Officials

Joint Meeting

 Meeting 3: Projects to be Advanced – Active Traffic Management included



Active Traffic Management



Commitment to Community Meeting



Not part of formal project outreach

- Informal forum sponsored by WPSD
- Municipal, non-profit and business sectors
- Edgewood, Forest Hills, Swissvale and Wilkinsburg
- Strengthening dialogue on challenges and opportunities facing these communities





"I'd like to compliment PennDOT on the open and transparent process in which they have conducted this study."

Questions and Discussion



Thank You!

Parking Lot





Purpose:

To improve traffic flow, improve safety, and improve multimodal travel options in the Parkway East Corridor Transportation Network, located in Allegheny County, Pennsylvania, which consists of the Parkway East (I-376) from the Fort Pitt Bridge to the Pennsylvania Turnpike/US 22 interchange, and also includes parallel and intersecting arterial roadways.





What is ATM?







Active Traffic Management (ATM)



Concepts 1, 2 and 4



Needs Analysis

Purpose and Need

- Conducted in accordance with PennDOT Publication 319
- Developed based upon:
 - Technical analysis
 - Public comment
- Basis of evaluation of alternatives

Ramp Metering



A proven, low cost solution

Table 1-1: Summary of Ramp Metering Safety Benefits²

Location	Benefit
Portland, OR	43% reduction in peak period collisions.
Minneapolis, MN	24% reduction in peak period collisions.
Seattle, WA	39% reduction in collision rate.
Denver, CO	50% reduction in rear-end and side-swipe col- lisions.
Detroit, MI	50% reduction in total collisions and 71% re- duction in injury collisions.
Long Island, NY	15% reduction in collision rate.

Table 1-2: Summary of Ramp Metering Mobility and Productivity Benefits²

Location	Benefit
Portland, OR	A 173% increase in average travel speed.
Minneapolis, MN	A 16% increase in average peak hour travel speed and a 25% increase in peak period volume.
Seattle, WA	A 52% reduction in average travel time and a 74% increase in traffic volume.
Denver, CO	A 57% increase in average peak period travel speed and a 37% decrease in average travel time.
Detroit, MI	An 8% increase in average travel speed and a 14% increase in traffic volume.
Long Island, NY	A 9% increase in average travel speed.





Agenda

Today's Meeting

- Introductions
- Controversy
- What would you do? Interactive
- Building Trust
- What would you do? Interactive
- Consensus
- Questions, Answers, Discussion





Network Model:

- Models alternate routes
- Calibrated to field data
- Separate AM and PM models
- Forecasts future conditions







- Traffic counts
 - Aerial photography
 - Origin-destination counts
 - Turning movement counts
 - ATR counts
- Safety and Geometric studies
- Alternate routes
- Alternate modes



