

Congestion Management Process at DVRPC



Delaware Valley Goods Movement Task Force January 9, 2019



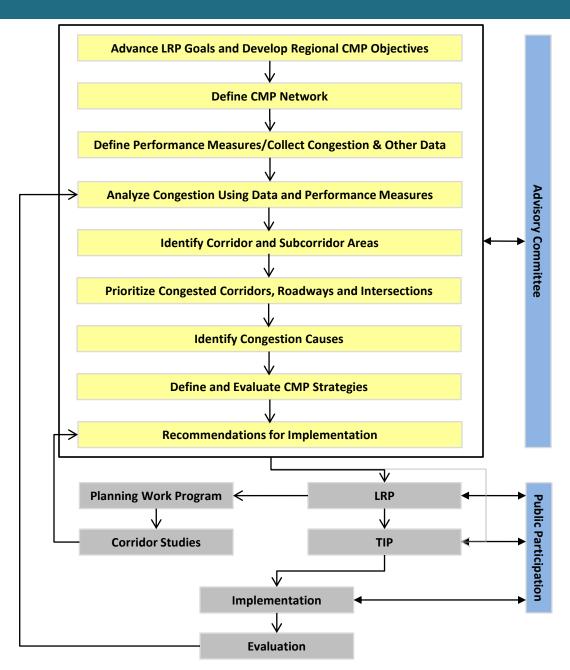
WHAT IS THE CMP?



- A systematic and regionally-accepted approach for managing congestion that provides accurate, up-todate information on the performance of the transportation system
- Identify and assess alternative strategies for congestion management that meet state and local needs to improve the multimodal transportation system performance and reliability, and to reduce the adverse impacts of congestion on the movement of people and goods
- Intended to move these congestion management strategies into the funding and implementation stages as part of the TIP and LRP



INTEGRATING THE CMP INTO THE PLANNING PROCESS





DEVELOP CMP OBJECTIVES



- What does the DVRPC want to achieve regarding congestion management?
 - Eliminating congestion may not actually be desired if it comes at the expense of economic vitality, community livability, or safety
 - Reliability is an important measure. If you are on a congested corridor, and it takes 30 minutes to make a delivery or to get to work, and you expect that, then that is okay

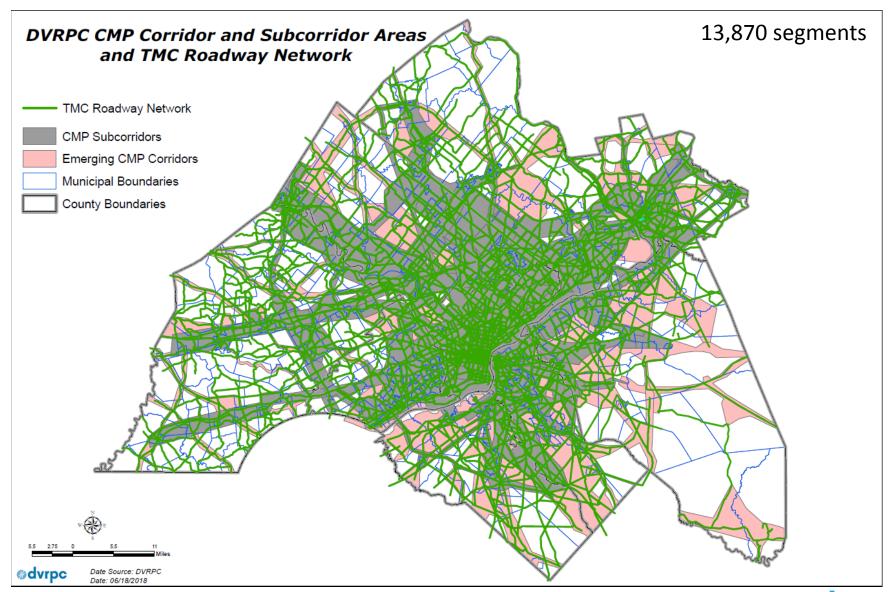


CMP TRANSPORTATION NETWORK

- National Highway System (NHS) corridors
- Arterial highways not included on the NHS
- Primary Highway Freight System (PHFS) and Critical Urban/Rural freight corridors
- Freight rail
- Public transit buses and regional rail
- Sidewalks and bikeways
- Other input from CMP planning advisory committee



INRIX TMC Roadway Network





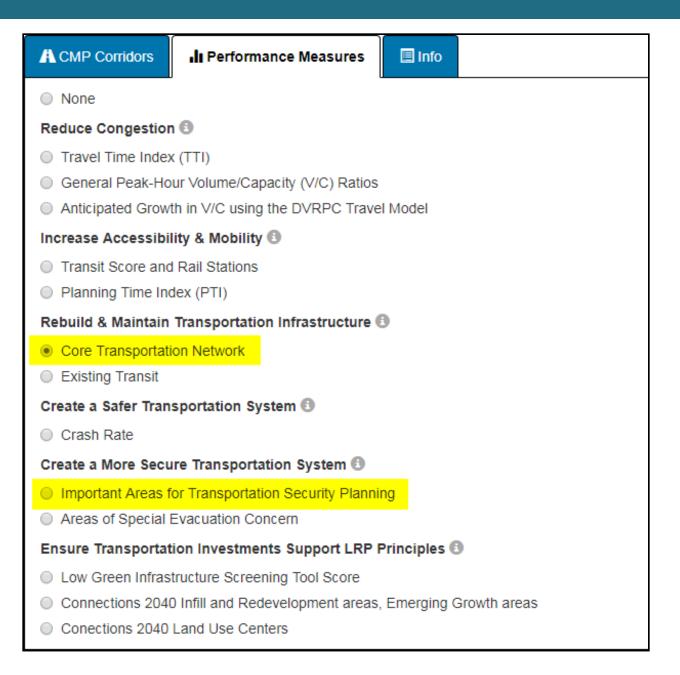
ROLES OF PERFORMANCE MEASURES



- Characterize mostly current, but also potential future performance on the transportation system (e.g. TTI and TDM forecasts)
- Track progress toward meeting regional objectives and targets
- Identify specific congested locations
- Assess congestion mitigation strategies, programs and projects
- Communicate system performance to decisionmakers, planning partners and the public



CURRENT CMP PERFORMANCE MEASURES





CORE TRANSPORTATION NETWORK MEASURE

Rebuild & Maintain Transportation Infrastructure

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Our transportation system is both extensive and old. Pennsylvania has the highest number of structurally deficient state-maintained bridges in the nation, and 31 percent of the region's state-maintained lane miles of pavement are in poor condition. SEPTA has rail bridges that are a century old, substations and signals from the 1930s, and trains from the 1970s. The rebuilding of the existing network of roads, transit lines, and other transportation facilities is the focus for transportation investments moving forward at the national, state, and regional level. We must continue to prioritize projects based on quantitative data to ensure that funds are spent efficiently and effectively. We must also plan for the future and preserve vital right of ways so that the system can expand. Utilizing abandoned rail lines as trails in the interim is one way in which key corridors can be preserved for future use.

Core Transportation Network

Existing Transit

Core Transportation Network

Rebuilding and maintaining the region's core network of transportation infrastructure is a key goal of the Long-Range Plan. This measure identifies all road links on the Enhanced National Highway System (NHS) including principal arterials; NHS connectors; existing passenger rail (including Amtrak); existing freight rail lines; major freight facilities including major rail yards, rail-truck intermodal yards, and ports (one-mile buffer); and the Philadelphia International Airport (one-mile buffer).

Scoring (Core Transportation Network)

■ Each of the above items received 0.5 points. The measures to Rebuild and Maintain Transportation Infrastructure can combine to total a maximum of 1 point per link.

Source: DVRPC.



SECURE TRANSPORTATION SYSTEM MEASURE

Create a More Secure Transportation System

×

There has been an increased national focus on security since the events of September 11, 2001, which established a larger role for MPOs in this area. One goal of this effort is to explore ways that MPOs can play a part in security planning. DVRPC researches and communicates appropriate security efforts of our partners. DVRPC fulfills its classic role of facilitating the exchange of ideas and resource sharing to build upon existing programs to further security efforts in the region.

Important Areas for Transportation Security Planning

Areas of Special Evacuation Concern

Important Areas for Transportation Security Planning

This measure helps identify areas of the network where transportation preparedness for major events is most important. These are often events that call for complex interregional cooperation. The measure was developed with input from regional security agencies.

Scoring (Transportation Security)

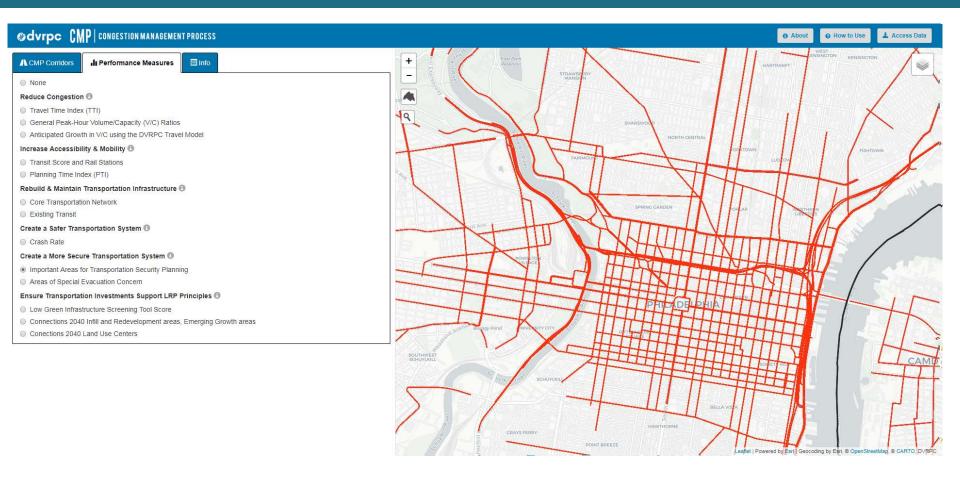
Road links within a mile of the region's most heavily-used bridges, passenger transit stations, and the general location of the largest military bases in the region, as well as road links within nuclear power plant evacuation zones received half a point.

The measures to Create a More Secure Transportation System can combine to total a maximum of 1 point per link.

Source: DVRPC.

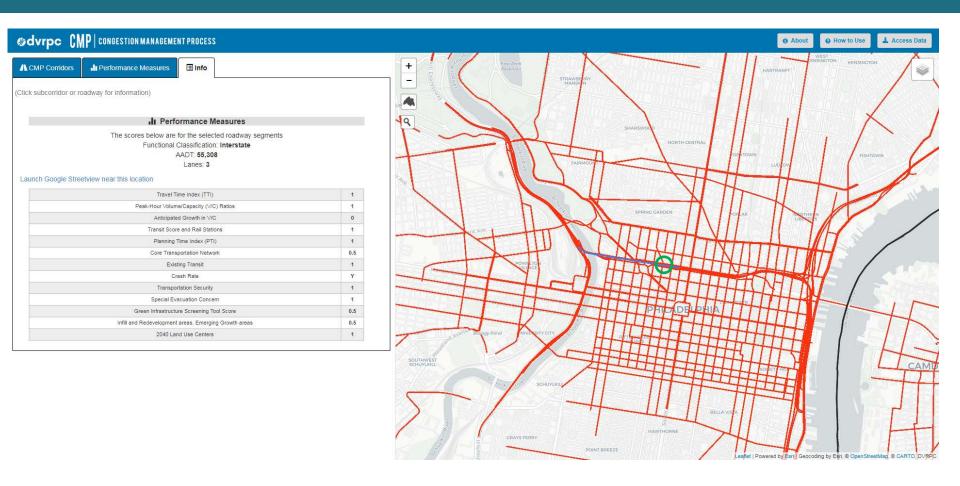


PERFORMANCE MEASURES





PERFORMANCE MEASURE SCORES







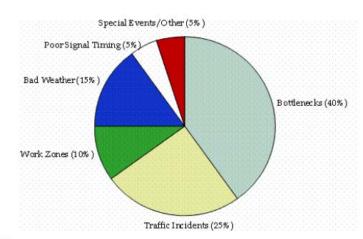
- Potential causes of congestion to consider for purposes of identifying potential mitigation strategies:
 - Locations at major trip generators (retail centers, employment clusters, freight/intermodal facilities, major tourist attraction)
 - Seasonal traffic variations
 - Time-of-day variations (e.g. school traffic)
- CMP Advisory Committee involved



DIFFERENT TYPES OF CONGESTION



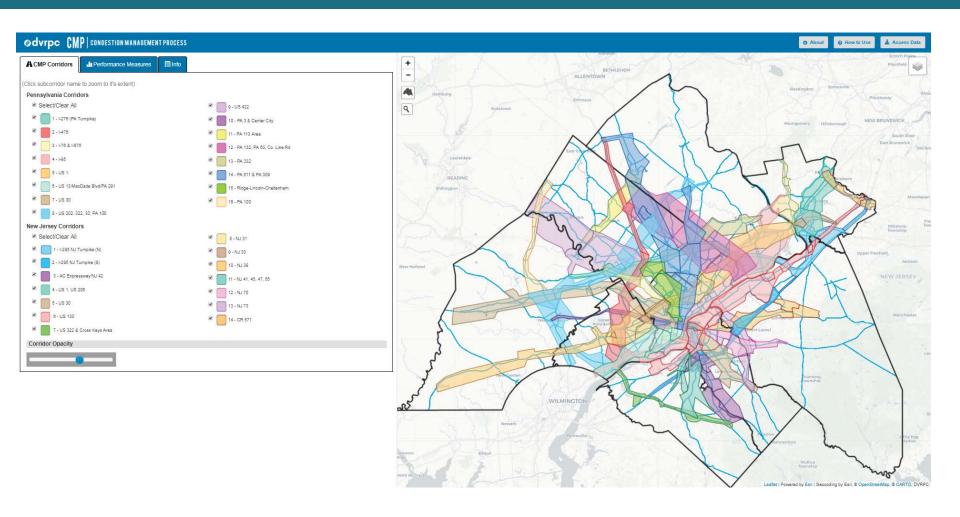
- Recurring congestion
 - Bottlenecks
 - Poor Signal Timing
- Non-recurring congestion
 - Crashes
 - Disabled vehicles
 - Work zones
 - Weather conditions
 - Special events



Source: FHWA

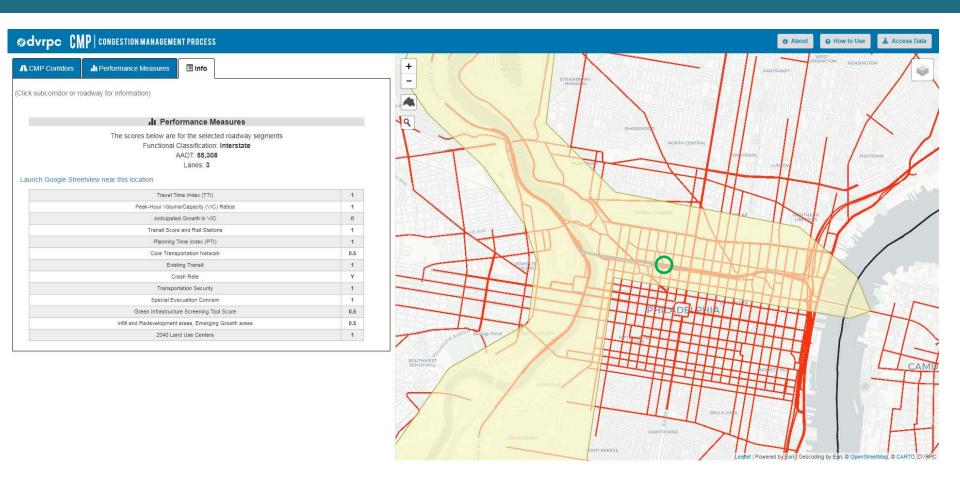


CMP CORRIDOR/SUBCORRIDOR AREAS





CMP CORRIDOR/SUBCORRIDOR AREAS





CONGESTION MITIGATION STRATEGIES

Congestion Management Process (CMP)

I-76 and I-676: I-76 from the Walt Whitman Bridge and I-676 from the Ben Franklin Bridge past their juncture to the PA Turnpike

Corridor 3 Subcorridor A: I-676/76 to City Avenue

Walt Whitman and Ben Franklin bridges through the I-676/76 merge to the vicinity of US 1 interchanges. This subcorridor in contains the East Side Rail Yard, Packer Ave Marine Terminal, and West Falls Rail Yard freight facilities, and the following rail and 25th St. Viaduct, all of which serve important passenger and freight rail traffic in the region. This subcorridor is in the to contains high-use rail stations, high-use bus stops, freight centers, and road segments with high crash rates. This subcorridor bridges, key passenger rail bridges, key rail stations, key road system bridges, and military facilities. It has high concentration percentage of carless households and poverty.

Improvements to make it more possible and convenient to fully use all available modes of transportation for their best purposes. Examples might include minor improvements to roads needed for truck access to rail sidings or improved communications/ITS approaches. See also Freight Intermodal Center/Yard or Freight Village in the Goods Movement section and Making Transfers Easier for Passengers in the Transit Improvements section.

Very Appropriate Strategies Signal Improvements Intelligent Transportation Systems (ITS) Integrated Corridor Management (ICM) Incident Management Expanded Parking for Existing Transit Stations (all modes) Major Reconstruction with Minor Capacity Additions

Secondary Strategies Transportation Security Making Intermodal Transfers Easier for Freight Maintenance Management (Maintenance and Work Zones) Planning and Design for Nonmotorized Transportation ITS Improvements for Transit Transit Infrastructure Improvements Freight Operations Improvements County and Local Road Connectivity

Strategies to make the truck, freight rail, and other means of moving goods function more efficiently by themselves or in combination with each other.



SOME GOODS MOVEMENT CONGESTION MITIGATION STRATEGIES



- Freight Operations Improvements Strategies to make truck, freight rail, and other means of moving goods function more efficiently by themselves or in combination
 - Provide provisions for short-term truck parking for various types of deliveries in urban areas
 - Provide for full-service overnight truck parking facilities
 - Bottleneck Removal for Freight Rail
 - Freight Rail (rehabilitation or reconstruction)
- Freight Capacity Investments
 - Grade-Crossing Separations
 - Freight Rail (new or expanded)
 - Freight Intermodal Center/Yard or Freight Village
 - Port Facility Expansion



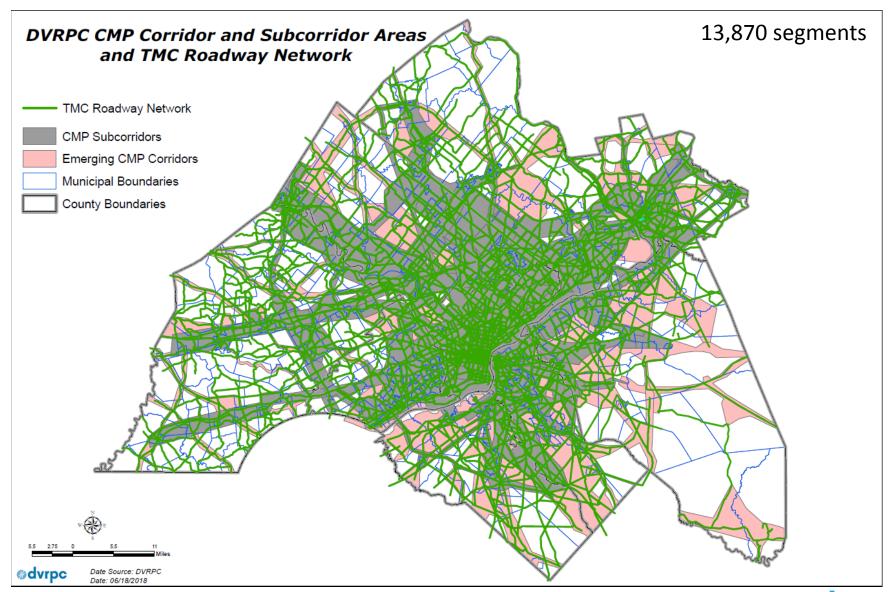
CMP UPDATE



- New data sources
 - INRIX
 - NPMRDS
- New performance measures
 - Federal Performance Management (PM3)
 - Vehicle Delay
 - Total Delay
- New analysis
 - Focus roadway facilities
 - Focus bottlenecks (or intersections)

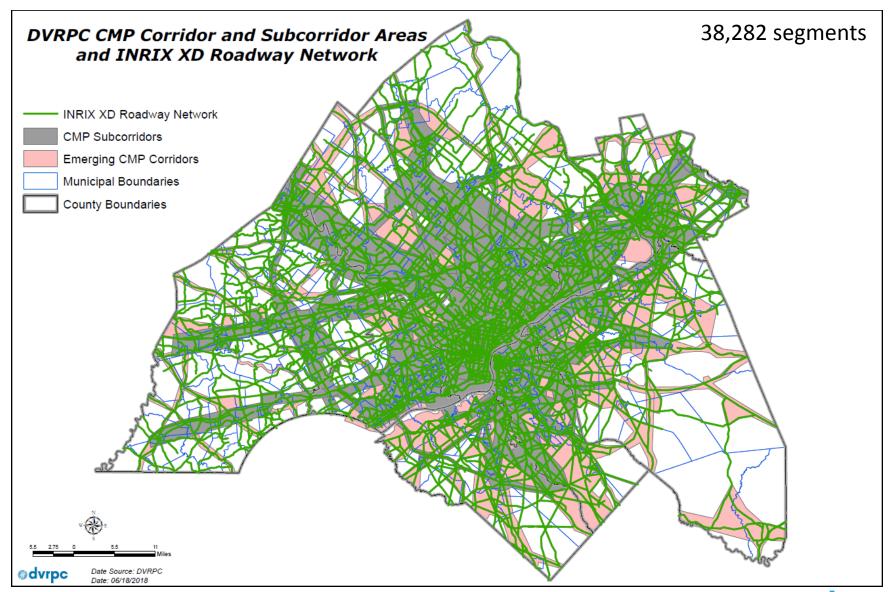


INRIX TMC Roadway Network



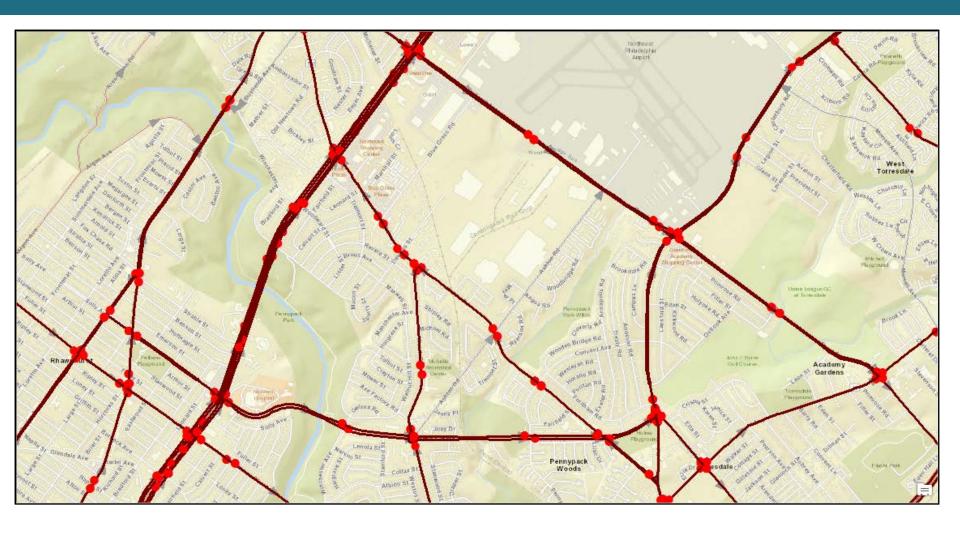


NEW INRIX Roadway Network



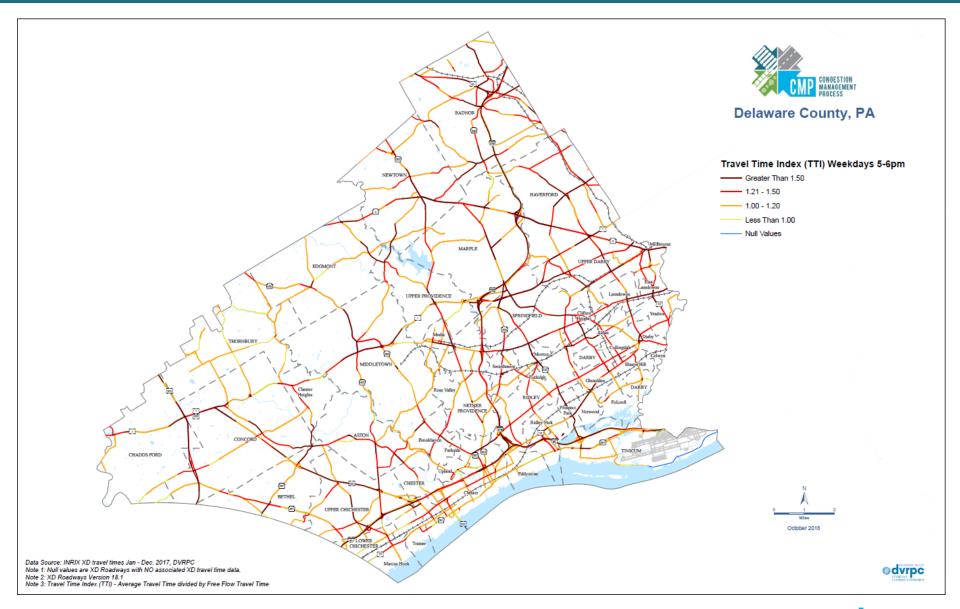


INRIX TMC and NEW INRIX Network





Delaware County, PA - Travel Time Index





NPMRDS (PM3)



- Data National Performance Management Research Dataset (NPMRDS)
- Measures
 - Truck Travel Time Reliability (TTTR)
 - Level of Travel Time Reliability (LOTTR)
 - Peak Hour Excessive Delay (PHED)
- Processing Probe Data Analytics (PDA) Suite Software



TRUCK TRAVEL TIME RELIABILITY (TTTR)

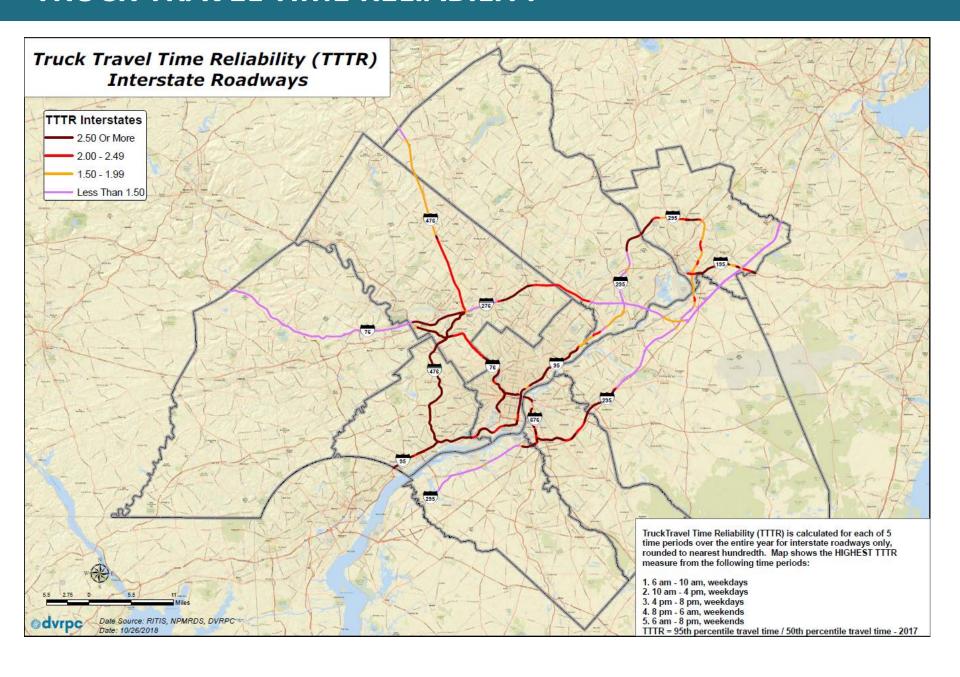


- TTTR established statewide
- Includes Interstate roadways only
- Calculated by roadway segment for five (5) time periods
- Reliability measured as an Index 95th percentile travel time divided by 50th percentile time

TTTR	Baseline (2017)	2-Year Target	4-Year Target
PA	1.34	1.34	1.34
NJ	1.81	1.90	1.95
PA – DVRPC	2.02	N/A	N/A
NJ - DVRPC	1.58	N/A	N/A



TRUCK TRAVEL TIME RELIABILITY



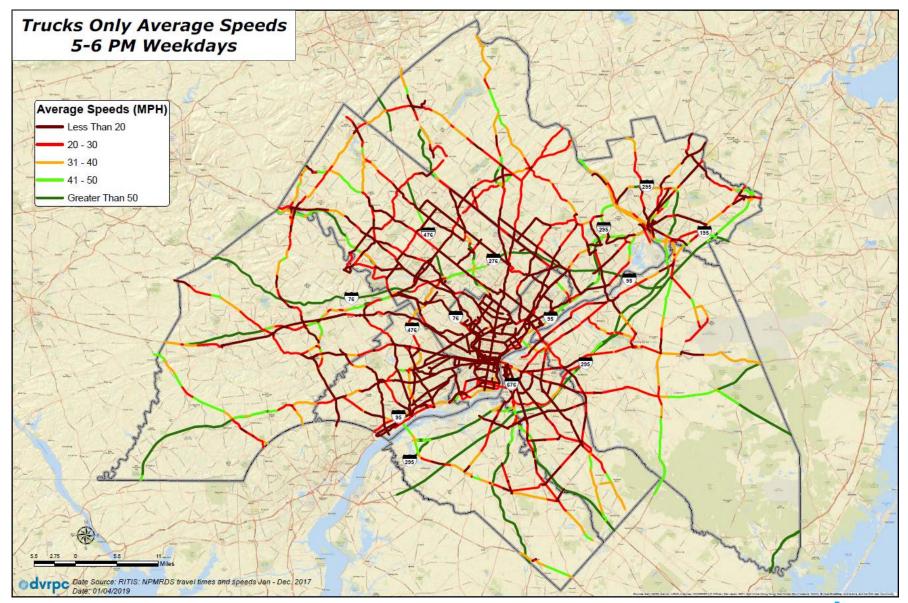
NPMRDS (OTHER)



- National Highway System (NHS)
 - Interstates
 - Major arterials
- Truck Travel Speeds
- Truck Travel Times
 - Travel Time Index
 - Planning Time Index

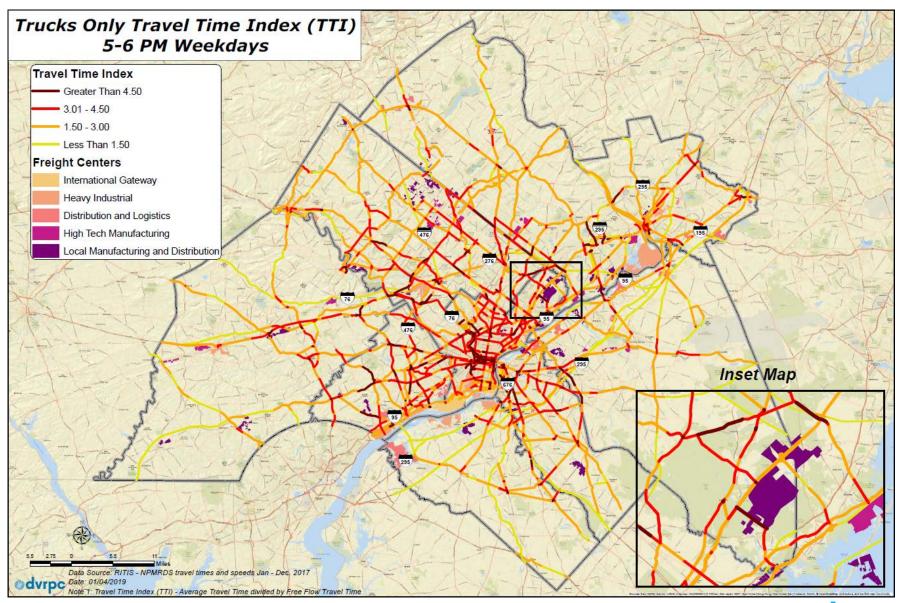


TRUCK ONLY AVERAGE SPEEDS



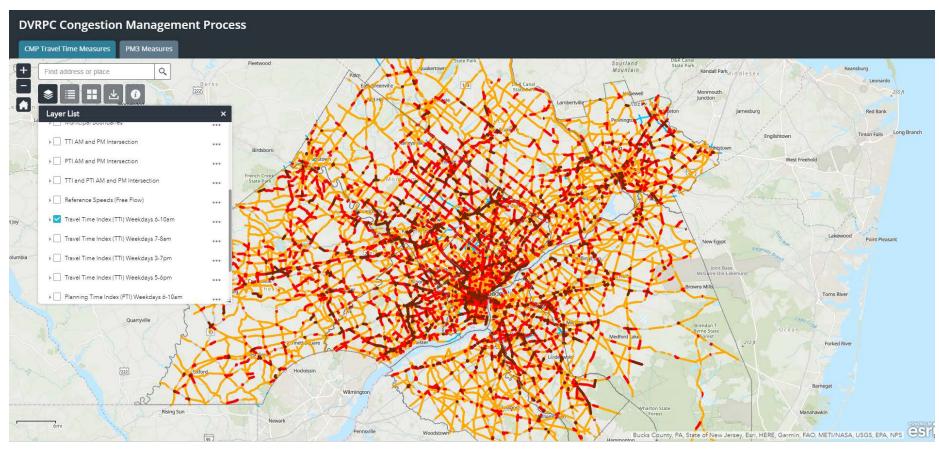


TRUCK ONLY TRAVEL TIME INDEX





CMP Travel Time and PM3 Measure Web Mapping



Web mapping



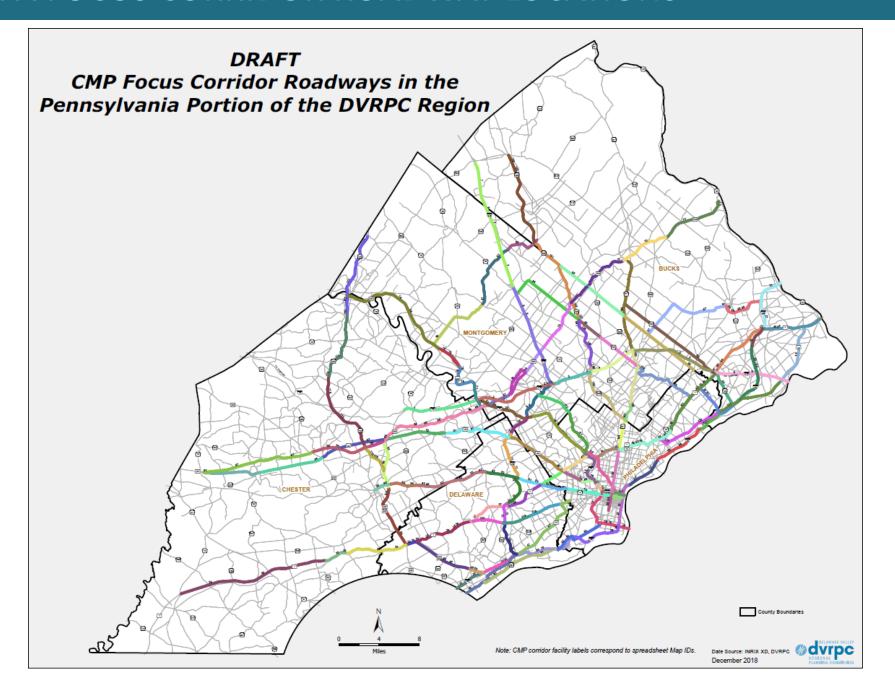
FOCUS CORRIDOR ROADWAY ANALYSIS



- Aggregate travels times by corridor to analyze delays
 - Roadway name
 - From/To Limit Corridor
 - Miles
 - Municipality/County as applicable
 - AM/PM Peak Vehicle Delay
 - AM/PM Peak Volume Delay



PA FOCUS CORRIDOR ROADWAY LOCATIONS

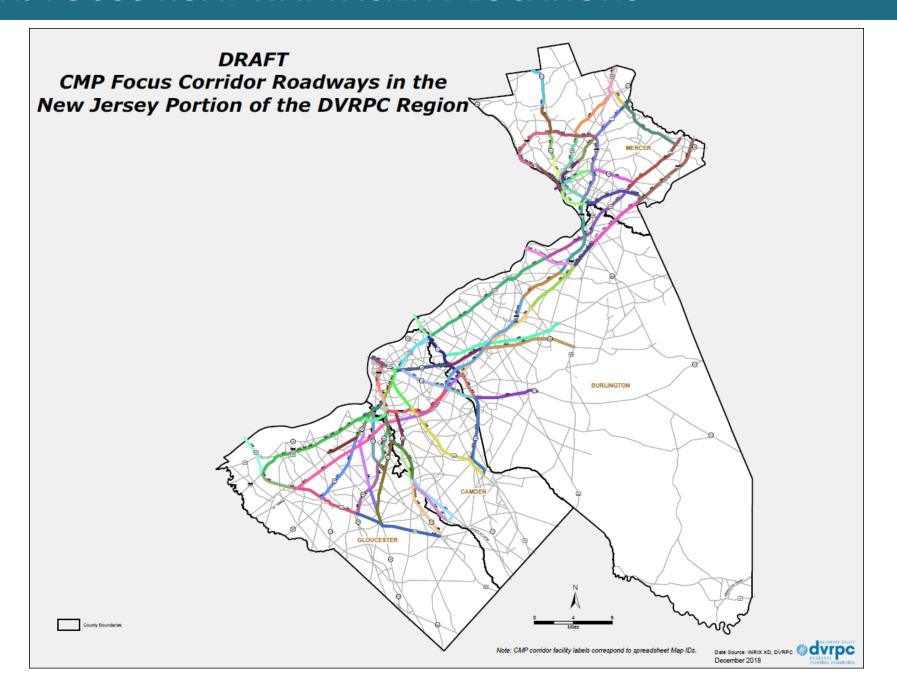


PA FOCUS CORRIDOR ROADWAY DELAY CALCULATIONS

	PA Corridor Roadway Facilities in DVRPC Region - Congestion Peak Delay Per Vehicle and Total Delay Normalized By Corridor Length DRAFT																								
PA Corridor Roadway Facilities in DVRPC Region - Congestion Peak Delay Per Vehicle and Total Delay Normalized By Corridor Length DRAFT Focus Roadway Facilities Sorted By Volume Delay Rank																									
Focus Roadway Facilities	Sorted By V	olume Delay	Rank									_													
														nicle De	elay Per f				Peak Hour 1	Total Volume	me Delay Per Mile				
												AM	PM		AM/PN						AM/PM	AM Peak	PM Peak		
Мар							imited					Delay	Delay	Peak	Highes					Total Peak	Highest	Volume	Volume		
ID Route	From Limit		To Limit		Mi			Munici			County	(sec)	(sec)	Delay	Delay	Rank	Ran		Delay	Delay	Total Delay	Delay (Hr)	Delay (Hr)		
117 I-676 (Vine Street Exp) 18 I-76	I-76 US 30 (Girard		Ben Frank US 1 (City			5.10 7.73		Philadel Philadel			Philadelphia Philadelphia	36.67 91.81	124.25 73.72	124.25 91.81		3	2			11752521.27 10301683.44	PM PM	749:19:46 2772:03:31	3264:35:21 2861:34:43		
16 1-76	L-95	Ave)		e Street Exp)		3.61		Philadel Philadel			Philadelphia	23.47	51.94	51.94		31	3	3319875.70	9445434.17	9445434.17	PM	922:11:16	2623:43:54		
19 1-76	US 1 (City Ave)	1-476	c Street Expj		4.66	Yes	Lower N			Montgomery	45.23	59.98	59.98		22	4	5277651.32	8999762.32	8999762.32	PM	1466:00:51	2499:56:02		
20 1-76	I-476	,	I-76 Turns	pike	1	0.72	Yes	Upper N	Merion		Montgomery	27.75				25	5	2741671.05	7449415.15	7449415.15	PM	761:34:31	2069:16:55		
26 1-95	Academy Rd		PA 90 (Bet	tsy Ross Bridge)	1	0.72	Yes	Philadel			Philadelphia	49.63 15.00 49		49.63	8 AM	33	6	6209787.48	2413721.78	6209787.48	AM	1724:56:27	670:28:42		
42 US 1 (Roosevelt Blvd)	PA 611		PA 73			2.82	No	Philadel			Philadelphia	29.07	38.12	38.12	_	53	7	3581709.38	6036984.44	6036984.44	PM	994:55:09	1676:56:24		
28 1-95	I-676 (Vine Str			Whitman Bridg		7.53	Yes	Philadel			Philadelphia	9.12	67.68	67.68		17	8	625124.93	5966347.50	5966347.50	PM	173:38:45	1657:19:08		
27 I-95 17 I-76	PA 90 (Betsy R I-676 (Vine Str		US 30 (Gir	e Street Exp)		8.55 2.55	Yes Yes	Philadel Philadel			Philadelphia Philadelphia	59.00	41.85	59.00		23	9	5468000.76 676305.97	4986755.70	5468000.76	AM	1518:53:21	1385:12:36		
100 PA 611 (Broad St)	I-676	eet Expj	US 1	ald Avej		9.14		Philadel			Philadelphia	33.78	80.17	80.17	7 PM	10	11	1447916.78	4418686.61	4418686.61	PM	402:11:57	1227:24:47		
90 PA 132 (Street Rd)	US 1		PA 611 (E	aston Rd)		3.15	No	various	pina		Bucks	16.55	42.81	42.81	_	50	12	1299959.56	4324331.37	4324331.37	PM	361:06:00	1201:12:11		
40 US 1 (City Ave)	US 30 (Girard	Ave)	I-76			5.18	No	Lower N	Merion, P	Philadelphia	Montgomery, Philadelphi	29.46	147.69	147.69	PM PM	1	13	662410.85	4269097.38	4269097.38	PM	184:00:11	1185:51:37		
2 I-276 Turnpike	I-76 (Valley F																			3	PM	15:15:15	1127:32:03		
32 1-95	US 322 (Com																			4	PM	391:24:31	1113:46:50		
9 I-476 107 PA 309	I-276 Turnpik PA 63	Poak	Hour Ve	hicle De	av Par I	Aile					Peak Hour	Total	Volum	mo I)alau	Dor I	Aile			-	PM PM	596:09:48 311:13:43	1057:47:32 864:57:59		
43 US 1 (Roosevelt Blvd)	PA 73	reak	nour ve	nicie De	ay Per II	nne					reak nour	TOTAL	volui	ne t	Delay	ren	ville			8	PM	321:34:17	855:11:27		
64 US 322/US 202	US 1	AM	PM		AM/PN	1									AM/	PM		AM Peak	PM Peak		PM	423:39:29	832:16:36		
11 I-476	US 30 (Villand	Dalam	Dol.	Don't							1/-1 DAA			.					24-1-		PM	35:13:59	831:30:59		
30 1-95	PA 291 (Phila	Delay	Delay	Peak	Highest				- 1	Volume AM	Volume PM	Tota	Peak		High	est		Volume	Volu	me s	PM	110:38:15	816:35:06		
41 US 1	I-76	(sec)	(sec)	Delay	Delay	l p	ank	D	ank	Delav	Delav	De	lav	T.	otal (alav	l n	elay (Hr)	Delay	(He)	PM	212:18:09	804:22:43		
14 1-476	Baltimore Pik		1000					- IN									-				PM	665:01:01	801:05:18		
67 US 202 31 I-95	I-76 I-476	36.67	124.25	124.25	PM		3		1	2697585.75	11752521.27	1175	2521.2	27	PΝ	4	1	749:19:46	3264	:35:21	PM PM	197:20:02 409:47:24	792:46:22 753:44:11		
110 Ridge Ave	Callowhill St	91.81	73.72	91.81	AM	\top	8	\top	2	9979411.01	10301683.44	1030	1683.4	1.4	PΝ	Л	Т	2772:03:31	2861	:34:43	PM	217:02:11	739:33:36		
104 PA 611	1-276					+	_	-	_								₩			7	PM	215:28:42	724:18:54		
105 PA 309	PA 611	23.47	51.94	51.94	PM		31		3	3319875.70	9445434.17	944	9445434.17		PM			922:11:16	2623:43:54		PM	315:07:49	721:11:50		
103 PA 611	PA 73	45.23	59.98	59.98	PM	Т	22		4	5277651.32	8999762.32	200	8999762.32		PM		П	1466:00:51	2499	:56:02	PM	214:08:12	708:50:23		
78 PA 3 (Market St)	I-95 (Penns L		00100			-		+	_				0000102						_		PM	170:27:42	646:25:01		
4 I-276 Turnpike 29 I-95	PA 309 (Fort I-76 (Walt WI	27.75	58.65	58.65	PM		25		5	2741671.05	7449415.15	7449415.15		15	PM		PM PM			761:34:31	2069	:16:55	AM PM	615:06:14 77:24:30	252:07:14 614:47:50
79 PA 3	PA 611	49.63	15.00	49.63	AM	Т	33		6	6209787.48	2413721.78	6209787.48		18	AM		П	1724:56:27	670	:28:42	PM	111:36:29	612:40:30		
47 US 13	1-95					-		+	_								-		-	9	PM	244:51:24	599:37:21		
122 US 13	PA 63	29.07	38.12	38.12	PM	\perp	53		7	3581709.38	6036984.44	6036984.44		14	PM		_	994:55:09	1676	:56:24	PM	245:54:35	575:48:04		
99 PA 611 (Broad St)	Washington a	9.12	67.68	67.68	PM		17		8	625124.93	5966347.50	596	6347.5	347.50 PM		173:38:49		5 1657:19:0		PM	214:44:46	566:22:03			
50 US 30	US 1 (City Av					-		+	_										PM	121:36:54	556:41:50				
94 PA 63 38 US 1	PA 309 I-476	59.00	41.85	59.00	AM	\perp	23	$oldsymbol{\perp}$	9	5468000.76	4986755.70	5468000.76		6	A	И	1518:53:2:		1385	:12:36	PM PM	213:02:15 255:59:40	552:50:01 543:58:49		
89 PA 132 (Street Rd)	1-95	20.70	119.77	119.77	PM		4		10	676305.97	5029955.39	5029955.39		39	PM		187:51:46		1397	:12:35	PM	86:46:16	539:18:09		
56 US 30 Bypass	PA 100		US 322		1	1.90	res	west w	niteianu	, East Cain, Cain	Chester			28.03			41 4/4561.43		1903282.17	1903282.17	PM	131:49:21	528:41:22		
119 Baltimore Pike	North Ave		I-476			5.55	No	Nether I	Provider	nce, Springfield	Delaware	30.98	70.20	70.20		14	42		1862906.56	1862906.56	PM	177:36:54	517:28:27		
52 US 30	PA 252 (Leopa	rd Rd)	US 202			1.59				stown, East Whiteland	Chester	24.06	54.33	54.33		29	43		1844553.96	1844553.96	PM	176:29:17	512:22:34		
60 US 322	PA 452		US 1			2.22 4.84	No			er, Bethel, Concord	Chester	46.79	70.88	70.88		13	44		1840503.93	1840503.93	PM PM	262:30:24	511:15:04		
81 PA 3 (West Chester Pike) 10 I-476	US 1 I-76 (Conshob	ocken)	I-476 US 30 (VIII	lanova)		4.84 5.83		Haverfo		en, Lower Merion, Radnor	Delaware Delaware, Montgomery	76.48 1.45	83.37 22.89	83.37 22.89		9 83	45 46		1705708.56 1641029.74	1705708.56 1641029.74	PM PM	338:02:08 22:31:26	473:48:29 455:50:30		
82 PA 3 (West Chester Pike)	. re leananen	ocken)	PA 252	ianovaj		6.74			Newtow	. ,	Delaware, Montgomery	30.06	58.84	58.84		24	47		1618257.91	1618257.91	PM	178:38:16	449:30:58		
95 County Line Rd	PA 532		PA 611			7.62	_	various	THE WILD'S	***	Bucks, Montgomery	14.86	32.68	32.68		65	48		1607046.69	1607046.69	PM	157:49:14	446:24:07		
12 1-476	US 3 (Broomal	II)	US 1			7.37		Marple			Delaware	22.49	26.94	26.94		77	49		1584884.66	1584884.66	PM	285:54:26	440:14:45		
116 Route 100	US 30 Bypass		US 202			6.66				l, West Goshin	Chester	4.09	45.65	45.65		42	50		1574074.72	1574074.72	PM	30:30:03	437:14:35		
53 US 30 (Lancaster Ave)	US 202 US 322 (Downingtown)			3.59	_			East Caln West Whiteland	Chester	14.86	42.87	42.87		49	51		1521793.98	1521793.98	PM	113:56:08	422:43:14				
39 US 1	PA 3		US 30			5.57	Yes		Merion, H	Haverford	Delaware, Montgomery		28.33 52.12 52			30	52		1474388.72	1474388.72	PM	173:10:34	409:33:09		
115 Route 100 51 US 30	Nantmead Rd I-476		US 30 Byp	eopard Rd)		7.42 3.83		various Radnor	Traduffi	rin, Easttown	Chester Chester, Delaware	14.92 12.97	29.01 37.79	29.01 37.79		72 55	53 54		1472153.52 1405184.45	1472153.52 1405184.45	PM PM	163:36:14 104:10:55	408:55:54 390:19:44		
66 US 202	US 30		I-76	coparu Kuj		3.83	_			rin, Easttown Tredyffriin	Chester, Delaware Chester	1.86	8.81	8.81		103	55		1405184.45	1405184.45	PM	64:08:19	390:19:44		
77 US 422	Trooper Rd		US 202		_	4.84	Yes			West Norriton	Montgomery	9.92	33.73	33.73	_	62	56	315529.13	1379817.77	1379817.77	PM	87:38:49	383:16:58		
13 1-476	US 1			Pike (Swarthmo		3.54			Springfi		Delaware	69.03	34.27	69.03			57	1374359.00	877284.42 137435		AM	381:45:59	243:41:24		
62 PA 291	I-95		I-76		_	1.03		Philadel			Philadelphia	18.63	28.15	28.15		75	58	695904.36	1351824.44	1351824.44	PM	193:18:24	375:30:24		
76 US 422	Egypt Rd Troc			ld		6.81	Yes	Upper P	roviden	ce, Lower Providence	Montgomery	43.53	36.61	43.53	8 AM	47	59	1236162.10	1336450.38	1336450.38	PM	343:22:42	371:14:10		



NJ FOCUS ROADWAY FACILITY LOCATIONS



NJ FOCUS ROADWAY FACILITY DELAY CALCULATIONS

	NJ Roadway Corridor Facilities in DVRPC Region - Congestion Peak Delay Per Vehicle and Total Delay Normalized By Corridor Length DRAFT																			
Focu	Focus Roadway Facilities Sorted By Volume Delay Rank Peak Hour Vehicle Delay Per Mile Peak Hour Total Volume Delay Per Mile																			
								Peak	Hour Ve	hicle Del	ay Per Mi	e			Peak Hou	r Total Volum	e Delay Per M	ile		
								AM	PM		AM/PM						AM/PM	AM Peak	PM Peak	
Map					Limited			Delay	Delay	Peak	Highest			Volume AM	Volume PM	Total Peak	Highest Total	Volume	Volume	
	Route	From Limit	To Limit	Miles	Access	Municipality	County	(sec)	(sec)	Delay	Delay	Rank	Rai		Delay	Delay	Delay	Delay (Hr)	Delay (Hr)	
208	I-295	NJ 42 (Exit 26)	NJ 70 (Exit 34)	14.24	Yes	various	Camden	17.30	39.22	39.22		11	1		6976452.20	6976452.20	PM	664:44:28	1937:54:12	
228		I-676	I-295	4.95	Yes	Camden City, Gloucester City, Bellmawr	Camden	5.86	68.41	68.41		2	2		5066924.96	5066924.96	PM	93:50:51	1407:28:45	
209		NJ 70 (Exit 34)	NJ 541 (Exit 47)	25.76	Yes	various	Camden, Burlington	1.20	15.13	15.13		50	3		4359939.69	4359939.69	PM	74:50:51	1211:05:40	
	US 30	US 130 US 130	I-295 NJ 73	10.37 10.47	No	various	Camden Canadan	14.51 5.46	49.91 33.62	49.91 33.62	PM PM	5	5		4023089.84 3472937.26	4023089.84 3472937.26	PM PM	252:47:40 121:50:44	1117:31:30 964:42:17	
252 211		AC Expressway	I-295	16.37	No Yes	Maple Shade, Cherry Hill, Pennsauken various	Burlington, Camden Camden, Gloucester	27.03	5.20	27.03		16 26	6		849271.12	3472937.26	AM	954:04:49	235:54:31	
272		NJ Turnpike (Exit 4)	NI 70	5.73	No	Mt. Laurel. Evesham	Burlington	20.75	78.77	78.77	PM	1	7		3288193.31	3288193.31	PM	187:07:07	913:23:13	
267		NJ 38	1-295	9.60	No	Pennsauken, Cherry Hill	Camden	7.49	40.19	40.19		10	8	0.0050111	2841624.97	2841624.97	PM	114:22:47	789:20:25	
	NJ 73	US 130	NJ Turnpike (Exit 4)	10.40	No	various	Camden, Burlington	11.07	31.68	31.68		20	9		2830634.28	2830634.28	PM	213:44:33	786:17:14	
273	NJ 73	NJ 70	US 30	17.55	No	Berlin, Voorhees, Evesham	Camden, Burlington	14.34	28.00	28.00	PM	22	10	1080293.27	2711840.57	2711840.57	PM	300:04:53	753:17:21	
253	NJ 38	NJ 73	I-295	8.20	No	Maple Shade, Moorestown, Mt. Laurel	Burlington	10.82	54.90	54.90	PM	4	11	411658.46	2685118.16	2685118.16	PM	114:20:58	745:51:58	
268	NJ 70	I-295	NJ 73	6.65	No	Cherry Hill, Evesham	Camden, Burlington	15.42	37.59	37.59	PM	13	12	849196.97	2661287.23	2661287.23	PM	235:53:17	739:14:47	
	US 130	I-95	NJ 73	29.44	No	various	Burlington	9.39	14.99	14.99		51	13		2542197.27	2542197.27	PM	344:04:52	706:09:57	
226		I-295	I-95 (NJ Turnpike)	11.61	Yes	Hamilton, Robbinsville	Mercer	4.63	26.66	26.66		27	14		2136316.40	2136316.40	PM	80:14:20	593:25:16	
	US 30	1-295	NJ 73	20.91	No	various	Camden	19.12	26.48	26.48		28	15		2080131.21	2080131.21	PM	324:28:01	577:48:51	
217	US 1 US 130	I-95 NJ 73	Alexander Rd US 30	8.68 10.30	No	Lawrence, West Windsor	Mercer Camden	3.80 7.69	34.44 22.22	34.44 22.22		14 34	10		1876762.54 1832189.06	1876762.54 1832189.06	PM PM	44:47:45 136:57:05	521:19:23 508:56:29	
	US 130 US 130	NJ 73 US 30	I-76	4.43	No No	Pennsauken various	Camden Camden	7.69 4.45	44.32	44.32		6	18	_	1832189.06 1616349.45	1832189.06 1616349.45	PM PM	136:57:05 35:02:54	508:56:29 448:59:09	
	NJ 70	NJ 73	Eavrestown Rd	13.22	No	Evesham, Medford	Burlington	12.46	31.98	31.98		19	19		1611769.63	1611769.63	PM	135:38:54	448:39:09	
	NJ 168	1-295	NJ 42	7.59	No	Gloucester, Runnemede, Bellmawr	Camden	43.58	66.58	66.58		3	20		1506099.07	1506099.07	PM	212:57:57	418:21:39	
	NJ 38	1-295	US 206	19.10	No	various	Burlington	4.34	12.83	12.83		55	2:		1464400.05	1464400.05	PM	107:08:00	406:46:40	
218	US 1	Alexander Rd	County Line	2.76	No	West Windsor	Mercer	14.23	43.71	43.71	PM	7	22	348089.69	1375224.49	1375224.49	PM	96:41:30	382:00:24	
277	I-295	NJ 31	NJ 29	8.91	Yes	Hopewell, Ewing	Mercer	1.33	32.91	32.91	PM	18	23	42119.97	1336694.17	1336694.17	PM	11:42:00	371:18:14	
258	NJ 55	NJ 42	NJ 47	8.05	Yes	Deptford	Gloucester	42.30	12.41	42.30	AM	9	24	1320023.24	497889.58	1320023.24	AM	366:40:23	138:18:10	
276	I-295	US 1	NJ 31	9.52	Yes	Hopewell, Lawrence	Mercer	4.11	15.15	15.15	PM	49	25	256425.98	1214899.20	1214899.20	PM	71:13:46	337:28:19	
227		US 30	I-76	6.29	Yes	Camden City	Camden	1.99	25.72	25.72		29	26		1136168.06	1136168.06	PM	19:00:14	315:36:08	
207	. 200	US 130	NJ 42 (Exit 26)	8.00	Yes	West Deptford, Westville, Bellmawr	Camden	14.25	7.70	14.25		53	27		773588.78	1113761.60	AM	309:22:42	214:53:09	
	US 130	NJ 133	I-195	15.22	No	Hamilton, Robbinsville, East Windsor	Mercer	7.82	19.00	19.00		39	28		955806.83	955806.83	PM	84:56:03	265:30:07	
219	US 206	I-195	I-295 CR 616 (Whitehead Rd)	16.93 7.79	No	Hamilton, Trenton, Lawrence Trenton, Lawrence	Mercer Mercer	21.91 3.57	23.54 16.55	23.54 16.55		33 45	30		923969.24 875095.70	923969.24 875095.70	PM PM	185:43:29 40:46:52	256:39:29 243:04:56	
	NJ 42	Delaware River AC Expressway	US 322	12.82	Yes	Washington, Monroe	Gloucester	3.88	19.97	19.97		35	31		858326.76	858326.76	PM	36:03:51	238:25:27	
	CR 537 (Marne Hwy)	NJ 73	CR 630 (Woodlane Rd)	25.19	No	various	Burlington	8.15	19.12	19.12		38	32		828419.71	828419.71	PM	76:14:22	230:07:00	
243		Cass St	CR 579 (Sullivan Way)	6.53	No	City of Trenton	Mercer	7.23	27.80	27.80		23	33		815903.96	815903.96	PM	45:49:16	226:38:24	
251		1-295	US 130	9.00	No	Robbinsville, Hamilton	Mercer	5.17	31.55	31.55		21	34		786498.54	786498.54	PM	27:49:36	218:28:19	
237	US 130	I-76	I-295	6.09	No	various	Camden, Gloucester	16.37	23.72	23.72	PM	32	35	375955.24	700489.97	700489.97	PM	104:25:55	194:34:50	
232	US 130	I-195	I-295	13.26	No	Bordentown, Hamilton	Burlington, Mercer	4.56	11.23	11.23	PM	58	36	219029.89	692759.71	692759.71	PM	60:50:30	192:26:00	
	US 322	NJ 55	NJ 42	19.08	No	Harrison, Glassboro, Monroe	Gloucester	10.86	18.56	18.56	PM	41	37	309238.07	679551.02	679551.02	PM	85:53:58	188:45:51	
247		I-295	CR 623 (Pennington Harbourton Rd)	6.53	No	Hopewell, Pennington	Mercer	12.26	19.67	19.67		36	38		664620.44	664620.44	PM	89:30:39	184:37:00	
	NJ 47	NJ 55	US 322	13.22	No	Deptford, Washington, Glassboro	Gloucester	7.21	24.74	24.74	PM	31	39		624285.60	624285.60	PM	39:19:23	173:24:46	
	US 30	Ben Franklin Bridge	US 130	5.33 7.01	Yes	Camden City	Camden	3.36 22.10	10.24	10.24		61	40		617148.33	617148.33	PM	43:41:16	171:25:48	
221	US 206	CR 604 (Elm Rd) CR 616 (Whitehead Rd)	County Line I-95	6.17	No	Princeton	Mercer Mercer	10.36	32.99 16.66	32.99 16.66	PM PM	17 44	42		603124.91 589063.69	603124.91 589063.69	PM PM	87:17:12 79:07:48	167:32:05 163:37:44	
	US 130	I-295	1-95	9.30	Yes No	Florence, Mansfield, Bordentown	Burlington	5.13	15.84	15.84		48	43		480469.01	480469.01	PM PM	79:07:48 33:37:31	163:37:44	
260		US 130	Kings Hwy	6.11	No	Woodbury, West Deptford, Westville	Gloucester	16.38	38.77	38.77	PM	12	4:		448745.90	448745.90	PM	40:57:07	124:39:06	
	CR 571	US 1	US 130	13.89	No	West Windsor, East Windsor	Mercer	11.47	15.97	15.97	PM	47	45		445954.33	445954.33	PM	69:11:59	123:52:34	
	NJ 73	Tacony Palmyra Bridge	US 130	4.90	No	Palmyra, Pennsauken	Camden, Burlington	2.80	12.51	12.51	PM	56	46		399520.53	399520.53	PM	19:20:37	110:58:41	
261		Kings Hwy	US 322	14.61	No	various	Gloucester	5.06	14.49	14.49		52	47		379319.13	379319.13	PM	28:38:28	105:21:59	
	US 322	I-295	NJ Turnpike	8.12	No	Logan, Woolwich	Gloucester	17.46	27.13	27.13		25	48		362518.94	362518.94	PM	50:24:32	100:41:59	
	NJ 168	NJ 42	AC Expressway	7.24	No	Gloucester	Camden	15.65	25.30	25.30		30	49		358881.53	358881.53	PM	47:57:14	99:41:22	
	US 206	I-295	CR 604 (Elm Rd)	11.08	No	Lawrence, Princeton	Mercer	12.24	17.09	17.09		42	50		351039.64	351039.64	PM	54:20:13	97:30:40	
203	1-295	CR 656 (Florence Columbus Rd)	I-195	16.93	Yes	various	Burlington	2.23	2.65	2.65		67	51		345865.16	345865.16	PM	63:03:28	96:04:25	
262		NJ 42	NJ 47	6.87	no	Deptford	Gloucester	20.61	27.41	27.41	PM	24	57		340745.32	340745.32	PM	55:20:12	94:39:05	
256		US 130	NJ 55 I-295	10.64 6.85	No	Deptford, Westville	Gloucester	19.32 9.59	13.91 6.46	19.32 9.59		37	53		306589.76	331149.72 258271.67	AM AM	91:59:10	85:09:50 62:08:46	
278 248		Cass St CR 623 (Pennington Harbourton Rd)	I-295 CR 518 (Lambertville Hopewell Rd)	8.48	Yes	City of Trenton, Hamilton	Mercer Mercer	9.59 5.25	13.39	9.59	PM	62 54	54		223726.25 241366.05	258271.67 241366.05	AM PM	71:44:32 20:26:44	67:02:46	
$\overline{}$	NJ Turnpike	CR 623 (Pennington Harbourton Rd) Exit 4 (Camden - Philadelphia)	Exit 5 (Burlington - Mt. Holly)	19.83	No Yes	Mount Laurel, Westampton	Burlington	0.54	2.33	2.33		68	55		241366.05	228105.86	PM PM	20:26:44	63:21:46	
	CR 553 (Kings Hwy)	NJ 55	NJ 47	5.07	No	Mantua, Pitman, Glassboro	Gloucester	6.32	16.02	16.02		46	57		221960.58	221960.58	PM	18:55:12	61:39:21	
	CR 553 (Kings Hwy)	1-295	NJ 55	14.63	No	various	Gloucester	4.48	10.02	10.28		60	58		220426.73	220426.73	PM	20:45:04	61:39:21	
	I-295	I-195	US 1	13.21	Yes	Hamilton, Lawrence	Mercer	3.46	1.84	3.46		66	59		149797.19	219009.57	AM	60:50:10	41:36:37	



Focus Corridor Roadways - Additional Measures

		Peak Hour To												itional Fact	ors						
			AM/PM	AM Peak	PM Peak			Critical	TDM V/C				High	Severe				High			
Map ID	Volume AM	Volume PM	Highest	Volume	Volume		Bure	Freight	0.80 or	710	DB# or	LRP	Crash	Crash	High	High	High	NPMRDS	Transit	Transit	Congested
117	Delay 2697585.75	Delay 11752521.27	Total Delay PM	Delay (Hr) 749:19:46	Delay (Hr) 3264:35:21	NHS Yes	PHFS Yes	Corridor Yes	Greater Yes	TIP No	MPMS# N/A	2045 No	Corridors	Corridors	PHED Yes	TTTR Yes	LOTTR Yes	TRUCK TTI Yes	Route Yes	Station No	Intersection
18	9979411.01	10301683.44	PM	2772:03:31	2861:34:43	163	162	162	162	IVO	N/A	140			162	162	TES	ies	res	NO	
16	3319875.70	9445434.17	PM	922:11:16	2623:43:54																
19	5277651.32	8999762.32	PM	1466:00:51	2499:56:02																
20	2741671.05	7449415.15	PM	761:34:31	2069:16:55																
26	6209787.48	2413721.78	AM	1724:56:27	670:28:42																
42	3581709.38	6036984.44	PM	994:55:09	1676:56:24																
28	625124.93	5966347.50	PM	173:38:45	1657:19:08																
27	5468000.76	4986755.70	AM	1518:53:21	1385:12:36																
100	676305.97 1447916.78	5029955.39 4418686.61	PM PM	187:51:46 402:11:57	1397:12:35 1227:24:47																
90	1299959.56	4324331.37	PM	361:06:00	1201:12:11	_															
40	662410.85	4269097.38	PM	184:00:11	1185:51:37																
2	54914.90	4059122.88	PM	15:15:15	1127:32:03																
32	1409070.60	4009610.44	PM	391:24:31	1113:46:50																
9	2146188.35	3808052.35	PM	596:09:48	1057:47:32																
107	1120423.10	3113879.00	PM	311:13:43	864:57:59																
43	1157657.39	3078687.43	PM	321:34:17	855:11:27																
64	1525169.19	2996195.56	PM	423:39:29	832:16:36																
11	126839.09	2993458.90	PM	35:13:59	831:30:59	_															
30 41	398295.46 764288.62	2939705.64 2895763.45	PM PM	110:38:15 212:18:09	816:35:06 804:22:43																
14	2394060.97	2883917.55	PM	665:01:01	801:05:18																
67	710402.11	2853982.47	PM	197:20:02	792:46:22	_															
31	1475244.41	2713450.69	PM	409:47:24	753:44:11																
110	781330.91	2662415.71	PM	217:02:11	739:33:36																
104	775722.48	2607534.27	PM	215:28:42	724:18:54																
105	1134469.25	2596309.60	PM	315:07:49	721:11:50																
103	770892.29	2551822.50	PM	214:08:12	708:50:23																
78	613662.05	2327101.18	PM	170:27:42	646:25:01																
4	2214373.99 278669.52	907633.61 2213269.54	AM	615:06:14 77:24:30	252:07:14 614:47:50																
29 79	401788.55	2205629.82	PM PM	111:36:29	612:40:30																
47	881483.94	2158641.09	PM	244:51:24	599:37:21																
122	885274.58	2072884.04	PM	245:54:35	575:48:04																
99	773086.31	2038923.37	PM	214:44:46	566:22:03																
50	437814.29	2004110.07	PM	121:36:54	556:41:50																
94	766935.32	1990201.15	PM	213:02:15	552:50:01																
38	921580.01	1958329.22	PM	255:59:40	543:58:49																
89	312376.19	1941489.39	PM	86:46:16	539:18:09																
56 119	474561.43 639413.57	1903282.17 1862906.56	PM PM	131:49:21 177:36:54	528:41:22	_				_		_									
52	635357.06	1844553.96	PM	176:29:17	517:28:27 512:22:34	_															
60	945024.10	1840503.98	PM	262:30:24	511:15:04																
81	1216927.56	1705708.56	PM	338:02:08	473:48:29	_															
10	81086.18	1641029.74	PM	22:31:26	455:50:30																
82	643096.09	1618257.91	PM	178:38:16	449:30:58																
95	568154.04	1607046.69	PM	157:49:14	446:24:07																
12	1029266.23	1584884.66	PM	285:54:26	440:14:45																
116	109803.46	1574074.72	PM	30:30:03	437:14:35	<u> </u>															
53	410167.86	1521793.98	PM	113:56:08	422:43:14	<u> </u>				_	-	_									
39 115	623434.22 588974.24	1474388.72 1472153.52	PM PM	173:10:34 163:36:14	409:33:09 408:55:54	<u> </u>				_		_									
51	375055.00	14/2153.52	PM PM	104:10:55	408:55:54 390:19:44	\vdash							 	 							
66	230898.95	1404948.64	PM	64:08:19	390:15:49																
77	315529.13	1379817.77	PM	87:38:49	383:16:58																
13	1374359.00	877284.42	AM	381:45:59	243:41:24																
62	695904.36	1351824.44	PM	193:18:24	375:30:24																

Goods Movement



BOTTLENECK RANKING CALCULATIONS

Deak I	k Intersection Delay By Intersection Name																		
Cak I	intersection belay by inte	racedon Name		Peak Vehicle Delay Peak Hour Volume Delay												Donk Hour Volume Truck Delay			
					Pe	ak venicie Deli	ay I				Intersection Legs	Peak H	our volume bela I	y		Peak Hour Volume Truck Delay			
MAP ID	Intersection Name	Municipality	County	AM Peak Vehicle Delay (sec)	PM Peak Vehicle Delay (sec)	Time of Day with Highest Delay	% of Total Delay on leg with most delay (High)	Rank		Rank	included in Peak Hr Volume and Peak	Peak Hour Volume	AM Peak Volume Delay (Hr)	PM Peak Volume Delay (Hr)	Time of Day with Highest Delay	Peak Hour Volume	Peak Volume Delay (Hr)	Time of Day with Highest Delay	t Rank
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Thank You!

Tom Edinger | tedinger@dvrpc.org | 215.238.2865





Greater Philadelphia Future Forces + Digital Transportation Technologies

FUTURE

Greater Philadelphia

FUTURE FORCES

FURCES



DVRPC Long-Range Planning



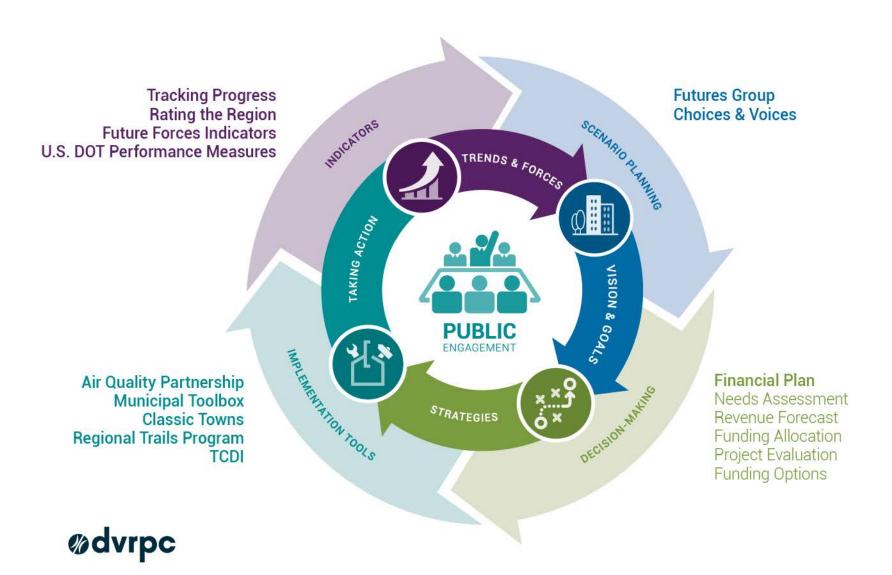


DVRPC Long-Range Planning





DVRPC Long-Range Planning



"The only relevant discussions about the future are those where we succeed in shifting the question from whether something will happen to what would we do if it happened"

Arie de Geus Shell International Petroleum Company



Scenario Planning

A structured way of thinking about the future by:

Identifying what conditions or events are probable.

Determining how to respond to or benefit from them.



Digital Infrastructure Implications















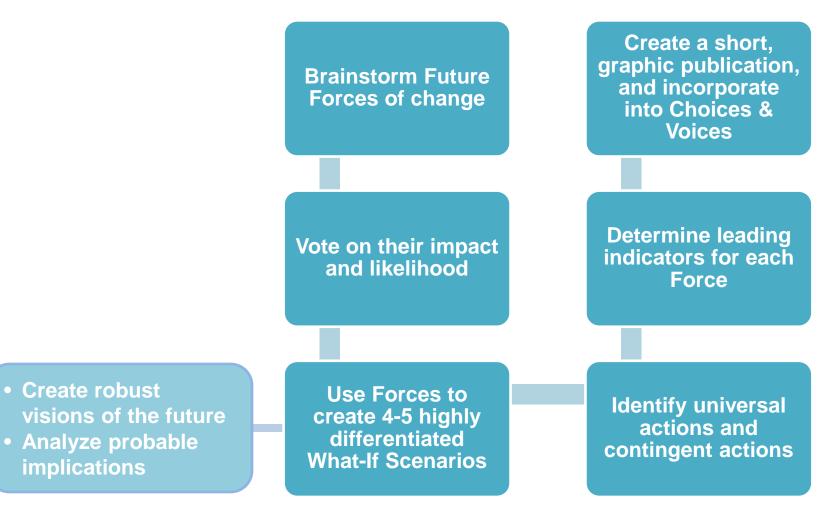




Greater Philadelphia's Futures Group



Futures Group Tasks





Draft Research Question

What forces generate the most uncertainty for Greater Philadelphia's socio-demographics, built and natural environment, and travel over the next 30 years.



Some Scenario Influencing Factors

Regional socio-demographics. Travel demand, and transportation infrastructure condition and funding. Climate change and environmental impacts. Land use and development. Regional and global economic implications, including jobs and work. **Equity repercussions.**



Upcoming Schedule

Starting Now: Recruit Futures Working Group. May 2019:
Public
meeting
during
Philly Tech
Week to
discuss
draft
scenarios.

Fall 2019: Share draft report with Futures Working Group.













February –
May 2019: 4
monthly
meetings
with
Futures
Working
Group to
develop
scenarios.

Summer 2019: Model scenarios. Early 2020:
Publish
Future
Forces
2050 &
Incorporate
New
Scenarios
into
Choices &
Voices.





Accepting Applications Now!



ENGAGE. COLLABORATE. ENVISION.

Please tell us a little bit about yourself.

https://www.surveymonkey.com/r/CWBN3RD





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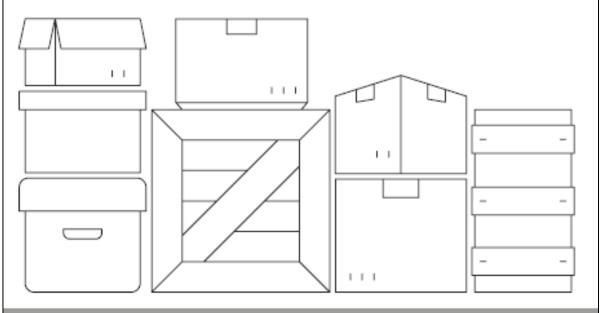
HOMEDELIVERY

WORLD USA 2019

APRIL 4-5
WORKSHOPS APRIL 3
PENNSYLVANIA CONVENTION CENTER, PHILADELPHIA

HOMEDELIVERY

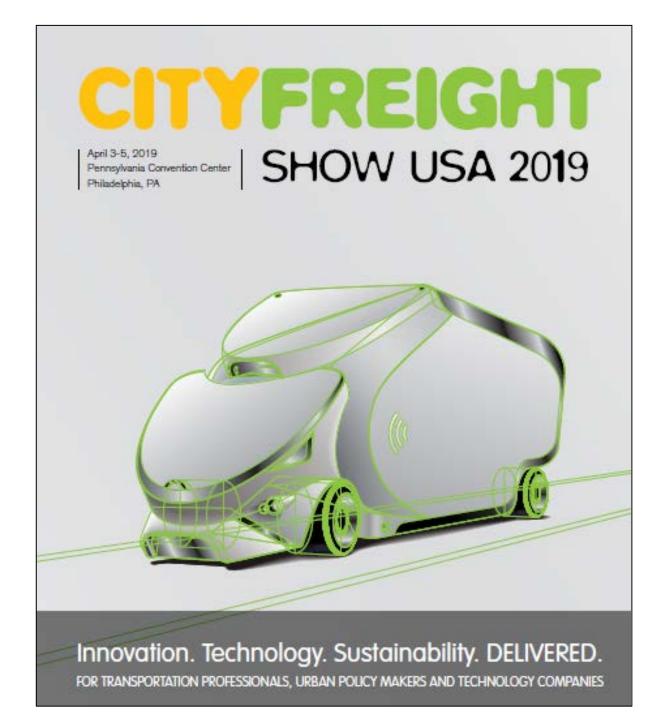
WORLD 2019



April 3-5, 2019 - Pennsylvania Convention Center, Philadelphia, Pennsylvania

THE EVENT

FOR RETAIL LOGISTICS



Our Story

Core vision: To uncover pathways for goods to efficiently navigate through major metro cities

- Transporting goods into dense urban areas has become a major issue
- Continued growth in urban populations, the evolution of eCommerce and constant battle between passenger transportation and freight movement impedes progress
- Fleets are exploring new route optimization technologies, convenient pick-up and drop-off points, new models like dark stores/urban fulfillment centers, innovative alternative delivery vehicles (like e-trikes, drones and electric trucks) and advanced vehicle safety programs.
- Co-located with Home Delivery World, City Freight Show 2019 will be the only event in the country that will gather 3,000 last mile, supply chain, fleet management and eCommerce executives from retailers, grocers, logistics providers, distributors and municipalities

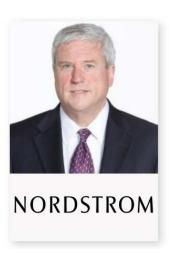




Nicholas Bertram
President
GIANT Food Stores



Tom Madrecki
Director, Urban Innovation and Policy
UPS



Loren Vandenberghe Director of Transportation Nordstrom



Diniece Peters
Director, Office of Freight
Mobility
New York City Department of
Transportation



Lee Spratt
CEO, Americas
DHL
eCommerce



Anne Strauss-Wieder
Director, Freight Planning
North Jersey Transportation Planning
Authority

Key Themes

- Curb space capacity
- Freight specific parking zones
- Modernized loading zones
- Energy efficient vehicles
- Innovative and sustainable technologies
- Congestion pricing
- Final 50 feet

- Last mile delivery
- Alternative delivery/transport times
- Freight planning
- Freight & carrier consolidation
- Transportation Management Systems
- Road infrastructure
- Cyclists and pedestrian safety



Our Partners

City planning/government

- New York City Economic Development Corporation
- New York City Department of Transportation
- United States Department of Transportation
- Volpe Center
- NYSERDA
- North Jersey Transportation Planning Authority
- New York Metropolitan Transportation Council
- SFMTA
- Metropolitan Area Planning Council
- New York City Bar Association
- LA Metro
- City of Seattle Department of Transportation
- City of Pittsburgh

Academics

- MIT
- NACFE
- Rocky Mountain Institute
- Urban Freight Lab
- Polytechnic Institute of New York University
- Rensselaer Polytechnic Institute

Notable media partners

- Supermarket News
- Supply Chain Dive
- Retail Dive
- Reverse Logistics Association
- Winsight Grocery Business
- The North American Council for Freight Efficiency
- Center City District
- Freightbook
- Freight Waves
- Field Technologies





Who Attends?

- 3PLs, couriers, freight carriers
- Retailers, manufacturers and grocers
- Distribution and warehouse professionals
- Government/city planners
- Fleets

- Property owners and managers
- Cold chain providers
- Food distributors & wholesalers
- Leasing companies
- Real estate



2020 Vision

Philadelphia

- June 1st 4th
- 120,000+ sq ft of exhibition space
 - Pharma/medical devices track
- Autonomous vehicle/drone track
 - C-store eCommerce
 - 5,000+ attendees

Amsterdam

- Spring 2020
- EU/Intra-Schengen country focus
 - Smart cities & alternative fuels
- Major themes of grocery eCommerce, heavy goods, city freight



Q&A

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