Transforming Tomorrow Today
Philly Tech Week I Greater Philadelphia Futures Group I 05.03.16
Today’s Meeting

• Kick-off The Futures Group 2.0
• Learn about Greater Philadelphia Future Forces
• Hear your technology vision for the future
• Make new connections
• Listen and learn
What is DVRPC?

- Federally-designated MPO for nine-county Philadelphia region in PA and NJ
- Created in 1965 to plan for “orderly growth and development”
- Transportation, land use, open space, housing and economic development
- Short, medium and long term transportation plans provide funding for projects
Region by the Numbers

Population = 5.7 million people
Employment = 3.0 million jobs
Governance = 351 municipalities
Daily traffic = 107 million VMT
Transit = 1 million trips / day
Coronation of a Pope

2005
Benedict

2013
Francis
The Most Important Transportation Innovation of the Decade Is the Smartphone

So why don't cities and transit agencies take more advantage of it?

ERIC GOLDWYN | @ericgoldwyn | Sep 4, 2014 | 34 Comments
The Digital Revolution?
Has the ideas machine broken down?

The idea that innovation and new technology have stopped driving growth is getting increasing attention. But it is not well founded.
DVRPC’s Long-Range Planning
Scenario Planning

Vision

Present

Baseline Trends

Plausible Futures

Future Forces

Possible Futures

Future

Wildcard
Futures Group Tasks

1. Brainstorm Future Forces of change
2. Vote on their impact and likelihood
3. Use Forces to create 4-5 highly differentiated What-If Scenarios
   a. Create robust visions of the future
   b. Analyze probable implications
4. Identify universal actions and contingent actions
5. Determine leading indicators for each Force
6. Create a short, graphic publication, and incorporate into Choices & Voices
Greater Philadelphia’s Future’s Group
Forces the Futures Group Identified

**Enduring Urbanism**
People and jobs moving to walkable communities is the start of a long-term trend.

**The Free Agent Economy**
Increased outsourcing and automation means individuals must create their own economic opportunities.

**Severe Climate**
Continued rise in atmospheric carbon levels lead to significant disruptions from climate change.

**Transportation On Demand**
Smartphones, apps, and real-time info help people get around using new and existing transportation modes.

**The U.S. Energy Boom**
An abundance of domestically produced oil and natural gas keeps the cost of energy low.
Background Forces

Partisan Paralysis
Intelligent Infrastructure (Internet of Things)
Connected Vehicles
Technology Enhanced Health / Chronic Health Conditions
Aging Population
Sharing Economy
Panama Canal Widening
Demand for Same-Day Delivery
Improving Freight Logistics
School Quality Driving Family Location
More Immigration
Declining Water Quality (Suburban)
Some Degree of Climate Change
Flat/Declining Transportation Funding
Worsening Infrastructure Conditions
“Prediction is hard, especially about the future.”

Danish Proverb
Models

Futures Group

NCHRP PROJECT 20-83
IMPACTS 2050: Dynamic Analysis of Socio-Demographic & Travel Scenarios

TravelWorks
Advanced Travel Analysis Tools

RapidPolicy
ASSESSMENT TOOL

#ptw2016 | #MakingConnections | @dvrpc
“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
Universal Actions

Build lifelong communities
Data-driven governance
Develop the impact economy
Enhance freight and goods movement
Expand broadband infrastructure
Green infrastructure and stream buffer ordinances
Increase regional transportation funding
Infrastructure resiliency
Immigrant-friendly policies
Megaregional collaboration and cooperation
Mixed-use infill development
Modern, multimodal transportation system
Universal pre-kindergarten and other k-12 programs
Vision Zero
What-if Scenarios

How will CLIMATE CHANGE impact our region?

How much will ENERGY cost in the future?

Will our CITIES AND TOWNS thrive?

How will I GET AROUND in 2045?

What will my JOB look like in 25 years?
What-If Scenario

Enduring Urbanism

Walkable Centers

Image: BLT Architects

© BLT Architects 2014
Blurring of City and Suburb
Contingent Actions

- (Re)Develop without displacement
- Living streets / protected bike lanes / pedestrian plazas
- Increase transit service
- Redevelop suburban office parks as mixed-use centers
- Protect industrial zones
Percentage of Residential Building Permits in Core Cities and Developed Communities


Leading Indicators

Annual Vehicle Miles Traveled and Transit Trips Per Capita

What-If Scenario

The Free Agent Economy

FOR HIRE

Careers → Jobs → Gigs
What-If Scenario

People Move About More Often
Universities Disrupted & Reimagined
Contingent Actions

- Expand business incubators / accelerators
- Simplify business tax collection, licensing, and permitting
- Zoning for shared / co-working office space
- More off-peak and intra-suburban transit service
- Build more middle-class housing

Source: PennConnects
Leading Indicators

Shared and Co-Working Office Space

- +200,000 Sq. Ft. Early 2016

Sources LEFT: Jones Lang LaSalle and Costar, 2000-2015.

Self-Employed Workers

- 2000: 0.13, 3.1%
- 2005: 0.13, 3.2%
- 2010: 0.13, 3.0%
- 2012: 0.13, 2.8%
- 2014: 0.13, 2.8%

- 2000: 4.18
- 2005: 4.14
- 2010: 4.42
- 2012: 4.48
- 2014: 4.54

#ptw2016 | #MakingConnections | @dvrpc
What-If Scenario

Rampant Climate Change Around the World

What-If Scenario

The Region’s Forecast: Hotter and Wetter Weather
What-If Scenario

Significant Disruptions

Photo: http://www.genebitsystems.com/david/vacation2006/PA2VT.htm
Contingent Actions

- Increase intergovernmental coordination
- More funding for infrastructure resiliency projects
- Improve emergency preparedness
- Preserve farmland and promote regional food production
- Invest in alternative energy & move to lower carbon electricity

Source: SEPTA
**Leading Indicators**

**Average Regional Temperature and Days over 90 Degrees Fahrenheit**

![Graph showing average regional temperature and days over 90 degrees Fahrenheit from 2000 to 2015.]

**Annual Regional Sea Level Change**

![Graph showing annual regional sea level change from 1901 to 2012.]

**Sources**
- **RIGHT**: National Ocean and Atmospheric Administration (NOAA) station 8545240, Philadelphia, PA [www.tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtm].
What-If Scenario

Mobility as a Service
What-If Scenario

Less Car Ownership, More Mobility
What-If Scenario

Internet of Things
Robotics & Artificial Intelligence
→ Autonomous Vehicles
Contingent Actions

- Invest in new multimodal hubs and universal payment cards
- Evacuation plans for carless households
- Incentivize P3s to speed up project delivery and incorporate new technology
- Legalize ride sourcing
- Improve work access for low-income individuals

Source: PennConnects
Leading Indicators

Regional Car Ownership per 1,000 Capita

Non-Single Occupant Vehicle Commute Mode Share

What-If Scenario

Increased Global Trade

THE U.S. ENERGY BOOM

dvrpc
What-If Scenario

Regional Growth Around Energy Hub
Increased Wages but Environmental and Health Concerns
Contingent Actions

- Market the region as an energy hub
- Consider safety, environmental, and health costs
- Continue to invest in alternative energy
- Use natural gas as an intermediate energy source
- Add capacity to Airport Rail Line

Source: Philly Magazine
Leading Indicators

Annual Natural Gas Exports from the Region

Volume (millions of kg) and Value (millions of dollars)

Regional Petrochemical Jobs

Key Takeaways

• The Future is increasingly uncertain.

• This process identified a set of Future Forces that may create new challenges and opportunities in Greater Philadelphia.

• There is much we can do to prepare for these forces
  – Universal Actions
  – Contingent Actions
More Understanding Needed

1. On-Demand Outsourcing vs. Automation
2. Abundant, Low-Cost Energy Future
3. Reconstruct, Modernize, and Make Infrastructure More Resilient Within Current Funding Constraint
4. Interplay Between the Forces
5. Recent Past no Longer a Useful Guide for the Future
Future Force vs. Vision
Discussion
Question 1

How does technology relate to the Future Forces?
Question 2

How can we use technology to improve quality of life in Greater Philadelphia?
Question 3

What is your vision for the tech community in Greater Philadelphia?
Question 4

What does the tech community need in order to grow and thrive in Greater Philadelphia?
DRAFT Futures Group Mission

1. Recognize the future is increasingly uncertain.

2. Help to understand and anticipate how and where change is occurring in Greater Philadelphia.

3. Identify actions to strategically position the region going forward.
Next Steps – Futures Group

1. Survey on general interest(s)

2. Topics for future meetings?
   a. Update Choices & Voices
   b. Sustainable Transportation
   c. Ride sourcing & urban design
   d. Big data
   e. New technologies (IoT, Autonomous Vehicles, etc.)

3. Working Group exercise
Other Ways to Stay Involved!

• Upcoming LRP Public meetings: Philadelphia on 5/24: dvrpc.ticketleap.com/connections-2045-phila/ More workshops this Fall/Winter
• Sign up for DVRPC’s newsletter and email lists
• Follow us on social media: @dvrpc
• Visit www.dvrpc.org/Connections2045 for updates on the Long-Range Planning process
• Review the draft LRP document in late Spring 2017
Thank You!

www.dvrpc.org/connections2045