

MEMORANDUM 5. DRAFT MEETING 3 SUMMARY

The final in-person meeting of the Greater Philadelphia Futures Group was held on Wednesday, December 10, 2014 from 3 pm to 5 pm in DVRPC's conference room. Meeting attendees included:

- Peter Angelides, Econsult Solutions, Inc.
- Christina Artl, DVRPC
- Saul Behar, University City Science Center
- Mary Bell, DVRPC
- Amy Bernknopf, DVRPC
- Mike Boyer, DVRPC
- David Cohen, Ben Franklin Technology Partners
- Ted Dahlburg, DVRPC
- Lauren Deutsch, University of Pennsylvania
- Patty Elkins, DVRPC
- Tim Evans, NJ Future
- Darryl Farber, Penn State University
- Nick Frontino, Economy League of Greater Philadelphia
- Brett Fusco, DVRPC
- Rob Graff, DVRPC
- John Haak, Philadelphia City Planning Commission
- Deborah Howe, Temple University
- Erik Johanson, SEPTA
- Christine Knapp, Philadelphia Water Department
- Greg Krykewycz, DVRPC
- Brad Lane, DVRPC
- Chris Linn, DVRPC
- Rich Lobron, Amtrak
- Jacki Mandly, Philadelphia Regional Port Authority
- Peter Meyer, The E.P. Systems Group, Inc.
- Karin Morris, DVRPC
- Chris Puchalsky, DVRPC
- Christina Rosan, Temple University
- Jim Saksa, Plan Philly
- Thomas Shaffer, Delaware County Planning Department
- Joe Sutor, Pennsylvania Turnpike Commission
- Christopher Swann, Select Greater Philadelphia
- Troy Truax, Michael Baker Jr. International
- Sarah Wu, Philadelphia Mayor's Office of Sustainability
- Asta Zelankauskaite, Drexel University

Meeting 3 featured break-out groups focused on each of the final five driving forces identified in the impact-likelihood online vote: Enduring Urbanism, The Free Agent Economy, The Pennsylvania Energy Boom, Real-Time Mobility, and When it Rains it Pours. The group discussions were based on the following questions:

- What are the potential outcomes of the driving force?
- What challenges and opportunities will arise in the region?
- What action steps can the region take to prepare for this driving force?
- Which types of transportation investments will be most important as a result of the force?

Details of the break-out group discussions follow. Potential action steps were identified by each group, and do not construe official DVRPC recommendations.

ENDURING URBANISM

Enduring urbanism as a driving force may modify various push and pull factors between urban areas and the suburbs, including: school quality, housing availability, and displacement of lower income populations. School quality has improved in urban areas to some extent, thanks to charter schools, home schooling, and neighborhood efforts to improve local schools. There will be a need for new types of housing—co-housing, shared housing, supportive housing, universal design, accessory dwelling units, and microapartments. Smaller cities and boroughs seem likely to regenerate themselves.

A number of land use challenges and opportunities will arise from this force. It could lead to declines in growing suburban and exurban areas. Suburban retrofits are a possible solution, though there is concern that this may not be a successful strategy. Another concern is the impact on areas with entrenched poverty. These are places that tend to have good transit access and other assets, but improving them seems

insurmountable. Industrial land will undergo pressures to turn residential, but this land is valuable to preserve for manufacturing jobs and freight distribution, waste management, among other uses. “New” neighbors to industrial developments often complain about noise, dust, and trucks. Residential buildings are seen as neighborhood amenities, whereas industrial isn’t. However, industrial land is necessary to compete in the global economy.

For transportation, this force portends more use of pedestrian, bike, and transit systems. However, this may mean increasing congestion, and wear and tear, on them. With higher population density, the region will need to find ways to overcome potential overcrowding or overuse issues. Deliveries and freight movement may also become more difficult in denser urban areas. Design (distribution centers) and operations (smaller trucks) are possible solutions, and there may be delivery efficiencies if more people are centralized.

Action Steps

- Protect industrial zones (see Portland, OR for case studies);
- Build lifelong communities where people can age in place throughout the region;
- Highlight density best practices and where they are;
- Update zoning and building codes to accommodate new housing types, especially for aging in place;
- Pursue development without displacement through more purposeful policies of inclusionary zoning and affordable housing;
- Encourage immigrant-friendly policies to ensure continued population growth and integration, including outreach to these communities (many immigrants are already accustomed to higher densities and transit);
- Incentivize development in centers, and de-incentivize development in non-centers;
- Create an urban growth boundary (literal or figurative—meaning no legal boundary but choose not to invest beyond a certain growth boundary); and,
- Look at telecommunications infrastructure bandwidth, which is important to urban areas.

THE FREE AGENT ECONOMY

The free-agent economy suggests that workers will be less tied to corporate jobs in the future, and individuals will need to be more entrepreneurial to be successful. Large companies will still be major players in the economy. However, efficiency gains will enable them to do so with fewer employees. Companies will contract out many needed tasks, suggesting more consulting and temporary work. It also suggests that individuals will move between jobs more often, with less commitment to one employer. Certain industries, such as professional services, will be more impacted by this force. An increase in regional entrepreneurial activity may result in the creation of more companies overall, though it is unclear what will be produced in this economy. This is a continuation of forces that have been ongoing for more than 20 years.

After graduating, students may stay near universities (there are more than 90 in our region), and these communities could become major new growth areas. With more instability, people will be looking for increased access to options, which you find in a dense city center, whether it is flexible work space or ride sharing. People are not going to choose a place to live primarily because it is near work. Rather, individuals may choose a place to live because it has better access, and will give them more flexibility if they’re not sure that they are going to stay at a specific job for a long time. Living near transit, or centers, allows for more access to jobs in the future. In the national context, the Greater Philadelphia region may become more appealing due to its proximity to many other cities.

Transportation, telecommunications, and social networks are going to be very important as a result of this driving force. Commuting patterns are already changing. SEPTA used to be primarily a system where people would commute into the city in the morning and back out in the evening. Now there is more off-peak ridership, as well as reverse commuting. Being in close proximity to where jobs are means trip length will

probably go down, but people may make more trips. This may mean more biking and/or walking for shorter trips, in addition to new opportunities for shuttle services in the retrofitted suburbs. The combination of increased entrepreneurialism, and alternative transportation needs, suggest that non-traditional transit options, such as Bridj in Boston, may arise in the region. Bridj supplies private bus routes in Boston based on gaps in the public system. Though it is more expensive than a public bus, but it fills gaps market demand. Telecommunications are as critical as transportation. It may be worth asking companies such as Verizon what they expect.

With fewer people working for large companies, more individuals may have less stable incomes. The megamansions in Chester County may become less appealing, while areas such as Northern Liberties, Colledgeville, West Chester, and Phoenixville may be booming with opportunity. These towns and neighborhoods fill the niche of the urban center outside the region's core. It's hard to get there from Philadelphia, but they are appealing areas that people like to live in. Consumption patterns may change as people travel more, and spend less on housing. Homeownership in the free agent economy may involve considerations about the confidence one has in the ability to keep landing jobs. Since employees are already being asked to shoulder a greater percentage of their long-term well-being through defined contribution plans, as opposed to defined benefit pension plans, retirement may not see a big change. Energy use may remain at the same level, but shift in terms of where it is used. Residential energy use may increase, while commercial use may decrease.

Philadelphia will continue to be vital to the economy, even as some of the exurban centers become more important. The city will play a big role in creating and fostering the things that are driving residential preferences. There will always be bigger agglomeration economies of people and opportunities in the city.

Action steps

- Decision-makers should recognize that this is a growing sector of the economy;
- Increase transit service during off-peak hours, along with intra-suburban service; and
- Facilitate entrepreneurship through tax policies.

THE PENNSYLVANIA ENERGY BOOM

The energy boom could reinvigorate older industrial areas of the region, help the nation achieve energy independence, create high-wage employment opportunities, and bring economic growth to the region. To make it happen, though, the region will need to make significant infrastructure investments. A key issue to watch for is the point at which it is cheaper to ship Bakken crude and Marcellus Shale gas to the region than importing Brent crude oil. The recent drop in oil prices reduces the economic competitiveness of both of these domestic fuel sources.

This force isn't predicted to have major transportation impacts for the average user. However, there could be household savings on home heating, which could increase disposable income. It is likely to worsen air quality, and there may be safety ramifications as gas pipelines and trains occasionally blow up. These risks should be included in any benefit-cost analysis.

One opportunity is to privatize PGW, create a public-private partnership, or allow it to become more creative with the use of natural gas. This will require changes to PGW's management structure allowing for more flexibility and quicker decision-making, and its ability to finance and invest in opportunities as they arise. There is also the possibility of marketing the region internationally as an energy hub, as companies may become interested in doing business here to take advantage of natural gas opportunities.

There are several challenges. First, the long-term framework of regional infrastructure investment needs must be weighed against the short-term volatility of fuel prices, and the instability of the Middle-East. In addition, the natural gas and Bakken crude industries are highly unregulated. At some point in the future

there will be regulations, which will increase the cost of these fuels. Given these uncertainties, it is not clear how this driving force will pan out.

Action Steps

- It is unclear whether investing in pipelines and other infrastructure makes economic sense. If they can make shale gas and Bakken crude more cost competitive with Brent oil, then the region should build them.

REAL-TIME MOBILITY

This driving force recognizes the effects of individuals who are always connected online through smartphones, and how this will change the way they use the region's transportation system. The reality is that this is not a singular, large driving force, but rather the combination of a bunch of bottom-up small networks. Only a proportion of the population will access these networks, and the individuals who do will tend to be younger, highly-skilled, and educated. These technologies will benefit urban areas the most, but will also offer improved service and more options to suburban and rural areas.

As individuals become more confident in being able to meet all their transportation needs without owning a car, vehicle ownership rates will decrease and reduce overall transportation costs. Smartphones are appealing to transit riders, because they can use them with their free time, instead of concentrating on driving. Real-time travel info, combined with better maps will also encourage ridership. The ability to get walking directions, and maps for better orientation, increases the comfort level of going to new or less familiar areas. With more options in how to get around, and lower transportation costs, there will likely be more travel overall.

Challenges include the growing complexity of the transportation network, and possibly fast-changing demand for how it is used. There is also the risk that the region's roads will be overrun with competing versions of ridesharing companies. Better real-time road information may mean more drivers are using local roads. There are questions about the equity issues of this force, if low-income individuals cannot afford the smartphones needed for real-time mobility. Increased transportation access may also raise home prices in well-served areas of the region.

Opportunities include collecting better travel demand data, and using it to inform decision-making and improve allocation of limited resources; and ridesharing vehicles could supplement their travel by making local deliveries (groceries, small packages, etc.), rather than logging empty road miles.

Action Steps

- Invest in a diversified transportation network, as well as traffic calming along local roads, to protect nonmotorized users, and disincentivize their use by through-traveling drivers.
- Allow the private sector to participate in infrastructure development through public-private partnerships, this should help to speed up project delivery and better respond to fast-changing technologies;
- Get neighborhood/community groups to work directly with ridesharing companies to identify particular needs; and
- Consider income-based transportation subsidies, so that low-income individuals can take advantage of new ridesharing opportunities, and increased access to jobs.

WHEN IT RAINS IT POURS

This force assumes that per capita emissions of greenhouse gases continue to rise around the world. A return to single-use greenfield development, occurring outside of areas currently served by transit and utility services, is a way the region's future per capita greenhouse gas emissions rate could increase.

Climate change is expected to have a series of side effects on the region, including: increased precipitation with more intense storm events and consequent flooding, rising temperatures with more variability, a greater number of days with temperatures over 90 degrees in the summer and more freeze-thaw cycles in the winter, and sea level rise. Measureable events, particularly the average rise in temperature and precipitation as well as sea level rise, can be used as leading indicators that climate change is affecting the Greater Philadelphia region.

Due to its location, Greater Philadelphia may be less affected by climate change effects, generating some opportunities. The region may become a more desirable place to live relative to areas that will be more affected. Thus, population in the region could increase as a result of climate change-driven immigration, both domestic and foreign. Greater Philadelphia is well-suited to receive this increase with its high capacity transit system and water systems. These systems were both planned and constructed for higher populations than currently exist in the region, particularly in the core metropolitan areas. Investment may be needed to improve these systems, and bring them up to modern standards of service. These investments are likely to be more feasible than adding entirely new capacity, and are also likely to increase the region's attractiveness.

The effects of climate change will lead to a variety of challenges in electricity and drinking water distribution, stormwater removal, and road and transit infrastructure. Long-term maintenance costs can be expected to increase, and choices will need to be made about what infrastructure to "harden" to withstand more frequent storm events. Sea-level rise may mean some areas of the region will become unusable, or usable only at very high cost.

Outside factors could impact how and where development occurs. Regulation of greenhouse gas emissions and putting a price on such emissions could favor infill, mixed use and more efficient development (though this driving force assumes this won't happen). Decreased prices for energy, due to the Marcellus Shale boom or other factors, will reduce incentives for development that efficiently uses energy.

Action Steps

- Forecasts should be made often and reflect the latest data available in order to drive well-informed decision making;
- Interagency and intergovernmental coordination should be increased as climate change affects multiple systems simultaneously across multiple jurisdictions. A recent coordination example is where the Philadelphia Water Department has consulted with SEPTA on projects to ensure stormwater is being handled to maximum benefit;
- More funding is needed to implement projects to reduce vulnerability of infrastructure to climate change effects; and
- Focus on mixed-use infill development with smaller homes, more attached homes, or multi-family development, occurring where transportation and utility capacity already exist to reduce the per capita emissions rate.

TRANSPORTATION INVESTMENTS

The final portion of the breakout group discussions considered which transportation investments they would make, and not make, as a result of the driving force. Each Futures Group member had five green dots to invest in 14 different project categories, and up to three red dots to signify they did not want to invest in. The project categories are:

- **Road and Bridge Preservation** — Additional maintenance funding, as current revenue projections will not achieve a state-of-good repair. Could also include climate resiliency projects, such as green streets.
- **Roadway Operational Improvements** — Including safety enhancements, traffic signal upgrades, weigh-in-motion stations, at-grade rail crossings, and Intelligent Transportation Systems (ITS) to provide real-time travel information.

- ❑ **New or Improved Arterial and Local Roads** — Particularly to make better connections between freight centers and existing highways, as well as better connections between residential and commercial development centers and existing highways
- ❑ **New or Improved Limited Access Highways** — New interchanges and highway widening to eliminate bottlenecks. Illustrative projects include US 1, I-95, US 30, US 422, and I-295 missing movements.
- ❑ **Transit System Preservation** — Additional maintenance funding, as current revenue projections will not achieve a state-of-good repair. Could also include climate resiliency projects.
- ❑ **Transit Operational Improvements** — Includes projects that would enhance transit safety, speed up existing service, and increase service frequency.
- ❑ **New or Expanded Regional Transit Lines** — New fixed-guideway and bus rapid transit (BRT) lines, and extensions of existing lines.
- ❑ **Improved Inter-Regional High-Speed Rail** — Incrementally improved service along the NE Corridor, to accommodate higher speed rail, and growing demand for freight rail use on these tracks.
- ❑ **Bike and Pedestrian Improvements** — Investments could include completing the Circuit regional trail network, new sidewalks, bike lanes, and intersection safety enhancements, pedestrian plazas, Complete Streets, and shared space/living streets.
- ❑ **Expansion at Philadelphia International Airport** — Investments would increase runway capacity, improve landside access (people-mover, and/or Amtrak), and expansion of air cargo facilities.
- ❑ **Freight Rail Facilities** — Investments to address state-of-good repair on Class I and short-line railroads such as the High-Line, 25th Street viaduct, and other facilities. May also fund double-stack clearance, such as on the Keystone Corridor, yard expansions, positive train control, and capacity improvement projects.
- ❑ **Sea Port Improvements** — This investment would be targeted to new and expanded marine terminals along the Delaware River, and to support marine highway initiatives to and from the region.
- ❑ **New Gas Pipelines** — Expansion of new pipeline facilities to accommodate Utica and Marcellus shale natural gas shipments, for local manufacturing and use, as well as to meet export demand.

The When it Rains it Pours discussion group identified green streets as another investment category. This option, and the group votes, has been incorporated into the Road and Bridge Preservation category.

There are two ways to view the results of this vote. The first is to identify robust investments, which are investments that are beneficial across all futures. Robust investments in this exercise include:

- ❑ Road and Bridge Preservation,
- ❑ Transit System Preservation,
- ❑ Transit Operational Improvements,
- ❑ New or Expanded Regional Transit Lines, and
- ❑ Improved Inter-regional High-speed Rail.

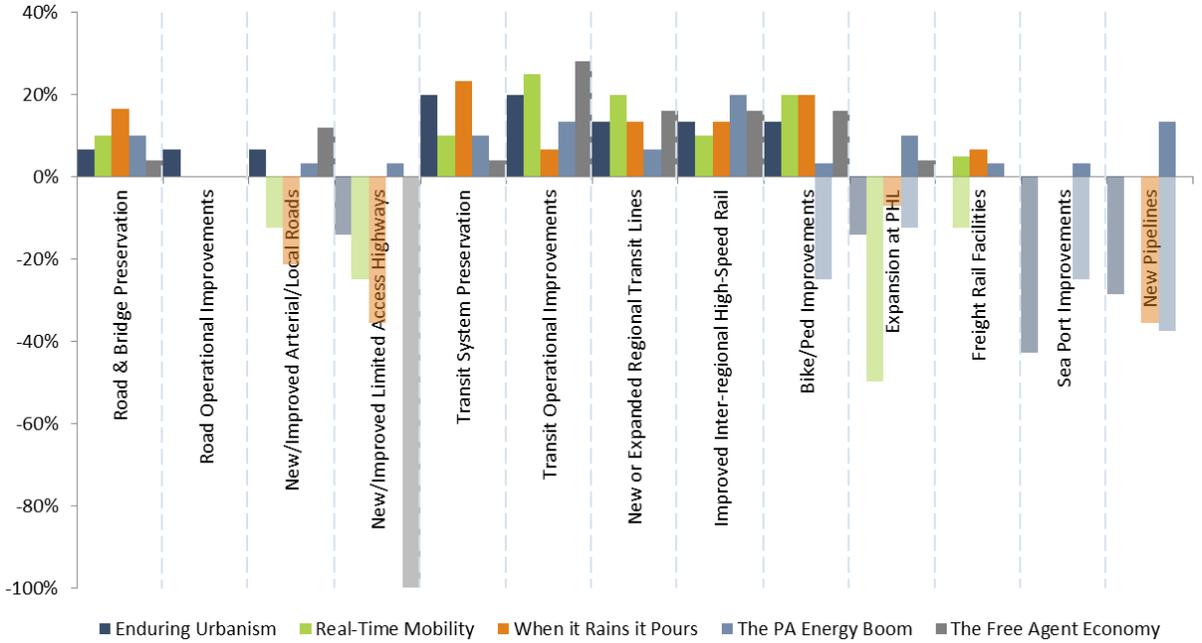
The second consideration is contingent investments, which are specific to each identified driving force. Leading indicators are used to identify which driving forces are occurring in the region, and are used to further guide contingent investment decisions.

Contingent Investments for Each Driving Force

Driving Force	Top Investment Priority	Lowest Investment Priority
Enduring Urbanism	(tie) Transit System Preservation, Transit Operational Improvements	Sea Port Improvements
The Free Agent Economy	Transit Operational Improvements	New/Improved Limited Access Highways
The Pennsylvania Energy Boom	Improved Inter-regional High-Speed Rail	New Pipelines
Real-Time Mobility	Transit Operational Improvements	Expansion at PHL
When it Rains it Pours	Bike/Ped Improvements	(tie) New/Improved Limited Access Highways, New Pipelines

Source: DVRPC, 2014.

Transportation Investment Vote



Source: DVRPC, 2014.