

MEMORANDUM 3. MEETING 2 SUMMARY

The second meeting of the Greater Philadelphia Futures Group was held at DVRPC's offices on October 15, 2014. The meeting began with a brief background on the effort, and a presentation of the 31 driving forces identified during the first Futures Group meeting on September 17, 2014. The discussion then centered around three questions: what driving forces are we still missing, which of the 31 driving forces could be removed from consideration, and which could be combined into a larger driving force.

ATTENDENCE

Many thanks to those who lent their expertise and time at the second Futures Group meeting:

- Manny Anastasiadis, Pennsylvania Department of Transportation
- Peter Angelides, Econsult Solutions
- Christina Arlt, DVRPC
- Saul Behar, University City Science Center
- Mary Bell, DVRPC
- Mike Boyer, DVRPC
- David Cohen, Ben Franklin Technology Partners of Southeastern Pennsylvania
- Eileen Divringi, Federal Reserve Bank of Philadelphia
- Tim Evans, NJ Future
- Darryl Farber, Penn State University
- Brett Fusco, DVRPC
- Rob Graff, DVRPC
- Erick Guerra, University of Pennsylvania
- Faith Haeussler, Philadelphia Corporation for Aging
- Lee Huang, Econsult Solutions
- Mark Alan Hughes, University of Pennsylvania
- Christine Knapp, Philadelphia Water Department
- Greg Krykewycz, DVRPC
- Rich Lobron, Amtrak
- Jacki Mandly, Philadelphia Regional Port Authority
- Peter Meyer, Public Participation Task Force
- Nando Micale, Wallace, Roberts, and Todd
- Karin Morris, DVRPC
- Ed Reagle, AECOM
- Christina Rosan, Temple University
- Jim Saksa, Young Involved Philly
- Tony Spagnoli, PEC
- Mark Stout, MLS Consulting
- Christopher Swann, Select Greater Philadelphia
- Amanda Wagner, Philadelphia Department of Public Health
- Mike Weilbacher, The Schuylkill Center for Environmental Education
- Steve Wray, Economy League of Greater Philadelphia
- Asta Zelenkauskaitė, Drexel University

NEXT STEPS

This memorandum details the future driving forces of change identified during the first two meetings of the Futures Group. Please use the information presented here to guide your voting on which forces you think are most likely to happen over the next 30 years, and which ones are going to have the greatest impact on the region over that period. You can vote at www.dvrpc.org/Connections2040/futuresgroup/survey/ through **Monday, December 1st**, using your e-mail address as the password. Each e-mail address will be able to vote only one time.

The third Futures Group meeting will be held on **Wednesday, December 10, 2014 at 3 pm** at DVRPC's offices. This meeting will feature break-out group discussions focused on the set of most significant driving forces in terms of likelihood and impact, to be determined by the online vote. This meeting will more fully develop the prioritized driving forces, and the opportunities and challenges they present to the region.

DRIVING FORCES

Driving forces will accelerate or reverse current trends, or create new ones that significantly impact demographics, development patterns, use of the regional transportation system, the economy, and/or the environment in Greater Philadelphia. The 31 initial driving forces identified at the first Futures Group meeting have been revised down to 17 based on the discussion at the second meeting. Many of the initial drivers have been reconceived as outcomes of other forces. This list is classified by long-range plan categories: demographics, economy, environment, government, and transportation. The classification is based on where the driving force best fits, but these forces will nearly always overlap and impact multiple different categories. Some 'potential outcomes' are identified based on the discussion so far, but they are not comprehensive. Background forces that are expected to continue under current trends, unless a driving force counteracts them, are listed at the end of this memorandum.

DEMOGRAPHICS

1. Enduring Urbanism

Urban locational preferences of millennials and empty nesters are just the start of a long-term trend, as future generations show an even stronger desire for city living and alternative transportation.

Potential Outcomes: More young singles and empty nesters live in the region's centers, increasing the tax base for schools and infrastructure investment, developing new and revitalizing existing homes, neighborhoods and businesses. U.S. PIRG's *A New Direction* estimates that if future generations show even more extreme multimodal transportation preferences than the millennials, total VMT in the U.S. in 2040 could be 19 percent lower than current forecasts, further reducing demand for fossil fuels, road maintenance needs, and new roadways, while lowering gas tax revenue. Inequality may worsen as demand for space in central cities pushes poverty to the suburbs, creating new challenges for transportation, job access, and provision of much needed services. There may be increased demand for micro-apartments and other types of small dwelling units, especially if they are well located. Smaller living units and the millennials non-materialistic impulses leads to growth in the shared economy. Current trends may be the outcome of the recession, as millennials are struggling with student loan debt and unemployment during their formative years. They may be on a path where they become the first generation with a lower standard of living than their parents. If this happens, the region may have lower incomes, rates of homeownership, transportation trips per capita, and fewer children born. Alternatively, once the economy recovers, young people may return to the more suburban lifestyle patterns of previous generations.

There will be increasing vacancies in the region's suburban office parks, if they aren't retrofitted into mixed-use centers. The demise of regional banks, and the current unwillingness of large, multinational banks to finance greenfields projects, even mixed-use suburban retrofits, may be a significant hindrance to suburban (re)development.

2. New Cures for All that Ails

Technology has advanced medicine into new frontiers. 3-D printers can make prosthetic, or even replacement body parts; gene therapy, digital biology, and altering of genetic materials lead to improved treatments for many medical problems such as AIDS, Parkinson's, ALS, cancer, heart disease, and other chronic conditions.

Potential Outcomes: This force may significantly impact the region's economy, as it is highly dependent on healthcare. People may live longer with more active lifespans, and there would be a reversal of the current trend of increasing chronic conditions. Recognition that development must be built to support more active transportation modes, may increase demand for these communities. The workforce trends even older, because better health allows people to continue working later in life. Healthcare improvements may not be equitably distributed within the regional population.

ECONOMY

3. Automation Nation

3-D printing, robotics, and other emerging labor-saving technologies flatten global manufacturing costs.

Potential Outcomes: Manufacturing becomes more local in order to reduce shipping costs. This could yield substantial changes to goods movement, with more shipping of raw materials between regions and finished goods within regions. The employment rate may be lower, or higher-paying jobs may be replaced with lower-paying ones, as technology and efficiency reduce demand for labor. One response may be a move to a three- or four-day work week to better align labor demand with its supply. This would impact the ability to efficiently deliver transit services, leading to lower ridership, and making service improvements harder to justify. Incomes may continue to decline for the middle and lower classes, and those that depend on labor to earn a living, thereby increasing inequality. Lower incomes lead to a growth in the shared economy, as individuals try to maximize efficiency.

4. The Free Agent Economy

Individuals must increasingly create their own economic opportunities, as increases in labor efficiency, and an escalating cost of full time employees cause large companies to significantly reduce their workforces.

Potential Outcomes: This would increase temporary and freelancing jobs, business start-ups, and the shared economy; which grows as individuals and new companies earn income by renting assets such as houses/apartments, tools and equipment, or vehicles. The region's office space will need to be redesigned to meet future economic needs. Reduced office space needs, open floor plans, access to alternative transportation, and smaller, more flexible workspaces become the new requirements for the 21st century economy. Inequality may worsen for those who do not have access to capital resources or entrepreneurial capabilities.

5. Keeping up with the Jones

The growing global middle class increases demand for finite supplies of energy and raw materials, leading to rapidly rising prices for them.

Potential Outcomes: There may be an increase in the negative environmental impacts associated with raw material and energy extraction, refinement, transportation, and consumption. This potentially accelerates climate change and reduces biodiversity. However, it may provide new markets for regional goods and services. Inequality may worsen for those on the bottom of the economic ladder, who cannot keep up with rising costs. Higher costs for goods is likely to lead to growth in the shared economy, as owners try to recapture purchase costs, and renters try to avoid them.

6. Netvolution

Virtual reality, the internet, and communications technologies disrupt current practices in education, medicine and business as people become untethered from geographic location.

Potential Outcomes: There may be reduced need for offices and schools, and physical transportation. There may be significant impacts to the region's economy, which is highly reliant on eds and meds. It is unclear whether people and jobs would choose to locate in or move away from Greater Philadelphia, and which areas of the region would become more preferable for locational purposes.

Social networks may be amplified, which would allow ideas to flow faster, and enhance collaboration across sectors. Education would move online, and reduce the place-based draw of regional colleges and universities. Community colleges and some liberal arts colleges could reposition themselves as technical training schools, and help to keep the region's workforce competitive in the global economy. Telemedicine would reduce the need to visit doctor's offices and hospitals, allowing the elderly and other patients to stay home for most basic treatment and care. Telecommuting may become more common as one's job becomes more disconnected from where one chooses to live.

An increasing technological divide may worsen inequality between the haves (with technology) and the have nots (who cannot access it). The internet continues to lower transaction costs, and social networks build trust between owners and renters, enhancing the shared economy. However, the fact that everything can be hacked, potentially reduces trust, privacy, and online security.

7. The Pennsylvania Energy Boom

Pennsylvania's economy grows with natural gas production, and especially benefits from removing restrictions on petroleum exports. An abundance of domestically produced energy keeps the cost of energy low.

Potential Outcomes: Energy costs decline due to plentiful supply, and the region's population and employment grows thanks to the new energy economy. There may be the opportunity to increase manufacturing in the region due to lower energy costs. There may be increased need for regional distribution facilities, and increased strain on the region's congested and aging infrastructure. Focus on natural gas as an energy source may slow the development and adaption of clean, sustainable energy technologies; and possibly lead more spread out land use patterns, due to lower energy costs. Increased externalities and climate change impacts due to continued reliance on fossil fuels, including risks to biodiversity. Personal safety risks for individuals living near rail lines carrying oil tank cars and pipelines.

ENVIRONMENT

8. Confronting Climate Change

Pressure from urban areas, major corporations, and the Intergovernmental Panel on Climate Change (IPCC) grows the political will to significantly reduce carbon emissions through regulation and changing consumer preferences.

Potential Outcomes: World leaders come to a joint resolution, with teeth, that permits options such as carbon or congestion pricing, vehicle restrictions (such as near universal traffic calming), enforcement of better land use decisions, alternative transportation, environmental technologies, and cost competitive clean energy sources to become viable ways to reduce greenhouse gas emissions to sustainable levels. This strengthens the green economy, and potentially weakens the Pennsylvania Energy Boom. Desire to reduce material use and be more environmentally friendly encourages growth in the shared economy.

9. When it Rains it Pours

Ever increasing greenhouse gas emissions lead to the worst-case outcomes of climate change.

Potential Outcomes: The region must prepare for: hotter and wetter weather, more frequent storms, and rising sea levels. Worldwide water scarcity is worsened by increasing pressure on limited clean water resources, though this may be a competitive advantage for Greater Philadelphia. Global food insecurity increases the importance of regional and local food systems, and the ability of regions to feed themselves. The region may begin to see its first climate refugees by 2045, with increasing numbers beyond the next plan horizon.

GOVERNMENT

10. Partisan Paralysis

Partisan politics and fiscal austerity hamper governmental effectiveness at all levels. Increasing personal, business, and government debt levels limits willingness to fund major new investments, public or private.

Potential Outcomes: Economic growth will be slow to nonexistent. Pension crises erupt, safety nets are weakened, and many individuals will be left in economic conditions they were never prepared for. Meanwhile, no progress is made in reducing existing inequalities. Development will be uncoordinated, with little linkage between land use and transportation, and low investment in alternative modes. Deteriorating infrastructure and lack of funding may lead to increased privatization. Negative economic impacts are felt as key industries move to states and countries with more reliable infrastructure. Individuals will increasingly turn to the shared economy for lower cost goods and services. The ability to effectively respond to terrorism, pandemics, and environmental disasters may be hindered,

and the region becomes increasingly vulnerable to failures of complex systems. Changing demographics (millennials or immigrants) may help to break gridlock or keep it from occurring in the first place.

11. Sabergovernmetrics

Use of big data and better decision-making helps all levels of government become smarter and more efficient.

Potential Outcomes: Federal and state support enhances regional cooperation, municipal consolidation, shared services, and planning regulations to permit more compact development. Governments use new efficiencies to find ways to make strategic investments in infrastructure, education, and other core governmental services. Performance measures, big data, and additional funding have led to improvements in pre-K to 12 education in both urban and suburban schools. With more options for where families live, more of them stay or move into the region's centers. Green infrastructure introduces much needed nature to urban areas, lowers infrastructure costs, and helps to mitigate climate change. Public-private partnerships are increasingly used to solve problems. Entrepreneurial non-profits emerge to fill other gaps. Smart government has helped to convince a majority of citizens that raising taxes will lead to beneficial expenditures; or, alternatively, the federal government uses inflation as the only limiting factor on public spending (post-Keynesianism, or modern-market theory).

TRANSPORTATION

12. Intelligent Infrastructure

There are rapid advances in infrastructure technology, through 3-D printing, low-cost sensor technologies, road-embedded information technology and energy collection and distribution, nanotechnology, and stronger composite construction materials. The next generation of smart grids, micro grids, and distributed energy generation helps to make energy delivery more efficient.

Potential Outcomes: Infrastructure lifespan is increased, while lifecycle costs are reduced, along with the number of workers needed for maintenance. Information technology and energy harvesting technologies may create new revenue streams for DOTs, or make facilities more appealing to the private market. Energy costs decrease.

13. Megaregional Mobility

Improved service and speeds on the Northeast Corridor improves access between major cities and airports in the megaregion.

Potential Outcomes: Demand may be reduced for intra-megaregion air travel, freeing airspace for more international and long-distance flights at PHL. However, reduced travel demand may convince the merged US Airways/American Airlines to eliminate PHL as a regional hub. The 'megaregion' may become the new basic unit of competition in the global economy and change the role/need for existing regional civic organizations. Development demand near future high-speed rail station could increase (either 30th Street or Jefferson).

14. Putting the Ship Back in Shipping

As ever-larger ships (which Greater Philadelphia cannot currently serve) significantly reduce shipping costs relative to truck and rail, water-based transportation becomes the mode of choice for goods movement.

Potential Outcomes: Coastal areas with the ability to bring the largest ships to port gain a competitive advantage in the global economy. A future repeal of the Jones Act may increase short sea shipping along the East Coast, and lead to more trade between its regions, particularly for shallower ports. This would decrease truck trips along north-south corridors in the region, while potentially increasing multimodal (truck, rail) movements along east-west corridors. Improvements at intermodal connections are critical to maintaining regional economic competitiveness.

15. Real-Time Mobility

Smart phones, big data, and apps help transportation system users seamlessly navigate a multimodal network of car sharing, taxi, ride sharing, transit, biking and bike sharing (including e-bikes and other small electric vehicles), and walking to get around.

Potential Outcomes: The ability to use smart phones while using transit and ride sharing services leads to increased demand for these two modes. As car ownership rates decline, there is also demand for more, and improved walking and biking infrastructure in the region. More active transportation helps to reduce the incidence of chronic health conditions in the region. Emerging entities, such as Las Vegas 100 and Bridj, become the models for transportation service.

16. Robocars

Self-driving cars, trucks, and buses will take over the region's roads. Thanks to their road safety and capacity enhancements, they constitute around half the region's vehicle fleet by 2045.

Potential Outcomes: Autonomous vehicles are able to overcome cost, legal, liability, and regulatory hurdles in an astonishingly short amount of time. The Eno Center's *Preparing a Nation for Autonomous Vehicles* predicts a 50 percent autonomous vehicle fleet would increase road capacity by 21 percent (helping to reduce congestion), decrease road fatalities by 30 percent, and shrink the total number of vehicles on the road by 24 percent, with fuel savings of 18 percent, despite 7.5 percent higher VMT. This technology would revolutionize trucking and transit (through self-driving buses), and improve mobility for the region's aging population.

17. Sharing a Lyft

Convenient ride sharing services, such as Uber, Lyft, and Sidecar, grow in popularity and capture a substantial portion of the trips taken in the region.

Potential Outcomes: Once they overcome regulatory hurdles, the success of these services leads to a lower car ownership rate in the region. However, vehicle miles traveled (VMT) may increase as ride sharing also poaches from taxi, transit, biking, and walking trips; and generates additional trips. Taxis will become less common. Inequality issues arise as ride sharing drivers may have lower incomes than taxi drivers, and may be less responsive to low income communities. Ride sharing drivers may use the mobility internet to help efficiently move goods, rather than log empty miles.

BACKGROUND FORCES

Background forces are based on ongoing trends that are likely to have minor impacts on the future. These are usually incorporated as assumptions throughout scenarios, rather than forces that lead to differences within them. Unless a driving force specifically counteracts these trends, they are assumed to continue to occur in the future. Background forces identified in this effort include:

- **Connected vehicles** will substantially increase road safety and improve the flow of people and goods.
- **Chronic health conditions** continue to increase, which harms the workforce's competitiveness and potentially shortens lifespans.
- **Aging population** leads to challenges, as most boomers prefer to age-in-place where they have roots, but in areas that are poorly equipped to accommodate people with mobility impairments.
- **Demand for same-day delivery** will increase. This will require more overnight deliveries, and strategically located consolidation centers (where multiple shippers bring goods into an area, and a single truck delivers them). Autonomous vehicles, ride sharing services, or delivery drones may also help fulfill the demand.
- **Improving freight logistics** with more efficiency on the one hand; but also more redundancy, which can increase costs. The mobility internet will coordinate between smart infrastructure and connected vehicles to improve the real-time flow of people and goods.
- **Urban school quality** will continue to drive family locational decisions for those who can afford preferred school districts.
- **Immigration** continues to increase, leading to larger population and workforce.
- **Water quality** will continue to degrade due to runoff, and lack of stream buffer regulations.
- **Panama Canal widening** means an uptick in goods moving through the region.
- Some degree of **climate change** is already baked in, with minor impacts to the economy as temperatures begin to rise, storms increase in frequency, and there is more rainfall.

MEMORANDUM 3 SUPPLEMENT. WHAT HAPPENED TO?

The first meeting of the Greater Philadelphia Futures Group identified 31 distinct driving forces. The second meeting continued the discussion on driving forces in terms of what driving forces are we still missing, which of the 31 driving forces could be removed from consideration, and which could be combined into a larger driving force. Some key ideas identified in the meeting included, a clearer separation between the real driving forces, and the outcomes of driving forces (some of which were included in the original 31 driving forces list). A second key concept was to look at what is essentially unpredictable (something not worth focusing on), what do you know is going to happen (background forces), and what do think could happen (potentially structuring forces or wildcards).

The following details how driving forces from the initial list (in Memorandum 2) have been reclassified and incorporated into the revised list.

1. Golden Years

Lifespans get significantly longer, thanks in part to cures for cancer and other diseases. People are able to live more active lifestyles much later in life. But many urban development patterns and housing units do not accommodate people with mobility impairments.

- ▶ Now outcome of 'New Cures for All that Ails.'

2. Emergency!

Greater Philadelphia's role as a major economic center is tested by the challenge of responding to increasing numbers of major crises, such as acts of terrorism, pandemics, major weather events, etc.

- ▶ Unpredictable. Potentially worse outcomes under 'Partisan Paralysis.'

4. Is there a Doctor in the House?

Chronic health conditions such as diabetes, obesity, heart disease, stroke, cancer, and arthritis hamper the region's workforce, shorten lifespans, and increase the demand for, and cost of, healthcare.

- ▶ This is in-line with the status quo. Driving forces bend the current trends.

5. Lessennial Generation

High levels of student loan debt and unemployment during the millennial generation's formative years, starts them on a path where they become the first generation with a lower standard of living than their parents.

- ▶ Combined with 'Enduring Urbanism.'

6. Magnet Education

Use of performance measures, big data, and additional funding have led to improvements in pre-K and K-12 education in urban schools, helping to retain, and even attract families into the region's core.

- ▶ Combined with 'Sabergovernmetrics.'

7. Priced out of the City

As poverty shifts to the suburbs, U.S. cities begin to resemble European Cities with the wealthy largely residing in the region's core, and poor and minority communities, and the middle class to a lesser extent, located further out.

- ▶ Outcome of 'Enduring Urbanism.'

8. TGITH (Thank God it's Thursday)

The work week is shortened to just three or four days, as demand for labor shrinks relative to demand.

- ▶ Potential outcome of 'Automation Nation.'

13. It's a Small World

Internet and communications technologies create wider social networks, allow ideas to flow faster, and more collaboration across sectors. Telecommuting becomes more common and one's job becomes more disconnected from where one chooses to live.

- ▶ Combined with 'Netvolution.'

15. Haves and Have Nots

Income inequality is worsened due to reasons such as: declining union power, reduced buying power of the minimum wage, and growing technological divide.

- ▶ Combined with 'Enduring Urbanism', 'Automation Nation', 'The Free Agent Economy', 'Keeping up with the Jones', and 'Netvolution'.

16. Instantaneous Delivery

Demand grows for same-day delivery. More overnight deliveries in thriving downtown areas, and strategically located consolidation centers (where multiple shippers bring goods into an area, and a single truck delivers them). Ride sharing services and delivery drones may also help to serve this market.

- ▶ Combined with 'Netvolution.'

19. No College Left Behind

Delivery of education moves online, reducing the place based draw of regional colleges and universities. Some liberal arts colleges reposition themselves as technical training schools, helping to keep the region's workforce competitive in a fast changing global economy.

- ▶ Combined with 'Netvolution.'

20. Off the Beaten Path

After merging with US Airways, American Airlines pulls out of Philadelphia as a hub. Funding constraints mean Amtrak is unable to make substantial improvements to the NE corridor.

- ▶ Potential outcome of 'Megaregional Mobility.'

23. Take Two Aspirin and Skype Me in the Morning

Virtual reality and web-based communications reduce the need to visit doctor's offices and hospitals, allowing the elderly and other patients to stay home for most basic treatment and care. 3-D printers can print prosthetic or even replacement body parts, changing how healthcare is performed.

- ▶ Combined with 'Netvolution.'

25. The Parched Landscape

Worldwide water scarcity is worsened by increasing pressure on limited clean water resources.

- ▶ Potential outcome of 'When it Rains it Pours.'

26. PhilAmsterdam

Demand for regional bikability rises. E-bikes and other small electric vehicles, and the bicycle become a significant portion of trip modeshare.

- ▶ Combined with 'Bike Lanes, Trains, and Automobiles.'

27. What's for Dinner?

Global food insecurity increases importance of regional and local food systems, and the ability of regions to feed themselves.

- ▶ Potential outcome of 'When it Rains it Pours.'

29. The New New Deal

Substantial new governmental investment in infrastructure, education, and other core governmental services is achieved either by: governments raising taxes at all levels, or the federal government using inflation as the only limiting factor on public spending (post Keynesianism, or modern market theory).

- ▶ Potential outcome of 'Sabergovernmetrics.' Basically government must show it can be smarter with expenditures before it is able to generate more revenue.

FUTURES GROUP RECOMMENDATIONS

Discussion during the meeting identified a few driving forces the Futures Group members felt could be dropped or combined. Those that could be dropped included:

- 6. Magnet Education
- 8. TGITH
- 11. Sharing a Lyft
- 17. Keeping up with the Jones
- 19. No College Left Behind
- 25. The Parched Landscape
- 26. PhilAmsterdam
- 27. What's for Dinner?

Those that could be combined included:

- 9, 10, 15, 16, 21, 31
- 10, 26, 28
- 3, 5, 7, 15
- 5, 8, 9, 13, 15
- Resiliency, or lack of: 2, 12, 18, 24, 25, 28
- Who is able to live where: 5, 7, 15, 18
- Production relative to consumption: 9, 13, 17, 22
- Transportation Multimodality: 11, 12, 13, 14, 18
- 1 vote for the NETvolution
- Flexible Work: 5, 8, 9, 13, 15
- 17, 27, 30
- 18, 24, 25, 28

One argument was made against combining the '24. Confronting Climate Change' and '28. When it Rains it Pours' forces. The following table indicates the frequency with which different driving forces were recommended to be combined. Those which were recommended for removal, or recommended for being combined multiple times became a primary focus of the revision.

Frequency of Combination Recommendations Between Driving Forces

	2	3	5	7	8	9	10	11	12	13	14	15	16	17	18	19	21	22	23	24	25	26	27	28	30	31
2	-	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0
3		-	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5			-	2	2	2	0	0	0	2	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0
7				-	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
8					-	2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9						-	0	0	0	2	0	3	1	1	0	0	1	1	0	0	0	0	0	0	0	1
10							-	0	0	1	0	1	1	0	0	1	1	0	1	0	0	1	0	1	0	1
11								-	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
12									-	1	1	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0
13										-	1	2	0	0	1	1	0	0	1	0	0	0	0	0	0	0
14											-	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
15												-	1	0	1	0	1	0	0	0	0	0	0	0	0	1
16													-	0	0	0	1	0	0	0	0	0	0	0	0	1
17														-	0	0	0	1	0	0	0	0	1	0	1	0
18															-	0	0	0	0	2	2	0	0	2	0	0
19																-	0	0	1	0	0	0	0	0	0	0
21																	-	0	0	0	0	0	0	0	0	1
22																		-	0	0	0	0	0	0	0	0
23																			-	0	0	0	0	0	0	0
24																				-	2	0	0	2	0	0
25																					-	0	0	2	0	0
26																						-	0	1	0	0
27																							-	0	1	0
28																								-	0	0
30																									-	0
31																										-

Driving Forces

1. Golden Years
2. Emergency!
3. Enduring Urbanism
4. Is there a Doctor in the House?
5. Lessennial Generation
6. Magnet Education
7. Priced out of the City
8. TGITH (Thank God it's Thursday)
9. Automation Nation
10. Bike Lanes, Trains, and Automobiles
11. Sharing a Lyft
12. Intelligent Infrastructure
13. It's a Small World
14. Robocars
15. Haves and Have Nots
16. Instantaneous Delivery

17. Keeping up with the Jones
18. Megaregional Mobility
19. No College Left Behind
20. Off the Beaten Path
21. The Pennsylvania Energy Boom
22. Putting the Ship Back in Shipping
23. Take Two Aspirin and Skype Me in the Morning
24. Confronting Climate Change
25. The Parched Landscape
26. PhilAmsterdam
27. What's for Dinner?
28. When it Rains it Pours
29. The New New Deal
30. Partisan Paralysis
31. Sabergovernmetrics