

# HUDSON VALLEY INFRASTRUCTURE: *IS IT SAFE? IS IT FAIR? IS IT INFORMED?*



**RAIL SAFETY IN THE HUDSON VALLEY**

**EQUITABLE DISTRIBUTION OF TRANSPORTATION INVESTMENTS**

**WATER AND WASTEWATER: WHERE'S THE CAPACITY?**

***MAY 2015***

HUDSON VALLEY **PATTERN** *for* **PROGRESS**

## SNAPSHOT ON HUDSON VALLEY INFRASTRUCTURE

Infrastructure issues in the Hudson Valley are complex in both scope and geography. Because of this, Pattern for Progress has taken the approach of highlighting a few critical and timely issues based on information gathered and analysis conducted since our May 2014 report, "Infrastructure Planning and Investment: The Widening Gap" to keep infrastructure issues on the "front burner."

This report touches on three main areas of interest: rail safety, fair share allocation of state transportation resources and capacity of regional water and sewer systems to handle development. The work in these areas provides support for policy changes recommended throughout.

### RAIL SAFETY IN THE HUDSON VALLEY: CROSSING THE LINE

No discussion of public infrastructure in the Hudson Valley is complete without discussion of rail safety issues. The Hudson Valley has both passenger rail and freight lines. Metro-North operates commuter rail on three routes east of the Hudson River: the Hudson Line, the Harlem Line, and the New Haven Line. Amtrak operates intercity train service on the Hudson and Harlem lines. Metro-North also operates two commuter rail routes on the west side of the Hudson River: the Pascack Valley Line and the Port Jervis Line. MetroNorth carries over 83 million passengers annually (about 285,000 per weekday) on nearly 800 miles of track. CSX is the primary freight line operator in the Hudson Valley.

Major accidents and severe weather damage on the passenger lines have brought rail safety issues to the fore. The Hudson Valley has seen 14 fatalities associated with rail accidents in the last two years including worker and pedestrian accidents, a major derailment and a car train collision. MTA has obtained a \$1 billion federal loan that will assist in implementing positive train control on Metro-North, but throughout the region the question remains whether crossings can be improved to minimize risk. Passenger rail service on the Port Jervis line took major damage after Hurricane Irene, but was restored sooner than expected after \$40 million was spent to repair catastrophic damage. Both passenger and freight rail lines run adjacent to the Hudson River raising concerns about future flood risk and climate change impacts.

## RECOMMENDATIONS

### Rail Safety

The data show that crude oil transport by rail has increased tenfold while oversight of track and bridge maintenance is limited.

- Allocate funding for rail infrastructure inspection through NYSDOT
- Enhance safety standards for crude oil train transport through positive train control, speed limits, tanker requirements and disaster response planning

### State Transportation Funding

The allocation of funding to New York Department of Transportation Region 8 appears to fall short of fair allocation by \$143 million over a two year period.

- Make state resource allocation visible and public through better data
- Adopt state transportation funding allocation models that create transparency and equity
- Prioritize infrastructure investments through revenue sources such as pegging the federal gas tax to inflation to support the Highway Trust Fund

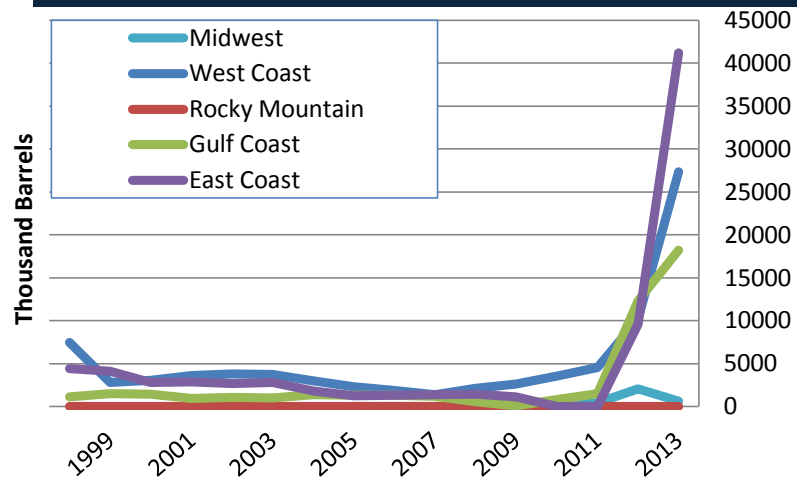
### Water and Wastewater Investments

The Hudson Valley can expect to see an increased demand for its water resources and, on the flipside, wastewater treatment capacity. Knowledge of these resources and how we plan to protect them should be on every municipality's mind.

- Concentrate development where water and wastewater infrastructure has capacity
- Tie infrastructure funding to required capital plans for local governments

The safety of freight rail has also captured public attention in recent months. Crude oil train derailments in other parts of the United States and Canada underscore the risks associated with freight train transportation. Residents of the Hudson Valley could not help but to notice that the CSX freight line running on the west side of the Hudson River has seen an increase in crude oil transport. Those observations are confirmed by the data on rail crude oil transport, with annual crude oil transported by rail on the east coast increasing 10 fold between 1999 and 2013.

### Annual Crude Oil Refinery Receipts by Rail Tank Cars



Source: U.S. Energy Information Administration. Retrieved March 27, 2015, from [http://www.eia.gov/dnav/pet/PET\\_PNP\\_CAPREC\\_A\\_\(NA\)\\_8RCO\\_MBBL\\_A.htm](http://www.eia.gov/dnav/pet/PET_PNP_CAPREC_A_(NA)_8RCO_MBBL_A.htm).

Between 15 and 30 trains of at least 1 million gallons of North Dakota Bakken crude oil each pass through the Hudson Valley weekly.<sup>1</sup> Greater crude rail shipments have resulted in increased rail crude oil spills both in number of incidents and volume of crude spilled.<sup>2</sup> The Congressional Research Service calls for additional safety standards for rail crude oil transport including: changes to tank car design, preventing derailments by addressing track defects through better inspection, changes to rail operations including speed through heavily populated areas and positive train control, and changes to incident and spill response.<sup>3</sup>

New rail tank car standards have been adopted that enhance tank car standards, new braking standards and various operational requirements for crude-carrying trains. New tank cars constructed after October, 2015 must meet these standards, while existing DOT-111 tank cars must be retrofitted to standard within 5 years. Safety of rail cars is not the only issue as track and infrastructure failure is the second leading cause of train derailments in the U.S.<sup>4</sup>

There are nearly 3,000 railroad bridges in New York State. Railroad bridges are required by federal law to be inspected annually by railroad track owners. The Federal Railroad Administration does not keep an inventory of railroad bridges.<sup>5</sup> The New York State Railroad Bridge Inspection Program requires New York State Department of Transportation (NYS DOT) to monitor railroad self-inspection compliance. A 2013 audit by the Office of the New York State Comptroller found that NYS DOT does not actively monitor submission of railroad bridge self-inspection certifications nor do they have the resources to do so.<sup>6</sup>

<sup>1</sup> Brian Tumulty. (July 16, 2014). CSX: 15-30 Oil Trains Move Weekly on the Hudson River Line. *The Journal News*. Retrieved May 7, 2015, from <http://www.lohud.com/story/news/local/rockland/2014/07/16/oil-train-routes-numbers-new-york-disclosed/12734597/>.

<sup>2</sup> U.S. Pipeline and Hazardous Materials Safety Administration. Retrieved from <https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/search.aspx>.

<sup>3</sup> Congressional Research Service. (December, 2014). U.S. Rail transportation of Crude Oil: Background and Issues for Congress. Retrieved March 27, 2015 from <https://fas.org/sgp/crs/misc/R43390.pdf>.

<sup>4</sup> Federal Railroad Administration. Track Research Overview. Retrieved May 6, 2015 from <https://www.fra.dot.gov/Page/P0065>

<sup>5</sup> U.S. Department of Transportation Federal Railroad Administration. (February, 2013). Railroad Bridge Safety Fact Sheet. Retrieved April 30, 2015 from <http://www.fra.dot.gov/eLib/Details/L03491>.

<sup>6</sup> New York State Office of the State Comptroller. (December, 2013). Railroad Bridge Inspection Program. P. 6.





On the freight rail operations side, bridge and rail inspection must be prioritized. Hudson Valley residents, businesses and elected officials must continue to press for these changes. Track or bridge failure can cause loss of life, and is responsible for most train accidents. Moreover, damage from a crude spill could cause catastrophic loss of life and major environmental damage. New York State must allocate resources to improve the track inspection program.

The recent rail accidents in the Hudson Valley have made the region reconsider the many at-grade rail crossings. Would \$30 million spent on grade separation be better allocated to a combination of

infrastructure and system improvements such as new gates and barriers, improved signage, warning systems, and inspection oversight? With limited resources for infrastructure, we must get smarter about how we invest it.

## MEASURING EQUITABLE DISTRIBUTION OF TRANSPORTATION INVESTMENTS

Limited transportation infrastructure resources are evident, especially after another hard winter with secondary roads falling into disrepair and municipal leaders lamenting the lack of funding. Funding for road and bridge infrastructure in New York State is a combination of federal, state and local support. Special circumstances such as Hurricanes Irene, Lee and Sandy or the Great Recession's Stimulus Plan result in temporary funding streams. Funding sources include Locally Administered Federal Aid Program, Critical Bridges over Water funding, NY Works, and more. Given the complexity, the limited resources and the size of the need, fair share allocations would be ideal.

The Regional Economic Development Council process brought a level of transparency to the economic development funding arena by annually publishing awards data, but the same cannot be said for transportation, making it very difficult to evaluate resource allocation.

There are a number of methods to deliver fair share allocation.<sup>7</sup> Some state departments of transportation have sought to create new models of fair share allocation of resources<sup>8</sup> and the American Association of State Highway and Transportation Officials continues to call for better methods of resource allocation.<sup>9</sup> Current fair share methods

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<sup>7</sup> Existing models include the Divide and Choose Procedure, the Moving Knife, the Last-Diminisher "Trimming Algorithm", the Successive Pairs Algorithm, the Knaster's Procedure, the Adjusted Winner (AW) Procedure, and the Point Allocation. Carlos M. Chang and Edith Montes. (Spring, 2014). An Optimization Approach to Fair Division of Transportation Funding Allocation Models. Transportation Research Forum. Volume 53, Number 1. The Divide and Choose Procedure (Barbanel and Brams 2004), the Moving Knife (Barbanel and Brams 2004), the Last-Diminisher "Trimming Algorithm" (Austin 1982), the Successive Pairs Algorithm (Austin 1982), the Knaster's Procedure (Brams and Taylor 1996), the Adjusted Winner (AW) Procedure (Brams and Taylor 1993), and the Point Allocation (Saunders 2011).

<sup>8</sup> A new complex model was developed for the Texas Department of Transportation. Emmanuel Gurrola and Heidi A. Taboada. (October, 2011). A Sequential Fund Allocation Approach to Minimize Envy. Proceedings of the 41<sup>st</sup> International Conference on Computers and Industrial Engineering. Retrieved March 4, 2015 from [http://www.usc.edu/dept/ise/caie/Checked%20Papers%20\[ruhi%2012th%20sept\]/word%20format%20papers/REGISTRATION%20PAID%20PAPERS%20FOR%20PROCEEDINGS/pdf](http://www.usc.edu/dept/ise/caie/Checked%20Papers%20[ruhi%2012th%20sept]/word%20format%20papers/REGISTRATION%20PAID%20PAPERS%20FOR%20PROCEEDINGS/pdf)

<sup>9</sup> Nazneed Ferdous, et al. (December 2014). Application of Fair Division, Data Envelopment Analysis and Conjoint Analysis Techniques to Funding Decisions at the Program and Project/Activity Level. The Rand Corporation. Retrieved May 7, 2015 from [http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP08-36%28115%29\\_FR.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP08-36%28115%29_FR.pdf).

fall into two main goal categories: proportionality and envy-free. Proportionality attempts to provide the same amount to each participant. Envy-free methods attempt to provide participants as close to what is requested. Some funding sources like Consolidated Local Street and Highway Improvement Program (CHIPS) are calculated based on a legislatively mandated formula. On the other hand, some funding, such as state funds that flow through the regions of the New York State Department of Transportation are much more complicated.

In the absence of a stated allocation method, transportation resources become very difficult to evaluate for fairness. To examine regional NYS DOT funding, Pattern used state system mileage and the number of bridges maintained by NYS DOT to determine the percentage of assets by region, weighing both mileage and bridge deck area equally.

Region	NYS DOT Maintained Lane Miles	% NYS DOT Maintained Lane Miles	Number of Bridges	Percent of Bridges	Combined Assets
1	4,811	12%	839	11%	12%
2	3,021	8%	497	6%	7%
3	3,576	9%	615	8%	9%
4	4,191	11%	797	10%	10%
5	3,893	10%	858	11%	10%
6	2,239	6%	542	7%	6%
7	3,558	9%	406	5%	7%
8	5,466	14%	1,157	15%	14%
9	4,285	11%	954	12%	12%
10	2,727	7%	545	7%	7%
11	802	2%	679	9%	5%
<b>Total</b>	<b>38,569</b>	<b>100%</b>	<b>7,889</b>	<b>100%</b>	<b>100%</b>

Source: Compiled by Pattern for Progress.

With that calculation, the Hudson Valley has 14% of the NYS DOT’s assets. But these numbers do not take into account traffic volume, age of infrastructure or other factors. Maintaining a mile on the Hutchinson River Parkway is not the same as a mile on Route 20 in Albany County. The cost of materials and labor differs regionally, with New York City costs in the lead. Furthermore, it is not clear that number of bridges, rather than bridge deck area is appropriate, nor is it clear that road miles and number of bridges should be equally weighted. Nonetheless, Pattern finds it useful to evaluate the transportation regions of the state using some relative metric for comparison purposes.

Gathering data on allocation of transportation fund by NYS DOT region is not trivial. The NYS Budget does not allocate funds by region, nor are region total projects reported comprehensively. NYS DOT Projects are reported on a per project basis through the In Your Neighborhood database. Pattern for Progress has analyzed “completed” and “in construction” project records by region. NYS DOT Region 8 covers all the counties in the Pattern region (except Greene and Sullivan counties). For the purpose of this analysis, Pattern examined projects with contract award dates that fell in the two fiscal year periods April 1, 2013-March 31, 2014, and April 1, 2014-March 5, 2015.

Proportional allocation based on share of assets would have provided Region 8, the Hudson Valley, with \$143.4 million more dollars over the 2013-2014 and 2014-2015 state fiscal years. Allocations of state funding should start with a baseline of this type of fair share analysis, adjusted for issues such as volume, density, age of infrastructure and

regional variation in wage and material costs. Transparency in this age of limited resources is paramount. The NYS DOT should strive for some type of fair share resource allocation that provides clarity to the regions. The state does this for some transportation funding streams. For example, NYS allocates CHIPS funds by formula.<sup>10</sup>

Region	Proportional Share of Assets	NYS DOT Projects Database	Share of funding allocate 2013-2014 and 2014-2015 %	Difference between actual and proportional share funding
1	12%	\$356,457,263	17%	\$(112,776,440)
2	7%	\$42,208,415	2%	\$106,819,169
3	9%	\$91,656,586	4%	\$88,317,558
4	10%	\$76,337,080	4%	\$144,778,691
5	10%	\$219,212,129	10%	\$1,909,835
6	6%	\$49,493,192	2%	\$84,169,155
7	7%	\$94,519,781	4%	\$57,025,985
8	14%	\$160,609,755	8%	\$143,484,924
9	12%	\$113,062,735	5%	\$131,608,640
10	7%	\$372,964,175	18%	\$(225,558,698)
11	5%	\$532,465,242	25%	\$(419,778,819)
<b>Total</b>	100%	\$2,108,986,353		

Source: Compiled by Pattern for Progress from Associated General Contractors and NYS DOT Projects In Your Neighborhood Database

New York also makes major infrastructure investments through other agencies. In the Hudson Valley, this includes the NYS Thruway Authority, the NYS Bridge Authority, the Metropolitan Transit Authority, the Port Authority of New York and New Jersey and New York City Department of Environmental Protection. Several of these agencies have very large capital programs impacting the Hudson Valley at this time.

Even with these large projects, investments in transportation systems have fallen behind other countries in terms of percent of GNP<sup>11</sup> and when inflation is factored in and long-term trends are studied, it becomes clear that more investment is needed.

<sup>10</sup> Of \$145 million allocated in 2015, 20.7% (\$30 million) is distributed to counties and NYC on the basis of their relative shares of motor vehicle registrations and 20.7% (\$30 million) is distributed to counties and NYC on the basis of their relative shares of centerline highway mileage. The remaining \$85 million is distributed to all municipalities in a two part process. First, the money is split into individual amounts for cities, counties, villages, and towns on the basis of relative vehicle miles of travel for each municipality class (42.7% for cities, 18.5% for counties, 10.7% for villages, and 28.1% for towns). Amounts so allocated to each municipality class are then apportioned within that class on the basis of the relative number of lane-miles.

<sup>11</sup> Transportation infrastructure investment has fallen from a high of 3.2% of GDP in 1962 to only 1.4% in 2011. The White House. An Economic Analysis of Transportation Infrastructure. Retrieved March 20, 2015 at [https://www.whitehouse.gov/sites/default/files/docs/economic\\_analysis\\_of\\_transportation\\_investments.pdf](https://www.whitehouse.gov/sites/default/files/docs/economic_analysis_of_transportation_investments.pdf) at page 18.



#### Port Authority of New York and New Jersey

- Stewart Airport Runway Resurfacing and other projects
- \$154 million
- Complete



#### New York State Thruway Authority

- Tappan Zee Bridge Replacement
- \$3.9 billion
- In construction



#### New York State Bridge Authority

- Bridge Repair
- \$117 million
- In construction



#### New York City Department of Environmental Protection

- Delaware Aqueduct Bypass Tunnel
- \$1 billion
- In construction

An analysis of the region’s bridges underscores this lack of resources. The average age of bridges in Region 8 of DOT is 52 years compared to the state average of 48 years and the national average of 43 years.<sup>12</sup> Even more important than bridge age, is the condition rating of the bridges in the region. Hudson Valley bridges are in significantly poorer condition than bridges throughout the state, with the exception of Greene County where 6% of the bridges have been replaced since Hurricane Irene in 2011. Statewide 3% of bridges are a 2011 vintage or later. Infrastructure failures caused by extreme weather conditions can accelerate replacement schedules.

New York’s condition rating scale is unique and it predates national bridge inspection standards. NYS DOT computes an overall condition rating for each bridge by combining the ratings of individual components using a weighted average formula. This formula assigns greater weights to the ratings of the bridge elements having the greatest structural importance. If a bridge has multiple spans, the lowest individual span element rating is used.

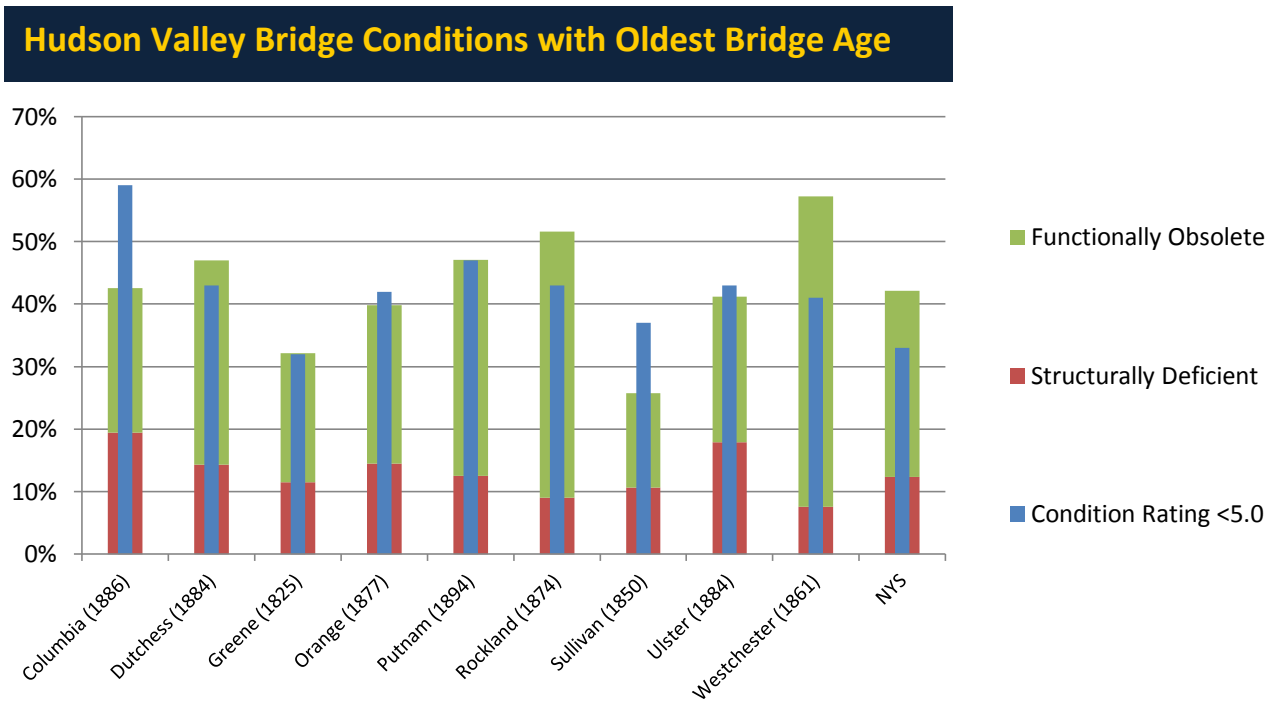
NYS DOT defines a deficient bridge as one with a state condition rating less than 5.0 on a 1.0 to 7.0 scale. Bridges with a condition rating above 5.0 are considered in good condition. A deficient condition rating indicates deterioration at a level that requires corrective maintenance or rehabilitation. It does not mean that the bridge is unsafe. Every county in the study region, except Greene, has a higher percentage of bridges considered deficient than the statewide average.

The federal ratings are used to identify bridges that do not meet contemporary Federal Highway Administration (FHWA) standards. Those bridges are classified as either “structurally deficient” or “functionally obsolete.” Bridges are considered “structurally deficient” if significant load carrying elements are found to be in poor or worse condition due to deterioration and/or damage, the bridge has inadequate load capacity or repeated bridge flooding causes traffic delays. A “structurally deficient” bridge, when left open to traffic, typically requires significant maintenance and repair to remain in service and eventual rehabilitation or replacement to address deficiencies. In order to remain in

<sup>12</sup> Transportation for America. (2013). *The Fix We’re In: The State of Our Nation’s Bridges 2013*. Retrieved April 13, 2015 from <http://t4america.org/docs/bridgereport2013/2013BridgeReport.pdf>.

service, structurally deficient bridges are often posted with weight limits. “Functionally obsolete” refers to a bridge’s inability to meet current standards for managing the volume of traffic it carries, not its structural integrity. For example, a bridge may be functionally obsolete if it has narrow lanes, no shoulders, or low clearances.

Hudson Valley bridge age shows that our infrastructure is older than much of the rest of the state and nation. We have a unique history as one of the first areas of the country developed, but it means that maintenance and repair of this infrastructure requires significant investment, the funding for which must be found. Federal policy makers are contemplating how to address the exhausted federal Highway Trust Fund which provides transportation funding to the states and is no longer fully supported by user fees has been running on annual infusions since 2008. Federal transportation funding is based on the gas tax, which is 18 cents per gallon and has not been raised since 1993. If pegged to inflation, it would now be 29.7 cents per gallon and if adjusted to meet total need would be 77 cents per gallon.<sup>13</sup> Gas prices at the pump are lower now than they have been in many years. National business organizations such as the U.S. Chamber of Commerce and the National Association of Manufacturers have taken the position supporting an increase in the federal gas tax<sup>14</sup> or indexing it to inflation<sup>15</sup> to further infrastructure investment.



Source: NYS DOT Bridge Data Information by County. Retrieved April 2, 2015 from <https://www.dot.ny.gov/main/bridgedata>

<sup>13</sup> Charles Mahron. (July 24, 2014). Some Perspective on the Gas Tax. *Strong Towns*. Retrieved January 15, 2015 from <http://www.strongtowns.org/journal/2014/7/24/some-perspective-on-the-gas-tax.html>.

<sup>14</sup> Thomas J. Donoghue. (February 12, 2014). It’s Time to Raise the Federal Gas Tax. *U.S. Chamber Blog*. Retrieved April 20, 2015 from <https://www.uschamber.com/blog/its-time-raise-federal-gas-tax>.

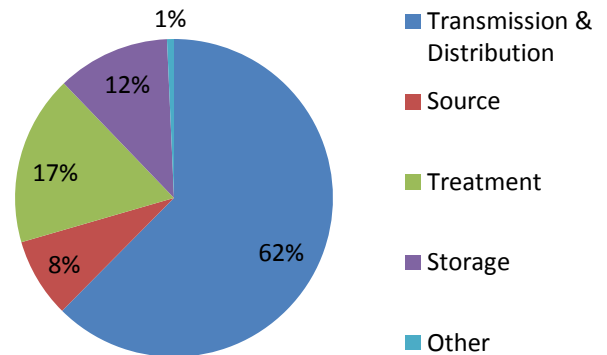
<sup>15</sup> Bob Tita. (September 23, 2014). Manufacturers Back Road Tax Changes: Group Wants a \$100 Billion a Year Increase in Infrastructure Spending. *Wall Street Journal*. Retrieved April 23, 2015 from <http://www.wsj.com/articles/manufacturers-urge-fuel-tax-review-1411444861>.



## WATER AND WASTEWATER INFRASTRUCTURE: GROWING THE ECONOMY AND PROTECTING THE ENVIRONMENT

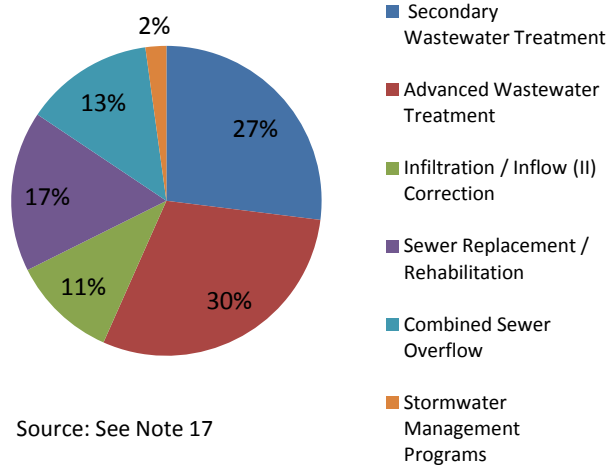
Water and wastewater resources are equally constrained. The federal Clean Water and the Safe Drinking Water Acts require the U.S. Environmental Protection Agency to determine capital needs for water and wastewater facilities every 5 years. This analysis is done through the Clean Water and Drinking Water Needs Surveys. The results of these surveys guide annual recapitalizations of the revolving loan funds that support municipal infrastructure improvements through Environmental Facilities Corporation to municipalities. The last Drinking Water Needs Survey Report based on 2011 survey work shows that New York State has capital needs of over \$22 billion, second only to California, with the majority of that need in repair of transmission and distribution lines.<sup>16</sup>

### NYS Drinking Water Capital Needs



Source: See Note 16

### NYS Clean Water Capital Needs



Source: See Note 17

On the clean water side, data for the last Clean Water Needs Survey was collected in 2012 and was expected to be released in 2014. The prior survey, released in 2008, showed the total need for New York State at \$29.7 billion, third after New Jersey (\$32.5 billion) and California (\$29.9 billion).<sup>17</sup> Fifty-seven percent of the need is for secondary wastewater treatment and advanced wastewater treatment capital improvement. An updated Clean Water Needs Survey Report is overdue and with those results in hand we will have a better sense of true needs in the state and the region.

Too often when major economic development projects are contemplated infrastructure capacity is not as readily available as land use, workforce, and incentives. Pattern proposes an additional approach to inform development

decisions. That is, ascertaining capacity in advance and having systems and locations with capacity known to site selectors and economic development officials.

Placing development where infrastructure exists is imperative if we are to leverage our public resources. New York has taken several legislative measures to implement smarter infrastructure investments. The Smart Growth Public Infrastructure Policy Act enacted in 2010 requires a smart growth analysis for state investments in water and sewer projects in order to avoid sprawl. The long term cost to maintain infrastructure should be taken into account when extending additional infrastructure. Every capital project should require an ongoing operation and maintenance plan.

<sup>16</sup> US EPA Drinking Water Infrastructure Needs Survey and Assessment at <http://water.epa.gov/infrastructure/drinkingwater/dwns/>

<sup>17</sup> US EPA Clean Watershed Needs Survey Overview at <http://water.epa.gov/scitech/datait/databases/cwns/>

State agencies have incorporated the administrative aspects of conducting a smart growth review for agency decisions, but whether that analysis actually informs decision making requires more comprehensive analysis.<sup>18</sup>

Pattern was able to obtain State Pollution Discharge Elimination System records for certain municipal wastewater treatment plants contained within the Hudson River Watershed. This data contained maximum permitted flow as well as average daily flow. Pattern analyzed the data for spare capacity (that is the difference between average and maximum flow) and mapped plants with at least 25% spare capacity and more than .2 million gallons per day (MGD).

Water supply data was obtained through DEC's GIS Clearinghouse data of NYS Water Withdrawals and covers Pattern's whole nine-county region. Excess water capacity depends on additional factors such as capacity to meet maximum daily flows during very hot periods, fire suppression and potential drought conditions. For the purpose of this analysis, Pattern selected water systems with more than 40% capacity available and those with more than .1 MGD were mapped.

Facilities with apparent capacity may have other constraints such as conveyance capacity or NYC Watershed Regulation. Although this map does not show whether individual properties are contained within a district, it may allow the economic development and planning communities to see those areas where infrastructure is available that could potentially absorb additional development.



This map is meant to provide guidance but is not determinative. A facility not appearing on the map may have capacity and a facility appearing on the map may not have the capacity to accommodate development. To facilitate future economic growth with limited resources, the region must target development where infrastructure exists to support it. An interactive version of the map can be found here: <http://arcg.is/1GT7ml3>

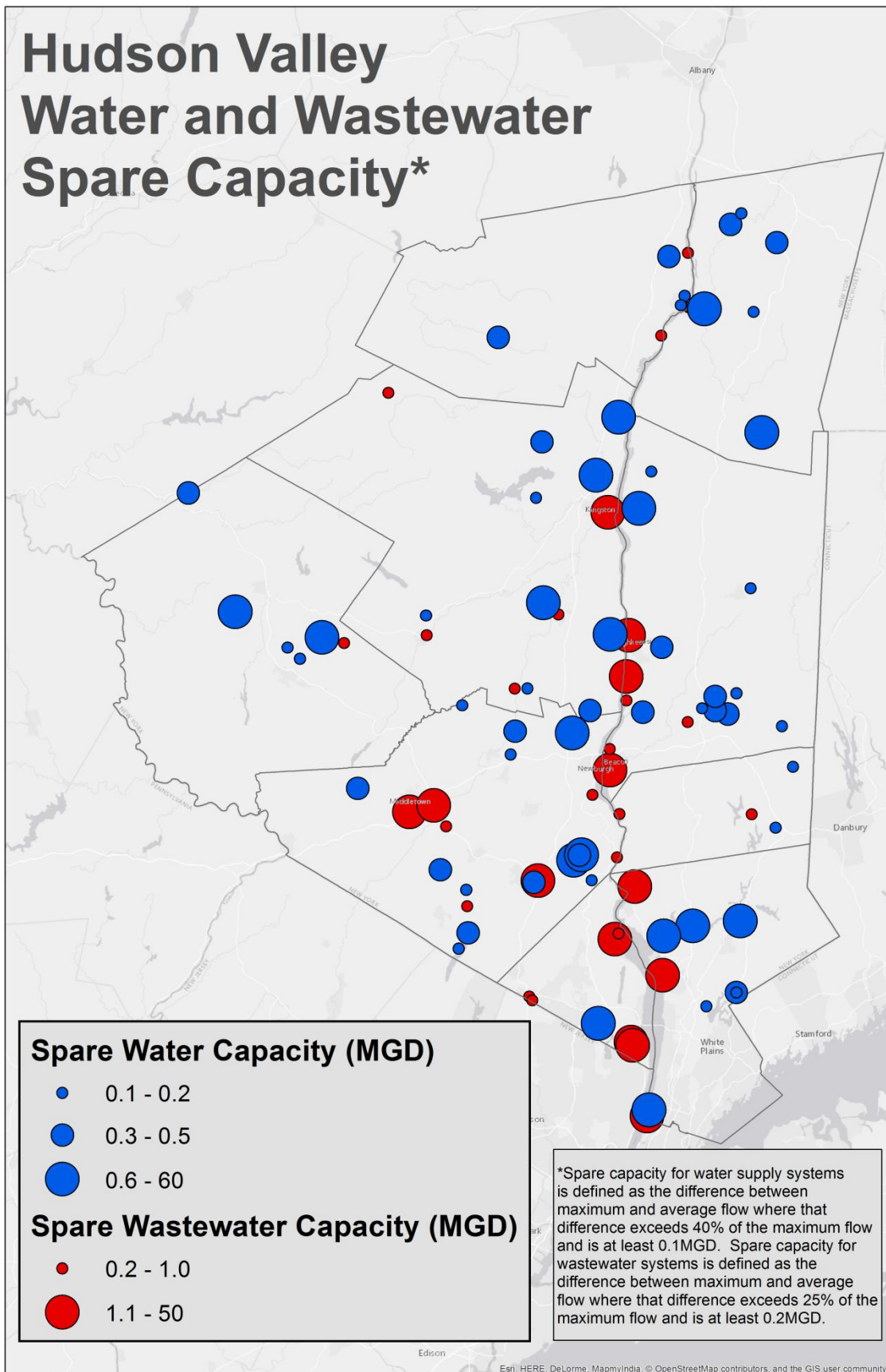
Municipally owned water and wastewater systems are significantly underfunded as demonstrated by the EPA needs surveys. Only 57% of the region's municipalities have capital plans.<sup>19</sup> State law should require counties, cities, towns and villages to prepare capital plans in exchange for infrastructure grants and loans. Public authorities are required to do so,<sup>20</sup> why not local governments? How can the public allocate resources wisely and balance competing interests if we do not know our likely future infrastructure needs? With capital planning and regional assessment of condition and capacity, we will be better able to manage water and sewer assets not only for public health and the environment but for growth and development.

<sup>18</sup> Heidi Mouillesseaux-Kunzman and David Kay, (October 2014). *Water and Sewer Infrastructure: Economic Development Funding and NY's Smart Growth Public Infrastructure Policy Act*. New York State Water Resources Institute, Cornell University.

<sup>19</sup> Hudson Valley Pattern for Progress. (May, 2014). *Infrastructure Planning and Investment: A Widening Gap*. P. 5.

<sup>20</sup> Public Authorities Reform Act of 2009 §6.

# Hudson Valley Water and Wastewater Spare Capacity\*



## PATTERN'S UPCOMING INFRASTRUCTURE PROGRAM

During the next year, Pattern for Progress will continue its infrastructure program. Pattern has been awarded Strategic Planning and Feasibility Program funding as a priority of the Mid-Hudson Regional Economic Development Council to conduct infrastructure research and planning for the Hudson Valley. This award through the Consolidated Funding Application process will provide some of the support for Pattern's work through 2016. Our plans include:

- Analyzing regional infrastructure data. Pattern will evaluate US EPA Needs Data, municipal and agency budgets and capital plans in order to identify needs, gaps and areas that require greater investment.
- Resurveying Hudson Valley municipalities on infrastructure. In 2014, Pattern surveyed 240 Hudson Valley cities, towns and villages to determine perceived infrastructure conditions and barriers to investment. The region will be resurveyed and will include counties in 2016.
- Conducting case studies of infrastructure issues in seven urban communities. Pattern will conduct an in depth analysis of the major infrastructure issues plaguing seven Hudson Valley communities, going beyond the survey stage to investigate the scope of infrastructure problems, barriers to improvement and possible strategies for improvement.
- Hosting workshops on infrastructure throughout the region. Pattern will share our findings and potential solutions in a series of workshops throughout the Hudson Valley targeted at municipalities as well as other public bodies such as school districts and fire departments that have large capital needs.



Send comments or suggestions to [mgallagher@pfprogress.org](mailto:mgallagher@pfprogress.org)

**Hudson Valley Pattern for Progress is the policy, planning and advocacy organization that creates regional balanced and sustainable solutions to quality-of-life issues by bringing together business, nonprofit, academic and government leaders to collaborate on regional approaches to affordable/workforce housing, municipal sharing and local government efficiency, land use policy, transportation and infrastructure issues that most impact the growth and vitality of the regional economy.**

**Become a member of Pattern and be part of the solution!**

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