The Economic Impacts of a $1 Billion Increase in New Jersey Drinking Water, Wastewater and Stormwater Capital Investment



Prepared by ARTBA American Road & Transportation Builders Association

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About ARTBA

ARTBA is a federation whose primary goal is to aggressively grow and protect transportation infrastructure investment to meet the public and business demand for safe and efficient travel. In support of this mission, ARTBA also provides programs and services designed to give its more than 8,000 public and private sector members a global competitive edge.

About the Utility and Transportation Contractors Association of New Jersey (UTCA)

The Utility and Transportation Contractors Association of New Jersey is a non-profit trade association headquartered in Wall Township, New Jersey. Founded in 1965, UTCA represents approximately 1,000 member firms in the public and private sectors, active in all phases of heavy, highway, utility, and marine construction, as well as site work including remediation of brownfields and contaminated sites.

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I. Executive Summary

New Jersey residents and businesses rely on infrastructure to supply clean drinking water, treat wastewater, and provide reliable power generation. Current spending on these important networks throughout the state is estimated by the Utility and Transportation Contractors Association of New Jersey (UTCA) to average approximately $1 billion per year. There is a need for at least $40 billion in investment over the next 20 years ($2 billion per year),[1] leaving **$1 billion in unmet needs annually**. If all levels of government do not increase investment levels, New Jersey's drinking water, wastewater and stormwater infrastructure will slip further behind in maintaining and improving water infrastructure.

What does inadequate investment in these critical systems look like to the people that live and work in New Jersey? It means more water main and sewer breaks, which shut down roads and create risks to public health. With aging water systems in many communities, it means more risks of contaminated drinking water. When rain already leads to flooding due to overwhelmed wastewater and stormwater infrastructure, it means that New Jerseyans are even less prepared to address the more powerful storms and hurricanes that are expected to increase in coming years.

Increasing investment by $1 billion would allow the state to preserve current drinking water, wastewater and stormwater systems, make needed safety improvements, increase capacity and resilience, and invest in necessary equipment. **This would improve these systems to a state of good repair, preventing or reducing service disruptions for residents and businesses. This additional investment would also have significant economic impacts, providing $2.9 billion in benefits and creating or supporting 13,787 jobs throughout the state.**

Economic Impacts of $1 Billion in Drinking Water, Wastewater and Stormwater Capital Investment in New Jersey	
Total Output	$2.1 billion
Total Value Added (GSP)	$1.2 billion
Earnings	$739.5 million
Employment	13,787 jobs
Total Tax Revenues	$143.1 million
State Payroll Tax	$6.2 million
Federal Payroll Tax	$56.6 million
State Individual & Corporate Income Tax	$61.1 million
Sales & Use Tax	$19.3 million
Total Impact	**$2.9 billion**

This report examines how investing the additional $1 billion needed on the drinking water, wastewater and stormwater networks would create economic benefits throughout the state economy.

We use the sophisticated "Regional Input-Output Modeling System" (RIMS II) developed by the U.S. Department of Commerce to track the complex money flows and interactions that occur between the state's diverse business sectors. This, in tandem with data from the U.S. Census Bureau, allows us to determine how a $1 billion annual increase in drinking water, wastewater and stormwater capital outlays would impact the output of key business sectors within the region.

[1] New Jersey State Legislature, "The Joint Legislative Task Force On Drinking Water Infrastructure: Final Report", January 2018. <https://www.njleg.state.nj.us/legislativepub/reports/tdwi_final_report.pdf>.

Capital investments to repair, replace and upgrade aging drinking water, wastewater and stormwater systems generate and sustain jobs directly through these needed repair projects, but also stimulate economic activity in other related sectors, as water projects depend on materials such as pipes, fittings, cement, and aggregates. In addition, these investments will ensure safe water and reliable wastewater treatment for New Jerseyans, a necessary criteria to attract and retain industry, businesses, and qualified workers.

Immediate Economic Benefits of Increasing Investment

A sustained increase in New Jersey drinking water, wastewater and stormwater investment would help businesses increase output, grow the tax base and support jobs across all major sectors of the state economy.

The construction activity from a $1 billion investment increase would yield the following benefits:

- Sales and output by businesses in all sectors will increase by $2.1 billion.
- These investments will contribute $1.2 billion to the gross state product (GSP). This value added is the difference between the total sales value of goods and services supported by the increased investment and the cost of the intermediate inputs to produce that economic activity.
- State and local tax revenues will grow by $143.1 million.
- An additional 13,787 jobs would be supported or created throughout the economy, with 45 percent of the employment outside of the construction industry.
- Those workers will earn $739.5 million.

How does this ripple effect work? Water and wastewater contractors purchase inputs (such as materials) from New Jersey businesses, in addition to other firms outside of the state, as they complete work on projects. These suppliers then purchase items from other firms, creating an indirect effect.

These employees of the construction firms and supplier industries spend their earnings by purchasing clothing, food and other goods and services, thereby creating induced demand in other sectors of the state economy. As jobs are created or sustained, employees receive additional income and spend more, and businesses increase sales. Subsequently, taxes grow due to larger payroll and sales volumes, providing the state and local municipalities with additional revenues to reinvest in New Jersey.

As repairs and upgrades are made to New Jersey's critical drinking water, wastewater and stormwater networks, residents and businesses will see fewer service disruptions and less flooding, resulting in lower costs and higher productivity. This suggests that the $2.9 billion economic impact is conservative.

New Jersey Has Significant Infrastructure Challenges

The challenges facing New Jersey's critical drinking water, wastewater and stormwater networks are well documented. In addition to poor conditions, some current and future challenges include:

- Residents and businesses rely on an increasingly aging system, with most of the drinking water and sewer collection systems constructed over 50 years ago.
- The American Society of Civil Engineers gave New Jersey a C grade (mediocre: requires attention) for its drinking water infrastructure and a D grade (poor: at risk) for its wastewater infrastructure.[2]
- New Jersey loses 20 to 22 percent of its treated water annually from leaking pipes.[3]
- The state's combined sewer systems discharge over 7 billion gallons of diluted raw sewage into the New York/New Jersey harbor as well as into the Hackensack, Passaic and Delaware rivers each year.[4]

The New Jersey drinking water, wastewater and stormwater infrastructure network has a daily impact on business operations and residents' quality of life, providing safe and reliable drinking water, efficient disposal of wastewater, and reliable power. **Current capital investment decisions will have a profound effect on the safety, condition, reliability and efficiency of the state's drinking water, wastewater and stormwater systems**.

[2] American Society of Civil Engineers, "2016 Infrastructure Report Card," <https://www.infrastructurereportcard.org/state-item/new-jersey/>.

[3] Facing Our Future. April 2013. *Infrastructure Investments Necessary for Economic Success*. April 2013. <https://www.njfuture.org/wp-content/uploads/2015/05/2013-Facing-Our-Future-Report-Infrastructure-Investments-Necessary-for-Economic-Success.pdf>.

[4] New Jersey Future, "Ripple Effects: The State of Water Infrastructure in New Jersey Cities and Why it Matters", May 2014, <https://www.jerseywaterworks.org/wp-content/uploads/2016/01/RIPPLE-EFFECTS-Final.pdf.pdf>.

II. New Jersey's Drinking Water, Wastewater and Stormwater Needs

New Jersey is facing significant water infrastructure challenges, and has numerous needs that must be addressed in order to bring the state's drinking water, wastewater and stormwater networks to a state of good repair. Residents across the state use up to 1 trillion gallons of water each year, supporting potable water, power generation, commercial, industrial and mining sectors, and agricultural and non-agricultural irrigation.[5] Increasing investment to improve the efficiency and conditions of drinking water, wastewater and stormwater networks will help all people who live and work in New Jersey.

- **Drinking Water Infrastructure Conditions**[6] — According to the American Society of Civil Engineers, New Jersey has $933 million in drinking water infrastructure needs over the next 20 years.

  Nearly 90 percent of the state's population, as well as the many businesses and government facilities across the state, rely on public community water supply systems for their drinking water.

  New Jersey's drinking water infrastructure has aged significantly; most of the state's water supply systems were constructed at least 50 years ago, during periods of growth when major cities (1890-1930) and suburbs (1950-1970) expanded.

  New Jersey loses 20 to 22 percent of its treated water annually from leaking pipes (with some water suppliers reporting losses as high as 33 percent), compared to an industry standard of 15 percent loss.[7]

  New Jerseyans rely on their drinking water systems to ensure public health and support economic growth. Providing safe and abundant drinking water necessitates significant capital investment. Absent adequate investment in the state's critical drinking water networks, residents are likely to see an increase in public safety issues such as: losses in service due to pipeline breaks; localized issues with lead service lines and internal plumbing; and the forced enaction of emergency restrictions in the case of droughts and floods due to insufficient supplies or inundation of treatment plants. In addition, the large impact of Hurricane Sandy on New Jersey's infrastructure illustrated the poor resilience of the state's water treatment systems when faced with energy loss and flooding.

[5] State of New Jersey Department of Environmental Protection, "New Jersey Water Supply Plan 2017-2022", Oct. 2017, <https://www.state.nj.us/dep/watersupply/pdf/wsp.pdf>.

[6] American Society of Civil Engineers, "2016 Infrastructure Report Card," <https://www.infrastructurereportcard.org/state-item/new-jersey/>.

[7] Facing Our Future. April 2013. *Infrastructure Investments Necessary for Economic Success*. April 2013. <https://www.njfuture.org/wp-content/uploads/2015/05/2013-Facing-Our-Future-Report-Infrastructure-Investments-Necessary-for-Economic-Success.pdf>.

- **Wastewater and Stormwater Infrastructure Conditions**[8] — According to the American Society of Civil Engineers, New Jersey has $17.48 billion in wastewater infrastructure needs over the next 20 years.

  Nearly 90 percent of the state's population, as well as most of the businesses and government facilities across the state, rely on public wastewater systems to collect and treat their sewage.

  Similar to drinking water infrastructure, New Jersey's wastewater infrastructure has aged significantly; most of the state's sewer collection systems were constructed at least 50 years ago, during periods of growth when major cities (1890–1930) and suburbs (1950–1970) expanded.

  New Jersey's oldest cities utilize combined sewer systems, which convey sewage to a treatment plant but also carry stormwater when it rains, collecting rainwater that runs off buildings and roads. However, when the combined volume of sewage and stormwater flows is too high for the treatment plant to handle, the system, by design, discharge sewage and wastewater directly into nearby water bodies without treatment, polluting rivers and bays. These outflows can expose people to sewage backups in homes, streets and waterways, and also have significant environmental impacts, causing the closure of beaches, affecting the habitats of fish and other aquatic life, as well as dumping plastic bottles and other litter into waterways.

  These combined sewer systems discharge over 7 billion gallons in diluted raw sewage through 217 outfalls into the New York/New Jersey harbor estuary as well as into the Hackensack, Passaic and Delaware rivers each year. Drainage areas cover 53 percent of municipal land area on average, but vary by location, ranging from 17 percent to 100 percent of the municipal land area, depending on the amount of land covered by separate sewer systems as well as the amount of land with no sewers due to open space or wetlands. Similarly, the number of sewer systems outfalls ranges from: zero in Union City; to one in Guttenberg, Trenton and East Newark; to 30 in Bayonne. Discharges ranges from 22 million gallons per year in East Newark to 2 billion gallons in Newark.[9]

[8] American Society of Civil Engineers, "2016 Infrastructure Report Card," <https://www.infrastructurereportcard.org/state-item/new-jersey/>.

[9] New Jersey Future, "Ripple Effects: The State of Water Infrastructure in New Jersey Cities and Why it Matters", May 2014, <https://www.jerseywaterworks.org/wp-content/uploads/2016/01/RIPPLE-EFFECTS-Final.pdf.pdf>.

Wastewater collection and treatment systems protect public health and the environment, and support economic growth. Absent adequate investment in the state's critical wastewater networks, residents are likely to see an increase in public safety issues including combined sewer overflows and sanitary sewer overflows, as well as stormwater and contaminated runoff pollution. Hurricane Sandy also highlighted the poor resilience of the state's wastewater treatment systems when faced with energy loss and storm surge on the coast.

During Hurricane Sandy, New Jersey released 5.1 billion gallons of untreated sewage into receiving bodies of water.[10] The New Jersey Department of Environmental Protection estimated that $2.7 billion is needed for facility repairs and system enhancements in order to make water infrastructure more resilient against future failures.[11] The Passaic Valley Sewerage Commission plant, the country's fifth-largest wastewater treatment plant, incurred $110 million in damages from Hurricane Sandy, and needs approximately $250 million for improved protection against future storms, including flood walls, protection of sensitive equipment, and backup power.[12]

In the city of Camden, roadways fill with stormwater whenever it rains due to aging sewer lines, bringing transportation and commerce to a stop. Despite a $7.8-million drainage project, U.S. Route 30 (which links Philadelphia, Camden and Atlantic City) is forced to close during heavy flooding,[13] causing a detour for over 80,000 daily users.[14]

Poor water infrastructure has a significant impact on New Jerseyans who rely on transit to get to work and recreational activities, with 40 percent of all delays on the RiverLINE light rail system (running from Trenton to Camden) caused by water main breaks, rain or other water-related events in 2011 and 2012.[15]

These investment needs will only continue to grow as drinking water, wastewater and stormwater infrastructure reaches the end of its lifespan. As these needs grow, disruptions in water service and overflows will become more frequent.

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[10] Van Abs, Daniel, Alexander McClean, Ioanna Tsoulou, Yuling Gao and Tim Evans. May 2014. "Water Infrastructure in New Jersey's CSO Cities: Elevating the Importance of Upgrading New Jersey's Urban Water Systems. Rutgers-The State University of New Jersey". <https://www.jerseywaterworks.org/wp-content/uploads/2016/01/VanAbs_Urban-Water-Infrastructure-Report-Revised-Final-June-2014.pdf>.

[11] New Jersey Department of Environmental Protection. 2014. Guidance and Best Practices: Asset Management; Infrastructure Flood Protection; Emergency Response and Preparedness/Planning; and Auxiliary Power. Available from <www.nj.gov/dep/dwq/mface.htm>.

[12] New Jersey Future, "Ripple Effects: The State of Water Infrastructure in New Jersey Cities and Why it Matters", May 2014, <https://www.jerseywaterworks.org/wp-content/uploads/2016/01/RIPPLE-EFFECTS-Final.pdf.pdf>.

[13] DeNardo, Mike. "Admiral Wilson Boulevard Floods Despite Costly Drainage Project." KYW Newsradio 1060, April 19, 2011. Accessed April 9, 2014. <http://philadelphia.cbslocal.com/2011/04/19/admiralwilson-boulevard-floods-despite-costly-drainage-project/>.

[14] Delaware Valley Regional Planning Commission. US 30 Corridor Study: Camden County, New Jersey. Delaware Valley Regional Planning Commission, July 2002. Accessed April 9, 2014. <http://www.dvrpc.org/reports/02028.pdf>.

[15] New Jersey Future, "Ripple Effects: The State of Water Infrastructure in New Jersey Cities and Why it Matters", May 2014, <https://www.jerseywaterworks.org/wp-content/uploads/2016/01/RIPPLE-EFFECTS-Final.pdf.pdf>.

III. The Economic Impacts of a $1 Billion Increase in New Jersey Drinking Water, Wastewater and Stormwater Capital Investment

A $1 billion increase in New Jersey drinking water, wastewater and stormwater investment will have a significant immediate effect on all sectors of the state economy. Capital investments to repair, replace and upgrade aging drinking water, wastewater and stormwater systems not only generate and sustain jobs directly through these needed repair projects, but also stimulate economic activity in related sectors. In addition, these investments will ensure a high quality of life for New Jerseyans through safe water and reliable wastewater treatment, facilitating economic growth.

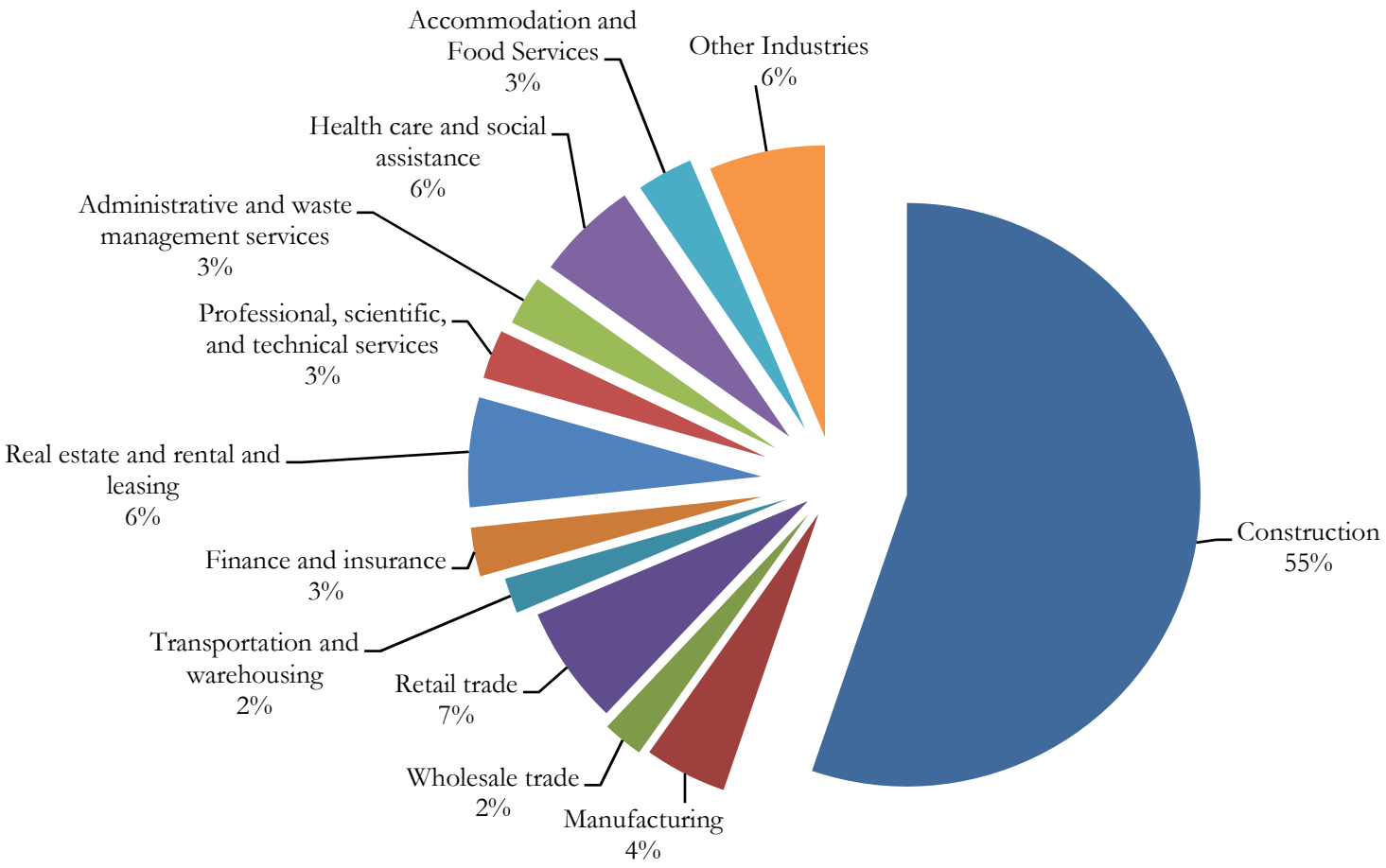
This ripple effect is felt through all sectors of the New Jersey economy – contractors purchase materials and workers spend their earnings while they work on projects, creating demand in other sectors of the state economy. As jobs are created or sustained, these employees earn more and spend more, and businesses increase sales. This results in larger payroll and sales volumes, providing the state and local municipalities with additional tax revenues to reinvest in New Jersey.

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment would generate the following economic benefits:

- Generate $2.1 billion annually in additional economic output as businesses throughout the economy sell more goods and services to both other businesses and consumers.
- Increase GSP, or the value added to the overall economy, by $1.2 billion per year. GSP is the state equivalent of national Gross Domestic Product (GDP), measuring the value of final goods and services produced within the state.[16]
- Support or create an additional 13,787 jobs on average each year throughout the economy, with 45 percent of the employment outside of the construction industry, including an estimated 906 jobs in retail trade, 835 jobs in real estate and rental and leasing, and 772 jobs in health care and social assistance.
- These workers will earn over $739 million in wages.
- $143.1 million in additional tax revenues. This includes:
  - $6.2 million in state payroll taxes
  - $56.6 million in federal payroll taxes
  - $61.1 million in state individual and corporate income taxes
  - $19.3 million in sales and use taxes

[16] New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

Additional New Jersey Jobs Supported/Created by a $1 Billion Increase in Drinking Water, Wastewater and Stormwater Capital Investment



Economic Impacts of $1 Billion in Drinking Water, Wastewater and Stormwater Capital Investment in New Jersey		
Industry	**Impact on Industry Output (in millions)**	**Jobs Supported/ Created**
Agriculture, forestry, fishing, and hunting	$1.6	29
Mining	$1.7	4
Utilities	$19.0	23
Construction	$1,008.1	7,578
Manufacturing	$220.1	624
Wholesale trade	$84.1	308
Retail trade	$82.8	906
Transportation and warehousing	$47.9	269
Information	$40.4	100
Finance and insurance	$105.7	370
Real estate and rental and leasing	$145.0	835
Professional, scientific, and technical services	$65.0	372
Management of companies and enterprises	$21.3	65
Administrative and waste management services	$33.2	382
Educational services	$10.5	145
Health care and social assistance	$89.6	772
Arts, entertainment, and recreation	$8.8	153
Accommodation and Food Services	$32.5	423
Other services	$37.5	361
Total industry impact*	$2,054.9	13,787

*Does not include impact on government output.

IV. Drinking Water, Wastewater and Stormwater Investment is Key to Business Success and Economic Growth

New Jersey's drinking water, wastewater and stormwater networks are integral to the success of the state economy. Every employee, customer and business pays a price when the water or wastewater system is in poor condition.

In addition to spurring immediate economic growth, investment in New Jersey's drinking water, wastewater and stormwater infrastructure will support the repair and maintenance of these critical networks, stimulating economic activity for many years to come. Improved drinking water, wastewater and stormwater networks result in reduced costs for New Jersey residents and businesses as well as lower public health risks. Sustained investment in drinking water, wastewater and stormwater infrastructure is critical to making the best use of these capital assets.

The importance of robust drinking water, wastewater and stormwater networks have been well documented by business analysts, economists and the research community. Some of these specific benefits include:

- **Spurring Local Economic Activity and Job Growth:** Investing in water infrastructure investment can have significant impacts in local areas. For instance, the three-year construction of the Carlsbad Desalination Plant in California supported thousands of local jobs and added $350 million into the local economy. Additionally, the Atlanta Department of Watershed Protection created an estimated 5,775 jobs during its $350 million water supply capital program.[17]

- **Business Expansion:** While the availability of clean, safe and reliable water systems is assumed in most places in the U.S., in extreme cases such as Flint, Michigan, this can be an important factor in whether a business decides to move to or expand in an area. In this way, investing in state and local infrastructure can lead to job creation in the area. Relatedly, businesses may decide not to move to, or to move away from an area, due to an unsafe, unreliable water supply, resulting in job loss and job opportunity loss.

[17] Value of Water Campaign, "The Economic Benefits of Investing in Water Infrastructure", March 2017, <http://thevalueofwater.org/sites/default/files/Economic%20Impact%20of%20Investing%20in%20Water%20Infrastructure_VOW_FINAL_pages.pdf>.

- **Supporting Water-Dependent Businesses:** Businesses that produce goods and services with water as an essential input rely on clean, dependable and relatively affordable drinking water, wastewater and stormwater services. Water-dependent businesses, such as hotels (which rely on water for laundry, food services and guest use), restaurants, universities and pharmaceutical manufacturers (water acts a crucial raw input and solvent in the production process), benefit from improvements in water system efficiency and reliability. Industrial and manufacturing sectors also require water for production, irrigation, material processing, cooling and/or washing and cleaning. Disruptions in water services could have serious impacts; for instance, a brief water-related shutdown at a manufacturing plant could jeopardize all material that is in production for an entire quarter.[18] [19] However, growth in these water-dependent businesses will stimulate growth in other sectors.

- **Preventing Service Disruptions:** Even a temporary disruption in water service can have a large impact on business sales; without access to water, many industries must effectively halt production. The average business in the U.S. loses $230 in sales per employee for every day of water service disruption, with this cost increasing to up to $5,800 per employee (a 75 percent decline) in industries that are heavily reliant on water. On the national level, a one-day disruption in water service would result in an aggregate daily loss of $43.5 billion in sales and $22.5 billion in GDP.[20] [21] [22]

- **Supporting Recreational Industries:** Water and wastewater systems that prevent the contamination of water sources in the state provide a valuable service to many of the recreational industries that depend on New Jersey's waterways. These industries generate substantial economic activity to the state, with the recreational boating and fishing industry alone employing over 150,000 people and generating over $70 billion in spending per year.[23] [24]

- **Improving Resilience:** Large storms illustrated the poor resilience of the state's drinking water, wastewater and stormwater systems when faced with energy loss and flooding. In the City of Paterson alone, over 140 properties were flooded as a result of Hurricane Irene and Tropical Storm Lee.[25] With climate change increasing the frequency of major storms, it will be increasingly important to improve drinking water, wastewater and stormwater systems in order to reduce the number of combined sewer overflows and subsequent flooding, and mitigate damage during extreme weather events.

[18] The Pacific Institute, "Water Scarcity & Climate Change: Growing Risks for Businesses and Investors", Feb. 2009, <http://pacinst.org/reports/business_water_climate/full_report.pdf>.

[19] Marc Levinson et al., "Watching water: A guide to evaluating corporate risks in a thirsty world," JPMorgan Global Equity Research, March 31, 2008.

[20] Federal Emergency Management Agency. 2011. Benefit-Cost Analysis Re-engineering (BCAR) Development of Standard Economic Values.

[21] Aubuchon, C. and K. Morley. 2012. Lessons from Short-term Supply Disruptions: Providing Confidence and Context to FEMA's Methodology. EPA Contract Number EP-W-10-002.

[22] Value of Water Campaign, "The Economic Benefits of Investing in Water Infrastructure", March 2017, <http://thevalueofwater.org/sites/default/files/Economic%20Impact%20of%20Investing%20in%20Water%20Infrastructure_VOW_FINAL_pages.pdf>.

[23] Environmental Protection Agency. 2012. The Importance of Water to the US Economy, Part I: Background Report. Office of Water, US Environmental Protection Agency. September 2012.

[24] Value of Water Campaign, "The Economic Benefits of Investing in Water Infrastructure", March 2017, <http://thevalueofwater.org/sites/default/files/Economic%20Impact%20of%20Investing%20in%20Water%20Infrastructure_VOW_FINAL_pages.pdf>.

[25] Malinconico, Joe. "Paterson ready to approve 11 buyouts on city's north side." Paterson Press, May 27, 2013. Accessed April 9, 2014. <http://www.northjersey.com/news/paterson-ready-toapprove-11-flood-buyouts-on-city-s-north-side-1.565713>.

- **Fire Safety:** Many cities in New Jersey rely on old water pipes for drinking water as well as fire suppression, and therefore interruption of water service is a major concern for fire departments. The city of Hoboken is emblematic of many of the challenges New Jersey cities face, with high population density and aging buildings, most of which date from the early 20th century through World War II, meaning that they do not have the most up-to-date fire suppression systems available. Hoboken residents are therefore heavily dependent on the city's ability to respond effectively to a fire. Since pipe age is the largest contributing factor to water main breaks in Hoboken, improving the quality of water infrastructure systems will reduce interruptions in water service and will therefore allow fire departments to respond quickly and effectively in case of fire.[26]

- **Preventing Illness:** The safety of the water that we drink and use on a daily basis is paramount in reducing water-borne illness. A single disease outbreak associated with inadequately treated water is estimated to cost over $100 million in medical costs alone.[27]

- **A Cleaner Environment:** By improving drinking water, wastewater and stormwater treatment facilities and networks, New Jersey can make sure that bodies of water remain free of contamination, wastewater and stormwater are disposed of appropriately, and these critical systems do not overflow and flood local areas. This will result in a cleaner environment, which can improve residents' health, and improve their quality of life by providing places for recreation and wildlife.

[26] New Jersey Future, "Ripple Effects: The State of Water Infrastructure in New Jersey Cities and Why it Matters", May 2014, <https://www.jerseywaterworks.org/wp-content/uploads/2016/01/RIPPLE-EFFECTS-Final.pdf.pdf>.

[27] Corso, P. et al. 2003. Cost of Illness in the 1993 Waterborne Cryptosporidium Outbreak, Milwaukee, Wisconsin. Emerging Infectious Diseases, 9(4), 427.

Benefits of Investment Well Documented: Support from Economic Literature

The overall economic benefits of infrastructure investment to a state's economic activity are well documented in the economics literature. There are numerous studies that have found a positive correlation between water and other infrastructure investment and economic development.

Some of the main findings include:

- If the U.S. closed its' annual investment gap in water infrastructure needs, the national economy would gain $222 billion in economic activity, 1.3 million jobs, and $75 billion in wages each year, according to a 2017 study by the Value of Water Campaign.[28]

- According to a 2012 study, **each $1 invested in water and sewer infrastructure generates $2.03 in local, state and federal tax revenue over 20 years**.[29]

- A 2016 analysis of the Clean Water and Drinking Water State Revolving Fund programs found that **every $1 million in federal water infrastructure spending generates 16.5 jobs, at an average pay of $60,000, and $2.95 million in economic output**.[30]

- Employment in the drinking water, wastewater and stormwater infrastructure sectors has a ripple effect across the economy; a 2008 study that reviewed 310 economic studies, books, and government and non-government reports found that **increasing water and sewer infrastructure investment by one dollar increases GDP by $6.35 in the long-run**. Additionally, **an additional dollar of water and sewer industry revenue results in a $2.62 revenue increase in all industries each year**, and **adding one job in water and sewer infrastructure creates 3.68 jobs in the national economy**.[31]

- Economist David Aschauer analyzed the country's economic and public infrastructure growth between 1949 and 1985, and found that **a 10 percent increase in public-sector capital stock increased productivity growth by almost 4 percent**.[32]

- A 2007 report evaluated over 75 studies which examined the relationship between public infrastructure investment and economic growth, and found a general consensus that public capital investment enhances growth.[33]

[28] Value of Water Campaign, "The Economic Benefits of Investing in Water Infrastructure", March 2017, <http://thevalueofwater.org/sites/default/files/Economic%20Impact%20of%20Investing%20in%20Water%20Infrastructure_VOW_FINAL_pages.pdf>.

[29] Cohen, I., Freiling, T., & Robinson, E. (2012). The Economic Impact and Financing of Infrastructure Spending. <http://www.wm.edu/as/publicpolicy/documents/prs/aed.pdf>.

[30] Water Environment Federation and WateReuse Association. (2016). The Economic, Job Creation, and Federal Tax Revenue Benefits of Increased Funding for the State Revolving Fund Programs. <https://watereuse.org/wp-content/uploads/2015/01/WEF-WRA-SRF-Economic-Impact-Study-ReportApril-29-2016.pdf>.

[31] Krop, R.A., Hernick, C., Frantz, C. (2008). Local Government Investment in Municipal water and Sewer Infrastructure: Adding Value to the National Economy. <https://www.cadmusgroup.com/wpcontent/uploads/2012/11/Krop-et-al-2008-LocalGovtInvtInMunicipalWaterandSewerInfrastructure.pdf>.

[32] David Aschauer, "Is Public Expenditure Productive?" *Journal of Monetary Economics*, Vol. 23, 177-200, 1989.

[33] Ward Romp and Jakob de Haan, "Public Capital and Economic Growth: A Critical Survey," *Perspektiven der Wirtschartspolitik*, Vol. 8, 2007, 6-52.

- A study by Dr. Alicia Munnell of the Federal Reserve Bank of Boston concluded that states that invested more in infrastructure tended to have greater output, more private investment and more employment growth.[34] Her work found that **a 1 percent increase in public capital will raise national output by 0.15 percent**[35]. She further notes that the major impact of public capital output is from investment in highways and water and sewer systems. Other public capital investments, such as school buildings and hospitals, had virtually no measureable impact on private production.[36] Munnell also concludes that public capital and infrastructure investment have a significant positive impact on a state's private employment growth and private sector output.

- Many more recent studies also found that public infrastructure spending has a positive effect on productivity and therefore on economic growth.[37] While the specific impacts varied by study, the general findings are than an increase in the value of existing current capital stock would increase productivity growth.[38]

- Several studies examined the impact of infrastructure spending during the Great Recession. A 2009 study by the Council of Economic Advisers found that a dollar in infrastructure investment would result in $1.50 in GDP growth during the recession,[39] Moody's estimated the effect at $1.60,[40] and the Congressional Budget Office found that that the impact ranged from $1.00 to 2.50.[41] While this impact will be smaller during times of economic growth, there is still a positive effect from infrastructure investment. At the beginning of 2015 during the economic recovery, Moody's estimated that an additional dollar of infrastructure investment would increase GDP by $0.86, with that effect shrinking as the economy moves closer to full employment.[42]

Overall, the benefits from investing to maintain and improve a state's drinking water, wastewater and stormwater networks are greater than the cost, and can help support economic growth throughout the economy for years to come.

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[34] Alicia Munnell, "How Does Public Infrastructure Affect Regional Economic Performance," New England Economic Review, September/October 1990.

[35] Munnell's elasticity for private capital is 0.31, so that a 1 percent increase in private capital will raise national output by 0.31 percent. This is in line with other studies of returns from private capital investment.

[36] Munnell says she is not implying that government-provided education and health services have no effect on productivity, but rather "the stock of buildings ... may not be the best indicator of the quality of education services; teachers' salaries, for example, might be a better measure."

[37] James Heintz, "The impact of public capital on the U.S. private economy: new evidence and analysis," *International Review of Applied Economics*, Vol. 24 (5), 2010, 619-632. Jeffrey Thompson, "Prioritizing Approaches to Economic Development in New England: Skills, Infrastructure, and Tax Incentives," Political Economy Research Institute, University of Massachusetts, Amherst, August 2010 provides a summary of recent articles.

[38] Thompson, 2010.

[39] Christina Romer and Jared Bernstein, "The Job Impact of The American Recovery and Reinvestment Plan," Council of Economic Advisers, January 9, 2009.

[40] Moody's Analytics, cited in Alan S. Blinder and Mark Zandi, "The Financial Crisis: Lessons for the Next One," Center on Budget and Policy Priorities, October 15, 2015, http://www.cbpp.org/research/economy/the-financial-crisislessons-for-the-next-one.

[41] Congressional Budget Office, "Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output," April 2010-June 2010.

[42] McNichol, Elizabeth. "It's Time for States to Invest in Infrastructure", Aug. 10, 2017, Center on Budget and Policy Priorities, <https://www.cbpp.org/research/state-budget-and-tax/its-time-for-states-to-invest-in-infrastructure>.

V. The Economic Impacts of a $1 Billion Increase in Drinking Water, Wastewater and Stormwater Capital Investment on Major Industry Sectors

A $1 billion increase in drinking water, wastewater and stormwater investment will have a significant immediate effect on all sectors of the state economy, which will impact every sector in the New Jersey economy. This is the demand that is created when economic activity is stimulated across the state.

In this section, the economic impact of a $1 billion increase in drinking water, wastewater and stormwater investment is calculated for each of the 19 major industry sectors in New Jersey.



The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Agriculture, forestry, fishing, and hunting

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Agriculture, Forestry, Fishing, and Hunting sector:

- Nearly $2 million in additional economic output
- A $1.0 million increase in gross state product (GSP)
- Supporting or creating an additional 29 jobs. These workers will earn $500 thousand in wages.
- $93.5 thousand in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$1.6 million
Value Added (contribution to GSP)	$1.0 million
Employment	29 people
Total Payroll	$500.0 thousand
Total Tax Revenues	$93.5 thousand
State Payroll Tax Contribution	$4.2 thousand
Federal Payroll Tax Contribution	$38.3 thousand
State Individual and Corporate Income Tax Contribution	$34.8 thousand
Sales & Use Tax Contribution	$16.2 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Agriculture, forestry, fishing, and hunting in New Jersey contributed $842.0 million to state economic activity in 2017, accounting for 0.1% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $1.5 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 922 establishments and sole proprietorships in New Jersey with an existing payroll valued at $373.6 million. These businesses contribute an estimated $31.7 million in state and federal payroll taxes. Individuals working in this sector earn an average of $32,304 each year. The Agriculture, Forestry, Fishing and Hunting sector comprises establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$1.5 billion	18	0.1%
Value Added (contribution to GSP)	$842.0 million	18	0.1%
Establishments	922 businesses	17	0.4%
Employment	11,566 people	18	0.3%
Average Annual Salary	$32,304	15	
Total Payroll	$373.6 million	18	0.2%
Total Tax Revenues	$59.3 million	18	0.1%
State Payroll Tax Contribution	$3.1 million	18	0.2%
Federal Payroll Tax Contribution	$28.6 million	18	0.2%
State Income Tax Contribution	$13.9 million	18	0.1%
Sales & Use Tax Contribution	$13.6 million	18	0.1%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Mining

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Mining sector:

- Nearly $2 million in additional economic output
- A $1.0 million increase in gross state product (GSP)
- Supporting or creating an additional 4 jobs. These workers will earn $300 thousand in wages.
- $66.0 thousand in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$1.7 million
Value Added (contribution to GSP)	$1.0 million
Employment	4 people
Total Payroll	$300.0 thousand
Total Tax Revenues	$66.0 thousand
State Payroll Tax Contribution	$2.5 thousand
Federal Payroll Tax Contribution	$23.0 thousand
State Individual and Corporate Income Tax Contribution	$24.4 thousand
Sales & Use Tax Contribution	$16.2 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Mining in New Jersey contributed $317.0 million to state economic activity in 2017, accounting for 0.1% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $551.1 million, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 85 establishments and sole proprietorships in New Jersey with an existing payroll valued at $90.3 million. These businesses contribute an estimated $7.7 million in state and federal payroll taxes. Individuals working in this sector earn an average of $75,730 each year. The Mining, Quarrying, and Oil and Gas Extraction sector comprises establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases, such as natural gas.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$551.1 million	19	0.1%
Value Added (contribution to GSP)	$317.0 million	19	0.1%
Establishments	85 businesses	19	0.04%
Employment	1,193 people	19	0.03%
Average Annual Salary	$75,730	7	
Total Payroll	$90.3 million	19	0.04%
Total Tax Revenues	$20.1 million	19	0.05%
State Payroll Tax Contribution	$758.9 thousand	19	0.04%
Federal Payroll Tax Contribution	$6.9 million	19	0.04%
State Income Tax Contribution	$7.3 million	19	0.05%
Sales & Use Tax Contribution	$5.1 million	19	0.1%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Utilities

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Utilities sector:

- $19 million in additional economic output
- A $10.0 million increase in gross state product (GSP)
- Supporting or creating an additional 23 jobs. These workers will earn nearly $3 million in wages.
- $677.5 thousand in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$19.0 million
Value Added (contribution to GSP)	$10.0 million
Employment	23 people
Total Payroll	$2.7 million
Total Tax Revenues	$677.5 thousand
State Payroll Tax Contribution	$22.7 thousand
Federal Payroll Tax Contribution	$206.6 thousand
State Individual and Corporate Income Tax Contribution	$286.5 thousand
Sales & Use Tax Contribution	$161.8 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Utilities in New Jersey contributed $9.1 billion to state economic activity in 2017, accounting for 1.5% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $15.8 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 371 establishments and sole proprietorships in New Jersey with an existing payroll valued at $2.5 billion. These businesses contribute an estimated $212.1 million in state and federal payroll taxes. Individuals working in this sector earn an average of $124,897 each year. The Utilities sector comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$15.8 billion	15	1.5%
Value Added (contribution to GSP)	$9.1 billion	15	1.5%
Establishments	371 businesses	18	0.2%
Employment	20,003 people	17	0.6%
Average Annual Salary	$124,897	2	
Total Payroll	$2.5 billion	16	1.1%
Total Tax Revenues	$614.2 million	16	1.4%
State Payroll Tax Contribution	$21.0 million	16	1.1%
Federal Payroll Tax Contribution	$191.1 million	16	1.1%
State Income Tax Contribution	$254.7 million	13	1.6%
Sales & Use Tax Contribution	$147.4 million	15	1.5%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays...

Construction

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Construction sector:

- Over $1 billion in additional economic output
- A $607.6 million increase in gross state product (GSP)
- Supporting or creating an additional 7,578 jobs. These workers will earn $461 million in wages.
- $88.2 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$1.0 billion
Value Added (contribution to GSP)	$607.6 million
Employment	7,578 people
Total Payroll	$461.0 million
Total Tax Revenues	$88.2 million
State Payroll Tax Contribution	$3.9 million
Federal Payroll Tax Contribution	$35.3 million
State Individual and Corporate Income Tax Contribution	$39.2 million
Sales & Use Tax Contribution	$9.8 million

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Construction in New Jersey contributed $23.7 billion to state economic activity in 2017, accounting for 4.0% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $41.1 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 21,389 establishments and sole proprietorships in New Jersey with an existing payroll valued at $11.0 billion. These businesses contribute an estimated $935.6 million in state and federal payroll taxes. Individuals working in this sector earn an average of $70,983 each year. The Construction sector comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems).

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$41.1 billion	8	4.0%
Value Added (contribution to GSP)	$23.7 billion	8	4.0%
Establishments	21,389 businesses	5	9.2%
Employment	155,246 people	10	4.3%
Average Annual Salary	$70,983	8	
Total Payroll	$11.0 billion	9	5.0%
Total Tax Revenues	$2.1 billion	9	4.8%
State Payroll Tax Contribution	$92.6 million	9	5.0%
Federal Payroll Tax Contribution	$843.0 million	9	5.0%
State Income Tax Contribution	$802.7 million	8	5.0%
Sales & Use Tax Contribution	$382.9 million	8	4.0%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Manufacturing

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Manufacturing sector:

- Over $220 million in additional economic output
- A $78.9 million increase in gross state product (GSP)
- Supporting or creating an additional 624 jobs. These workers will earn nearly $38 million in wages.
- $7.6 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$220.1 million
Value Added (contribution to GSP)	$78.9 million
Employment	624 people
Total Payroll	$37.7 million
Total Tax Revenues	$7.6 million
State Payroll Tax Contribution	$316.7 thousand
Federal Payroll Tax Contribution	$2.9 million
State Individual and Corporate Income Tax Contribution	$3.1 million
Sales & Use Tax Contribution	$1.3 million

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Manufacturing in New Jersey contributed $49.3 billion to state economic activity in 2017, accounting for 8.3% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $85.7 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 7,341 establishments and sole proprietorships in New Jersey with an existing payroll valued at $14.5 billion. These businesses contribute an estimated $1.2 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $66,432 each year. The Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$85.7 billion	3	8.3%
Value Added (contribution to GSP)	$49.3 billion	3	8.3%
Establishments	7,341 businesses	12	3.2%
Employment	218,742 people	7	6.0%
Average Annual Salary	$66,432	9	
Total Payroll	$14.5 billion	6	6.6%
Total Tax Revenues	$3.1 billion	6	7.0%
State Payroll Tax Contribution	$122.1 million	6	6.6%
Federal Payroll Tax Contribution	$1.1 billion	6	6.6%
State Income Tax Contribution	$1.1 billion	6	6.7%
Sales & Use Tax Contribution	$797.5 million	3	8.3%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Wholesale trade

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Wholesale Trade sector:

- Over $84 million in additional economic output
- A $57.0 million increase in gross state product (GSP)
- Supporting or creating an additional 308 jobs. These workers will earn nearly $24 million in wages.
- $5.5 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$84.1 million
Value Added (contribution to GSP)	$57.0 million
Employment	308 people
Total Payroll	$23.7 million
Total Tax Revenues	$5.5 million
State Payroll Tax Contribution	$199.1 thousand
Federal Payroll Tax Contribution	$1.8 million
State Individual and Corporate Income Tax Contribution	$2.5 million
Sales & Use Tax Contribution	$922.0 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Wholesale trade in New Jersey contributed $48.2 billion to state economic activity in 2017, accounting for 8.1% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $83.7 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 13,970 establishments and sole proprietorships in New Jersey with an existing payroll valued at $25.4 billion. These businesses contribute an estimated $2.2 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $96,034 each year. The Wholesale Trade sector comprises establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$83.7 billion	4	8.1%
Value Added (contribution to GSP)	$48.2 billion	4	8.1%
Establishments	13,970 businesses	8	6.0%
Employment	264,210 people	6	7.3%
Average Annual Salary	$96,034	5	
Total Payroll	$25.4 billion	3	11.6%
Total Tax Revenues	$5.1 billion	2	11.5%
State Payroll Tax Contribution	$213.1 million	3	11.6%
Federal Payroll Tax Contribution	$1.9 billion	3	11.6%
State Income Tax Contribution	$2.2 billion	3	13.5%
Sales & Use Tax Contribution	$778.9 million	4	8.1%

Retail trade

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Retail Trade sector:

- Nearly $83 million in additional economic output
- A $54.9 million increase in gross state product (GSP)
- Supporting or creating an additional 906 jobs. These workers will earn nearly $28 million in wages.
- $4.3 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$82.8 million
Value Added (contribution to GSP)	$54.9 million
Employment	906 people
Total Payroll	$27.7 million
Total Tax Revenues	$4.3 million
State Payroll Tax Contribution	$232.7 thousand
Federal Payroll Tax Contribution	$2.1 million
State Individual and Corporate Income Tax Contribution	$1.0 million
Sales & Use Tax Contribution	$888.0 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

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SECTOR OVERVIEW

Retail trade in New Jersey contributed $35.2 billion to state economic activity in 2017, accounting for 6.0% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $61.3 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 31,446 establishments and sole proprietorships in New Jersey with an existing payroll valued at $13.9 billion. These businesses contribute an estimated $1.2 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $29,860 each year. The Retail Trade sector comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$61.3 billion	7	6.0%
Value Added (contribution to GSP)	$35.2 billion	7	6.0%
Establishments	31,446 businesses	1	13.6%
Employment	464,603 people	2	12.8%
Average Annual Salary	$29,860	18	
Total Payroll	$13.9 billion	7	6.3%
Total Tax Revenues	$2.3 billion	8	5.1%
State Payroll Tax Contribution	$116.5 million	7	6.3%
Federal Payroll Tax Contribution	$1.1 billion	7	6.3%
State Income Tax Contribution	$527.4 million	12	3.3%
Sales & Use Tax Contribution	$569.9 million	7	6.0%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Transportation and warehousing

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Transportation and Warehousing sector:

- Nearly $48 million in additional economic output
- A $23.5 million increase in gross state product (GSP)
- Supporting or creating an additional 269 jobs. These workers will earn nearly $14 million in wages.
- $2.4 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$47.9 million
Value Added (contribution to GSP)	$23.5 million
Employment	269 people
Total Payroll	$13.9 million
Total Tax Revenues	$2.4 million
State Payroll Tax Contribution	$116.8 thousand
Federal Payroll Tax Contribution	$1.1 million
State Individual and Corporate Income Tax Contribution	$876.4 thousand
Sales & Use Tax Contribution	$380.1 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Transportation and warehousing in New Jersey contributed $20.9 billion to state economic activity in 2017, accounting for 3.5% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $36.3 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 7,516 establishments and sole proprietorships in New Jersey with an existing payroll valued at $8.8 billion. These businesses contribute an estimated $749.0 million in state and federal payroll taxes. Individuals working in this sector earn an average of $53,653 each year. The Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$36.3 billion	11	3.5%
Value Added (contribution to GSP)	$20.9 billion	11	3.5%
Establishments	7,516 businesses	11	3.2%
Employment	164,419 people	9	4.5%
Average Annual Salary	$53,653	11	
Total Payroll	$8.8 billion	11	4.0%
Total Tax Revenues	$1.6 billion	12	3.7%
State Payroll Tax Contribution	$74.1 million	11	4.0%
Federal Payroll Tax Contribution	$674.9 million	11	4.0%
State Income Tax Contribution	$535.7 million	11	3.3%
Sales & Use Tax Contribution	$337.6 million	11	3.5%

Information

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Information sector:

- Over $40 million in additional economic output
- A $23.2 million increase in gross state product (GSP)
- Supporting or creating an additional 100 jobs. These workers will earn over $7 million in wages.
- $1.9 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$40.4 million
Value Added (contribution to GSP)	$23.2 million
Employment	100 people
Total Payroll	$7.1 million
Total Tax Revenues	$1.9 million
State Payroll Tax Contribution	$59.6 thousand
Federal Payroll Tax Contribution	$543.2 thousand
State Individual and Corporate Income Tax Contribution	$965.5 thousand
Sales & Use Tax Contribution	$375.3 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Information in New Jersey contributed $22.6 billion to state economic activity in 2017, accounting for 3.8% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $39.3 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 3,821 establishments and sole proprietorships in New Jersey with an existing payroll valued at $9.1 billion. These businesses contribute an estimated $776.1 million in state and federal payroll taxes. Individuals working in this sector earn an average of $105,326 each year. The Information sector comprises establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$39.3 billion	10	3.8%
Value Added (contribution to GSP)	$22.6 billion	10	3.8%
Establishments	3,821 businesses	14	1.6%
Employment	86,792 people	14	2.4%
Average Annual Salary	$105,326	4	
Total Payroll	$9.1 billion	10	4.2%
Total Tax Revenues	$2.0 billion	11	4.5%
State Payroll Tax Contribution	$76.8 million	10	4.2%
Federal Payroll Tax Contribution	$699.3 million	10	4.2%
State Income Tax Contribution	$838.0 million	7	5.2%
Sales & Use Tax Contribution	$365.4 million	10	3.8%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Finance and insurance

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Finance and Insurance sector:

- Nearly $106 million in additional economic output
- A $54.0 million increase in gross state product (GSP)
- Supporting or creating an additional 370 jobs. These workers will earn over $24 million in wages.
- $7.0 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$105.7 million
Value Added (contribution to GSP)	$54.0 million
Employment	370 people
Total Payroll	$24.1 million
Total Tax Revenues	$7.0 million
State Payroll Tax Contribution	$202.4 thousand
Federal Payroll Tax Contribution	$1.8 million
State Individual and Corporate Income Tax Contribution	$4.1 million
Sales & Use Tax Contribution	$873.5 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Finance and insurance in New Jersey contributed $40.1 billion to state economic activity in 2017, accounting for 6.8% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $69.8 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 11,780 establishments and sole proprietorships in New Jersey with an existing payroll valued at $23.5 billion. These businesses contribute an estimated $2.0 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $118,229 each year. The Finance and Insurance sector comprises establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$69.8 billion	6	6.8%
Value Added (contribution to GSP)	$40.1 billion	6	6.8%
Establishments	11,780 businesses	9	5.1%
Employment	198,374 people	8	5.5%
Average Annual Salary	$118,229	3	
Total Payroll	$23.5 billion	4	10.7%
Total Tax Revenues	$4.8 billion	3	10.9%
State Payroll Tax Contribution	$197.0 million	4	10.7%
Federal Payroll Tax Contribution	$1.8 billion	4	10.7%
State Income Tax Contribution	$2.2 billion	2	13.6%
Sales & Use Tax Contribution	$649.1 million	6	6.8%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Real estate and rental and leasing

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Real Estate and Rental and Leasing sector:

- $145 million in additional economic output
- A $101.6 million increase in gross state product (GSP)
- Supporting or creating an additional 835 jobs. These workers will earn nearly $22 million in wages.
- $11.5 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$145.0 million
Value Added (contribution to GSP)	$101.6 million
Employment	835 people
Total Payroll	$21.8 million
Total Tax Revenues	$11.5 million
State Payroll Tax Contribution	$183.1 thousand
Federal Payroll Tax Contribution	$1.7 million
State Individual and Corporate Income Tax Contribution	$8.0 million
Sales & Use Tax Contribution	$1.6 million

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Real estate and rental and leasing in New Jersey contributed $101.9 billion to state economic activity in 2017, accounting for 17.2% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $177.2 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 9,108 establishments and sole proprietorships in New Jersey with an existing payroll valued at $3.5 billion. These businesses contribute an estimated $295.0 million in state and federal payroll taxes. Individuals working in this sector earn an average of $59,049 each year. The Real Estate and Rental and Leasing sector comprises establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$177.2 billion	1	17.2%
Value Added (contribution to GSP)	$101.9 billion	1	17.2%
Establishments	9,108 businesses	10	3.9%
Employment	58,847 people	16	1.6%
Average Annual Salary	$59,049	10	
Total Payroll	$3.5 billion	15	1.6%
Total Tax Revenues	$2.5 billion	7	5.7%
State Payroll Tax Contribution	$29.2 million	15	1.6%
Federal Payroll Tax Contribution	$265.8 million	15	1.6%
State Income Tax Contribution	$567.3 million	10	3.5%
Sales & Use Tax Contribution	$1.6 billion	1	17.2%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Professional, scientific, and technical services

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Professional, Scientific, and Technical Services sector:

- $65 million in additional economic output
- A $41.4 million increase in gross state product (GSP)
- Supporting or creating an additional 372 jobs. These workers will earn over $26 million in wages.
- $5.7 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$65.0 million
Value Added (contribution to GSP)	$41.4 million
Employment	372 people
Total Payroll	$26.3 million
Total Tax Revenues	$5.7 million
State Payroll Tax Contribution	$220.9 thousand
Federal Payroll Tax Contribution	$2.0 million
State Individual and Corporate Income Tax Contribution	$2.8 million
Sales & Use Tax Contribution	$669.7 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Professional, scientific, and technical services in New Jersey contributed $52.7 billion to state economic activity in 2017, accounting for 8.9% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $91.7 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 29,233 establishments and sole proprietorships in New Jersey with an existing payroll valued at $30.0 billion. These businesses contribute an estimated $2.5 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $91,282 each year. The Professional, Scientific, and Technical Services sector comprises establishments that specialize in performing professional, scientific, and technical activities for others.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$91.7 billion	2	8.9%
Value Added (contribution to GSP)	$52.7 billion	2	8.9%
Establishments	29,233 businesses	2	12.6%
Employment	328,347 people	3	9.0%
Average Annual Salary	$91,282	6	
Total Payroll	$30.0 billion	1	13.7%
Total Tax Revenues	$5.9 billion	1	13.3%
State Payroll Tax Contribution	$251.8 million	1	13.7%
Federal Payroll Tax Contribution	$2.3 billion	1	13.7%
State Income Tax Contribution	$2.5 billion	1	15.5%
Sales & Use Tax Contribution	$852.8 million	2	8.9%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Management of companies and enterprises

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Management of Companies and Enterprises sector:

- Over $21 million in additional economic output
- A $12.8 million increase in gross state product (GSP)
- Supporting or creating an additional 65 jobs. These workers will earn nearly $8 million in wages.
- $1.7 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$21.3 million
Value Added (contribution to GSP)	$12.8 million
Employment	65 people
Total Payroll	$7.5 million
Total Tax Revenues	$1.7 million
State Payroll Tax Contribution	$63.0 thousand
Federal Payroll Tax Contribution	$573.8 thousand
State Individual and Corporate Income Tax Contribution	$854.2 thousand
Sales & Use Tax Contribution	$207.0 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Management of companies and enterprises in New Jersey contributed $18.1 billion to state economic activity in 2017, accounting for 3.1% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $31.5 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 1,502 establishments and sole proprietorships in New Jersey with an existing payroll valued at $17.1 billion. These businesses contribute an estimated $1.5 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $137,717 each year. The Management of Companies and Enterprises sector comprises (1) establishments that hold the securities of (or other equity interests in) companies and enterprises for the purpose of owning a controlling interest or influencing management decisions or (2) establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision making role of the company or enterprise.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$31.5 billion	12	3.1%
Value Added (contribution to GSP)	$18.1 billion	12	3.1%
Establishments	1,502 businesses	16	0.6%
Employment	124,389 people	12	3.4%
Average Annual Salary	$137,717	1	
Total Payroll	$17.1 billion	5	7.8%
Total Tax Revenues	$3.4 billion	5	7.6%
State Payroll Tax Contribution	$143.9 million	5	7.8%
Federal Payroll Tax Contribution	$1.3 billion	5	7.8%
State Income Tax Contribution	$1.6 billion	4	10.2%
Sales & Use Tax Contribution	$292.8 million	12	3.1%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Administrative and waste management services

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Administrative and Waste Management Services sector:

- Over $33 million in additional economic output
- A $21.5 million increase in gross state product (GSP)
- Supporting or creating an additional 382 jobs. These workers will earn nearly $14 million in wages.
- $2.2 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$33.2 million
Value Added (contribution to GSP)	$21.5 million
Employment	382 people
Total Payroll	$13.6 million
Total Tax Revenues	$2.2 million
State Payroll Tax Contribution	$114.2 thousand
Federal Payroll Tax Contribution	$1.0 million
State Individual and Corporate Income Tax Contribution	$665.2 thousand
Sales & Use Tax Contribution	$347.8 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Administrative and waste management services in New Jersey contributed $22.7 billion to state economic activity in 2017, accounting for 3.8% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $39.5 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 14,106 establishments and sole proprietorships in New Jersey with an existing payroll valued at $13.4 billion. These businesses contribute an estimated $1.1 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $41,213 each year. The Administrative and Support and Waste Management and Remediation Services sector comprises establishments performing routine support activities for the day-to-day operations of other organizations.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$39.5 billion	9	3.8%
Value Added (contribution to GSP)	$22.7 billion	9	3.8%
Establishments	14,106 businesses	7	6.1%
Employment	326,154 people	4	9.0%
Average Annual Salary	$41,213	13	
Total Payroll	$13.4 billion	8	6.1%
Total Tax Revenues	$2.1 billion	10	4.7%
State Payroll Tax Contribution	$112.9 million	8	6.1%
Federal Payroll Tax Contribution	$1.0 billion	8	6.1%
State Income Tax Contribution	$568.7 million	9	3.5%
Sales & Use Tax Contribution	$367.4 million	9	3.8%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays...

Educational services

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Educational Services sector:

- Nearly $11 million in additional economic output
- A $6.4 million increase in gross state product (GSP)
- Supporting or creating an additional 145 jobs. These workers will earn nearly $5 million in wages.
- $718.1 thousand in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$10.5 million
Value Added (contribution to GSP)	$6.4 million
Employment	145 people
Total Payroll	$4.7 million
Total Tax Revenues	$718.1 thousand
State Payroll Tax Contribution	$39.5 thousand
Federal Payroll Tax Contribution	$359.5 thousand
State Individual and Corporate Income Tax Contribution	$215.6 thousand
Sales & Use Tax Contribution	$103.5 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Educational services in New Jersey contributed $6.2 billion to state economic activity in 2017, accounting for 1.0% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $10.7 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 3,866 establishments and sole proprietorships in New Jersey with an existing payroll valued at $4.2 billion. These businesses contribute an estimated $359.7 million in state and federal payroll taxes. Individuals working in this sector earn an average of $38,770 each year. The Educational Services sector comprises establishments that provide instruction and training in a wide variety of subjects.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$10.7 billion	16	1.0%
Value Added (contribution to GSP)	$6.2 billion	16	1.0%
Establishments	3,866 businesses	13	1.7%
Employment	109,275 people	13	3.0%
Average Annual Salary	$38,770	14	
Total Payroll	$4.2 billion	14	1.9%
Total Tax Revenues	$621.9 million	15	1.4%
State Payroll Tax Contribution	$35.6 million	14	1.9%
Federal Payroll Tax Contribution	$324.1 million	14	1.9%
State Income Tax Contribution	$162.5 million	16	1.0%
Sales & Use Tax Contribution	$99.8 million	16	1.0%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays…

Health care and social assistance

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Health Care and Social Assistance sector:

- Nearly $90 million in additional economic output
- A $53.8 million increase in gross state product (GSP)
- Supporting or creating an additional 772 jobs. These workers will earn nearly $39 million in wages.
- $6.2 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$89.6 million
Value Added (contribution to GSP)	$53.8 million
Employment	772 people
Total Payroll	$38.9 million
Total Tax Revenues	$6.2 million
State Payroll Tax Contribution	$326.8 thousand
Federal Payroll Tax Contribution	$3.0 million
State Individual and Corporate Income Tax Contribution	$2.0 million
Sales & Use Tax Contribution	$870.2 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Health care and social assistance in New Jersey contributed $45.9 billion to state economic activity in 2017, accounting for 7.8% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $79.8 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 27,555 establishments and sole proprietorships in New Jersey with an existing payroll valued at $28.8 billion. These businesses contribute an estimated $2.4 billion in state and federal payroll taxes. Individuals working in this sector earn an average of $49,191 each year. The Health Care and Social Assistance sector comprises establishments providing health care and social assistance for individuals.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$79.8 billion	5	7.8%
Value Added (contribution to GSP)	$45.9 billion	5	7.8%
Establishments	27,555 businesses	3	11.9%
Employment	584,649 people	1	16.1%
Average Annual Salary	$49,191	12	
Total Payroll	$28.8 billion	2	13.1%
Total Tax Revenues	$4.7 billion	4	10.6%
State Payroll Tax Contribution	$241.6 million	2	13.1%
Federal Payroll Tax Contribution	$2.2 billion	2	13.1%
State Income Tax Contribution	$1.5 billion	5	9.5%
Sales & Use Tax Contribution	$742.2 million	5	7.8%

Arts, entertainment, and recreation

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Arts, Entertainment, and Recreation sector:

- Nearly $9 million in additional economic output
- A $5.1 million increase in gross state product (GSP)
- Supporting or creating an additional 153 jobs. These workers will earn over $3 million in wages.
- $530.6 thousand in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$8.8 million
Value Added (contribution to GSP)	$5.1 million
Employment	153 people
Total Payroll	$3.1 million
Total Tax Revenues	$530.6 thousand
State Payroll Tax Contribution	$26.0 thousand
Federal Payroll Tax Contribution	$237.1 thousand
State Individual and Corporate Income Tax Contribution	$184.9 thousand
Sales & Use Tax Contribution	$82.5 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Arts, entertainment, and recreation in New Jersey contributed $5.4 billion to state economic activity in 2017, accounting for 0.9% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $9.4 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 3,614 establishments and sole proprietorships in New Jersey with an existing payroll valued at $2.0 billion. These businesses contribute an estimated $168.9 million in state and federal payroll taxes. Individuals working in this sector earn an average of $31,130 each year. The Arts, Entertainment, and Recreation sector includes a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$9.4 billion	17	0.9%
Value Added (contribution to GSP)	$5.4 billion	17	0.9%
Establishments	3,614 businesses	15	1.6%
Employment	63,917 people	15	1.8%
Average Annual Salary	$31,130	17	
Total Payroll	$2.0 billion	17	0.9%
Total Tax Revenues	$333.5 million	17	0.8%
State Payroll Tax Contribution	$16.7 million	17	0.9%
Federal Payroll Tax Contribution	$152.2 million	17	0.9%
State Income Tax Contribution	$77.2 million	17	0.5%
Sales & Use Tax Contribution	$87.3 million	17	0.9%

The Economic Benefits of a $1 Billion Increase in New Jersey's Investment in Drinking Water, Wastewater and Stormwater Capital Outlays...

Accommodation and Food Services

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Accommodation and Food Services sector:

- Nearly $33 million in additional economic output
- An $18.3 million increase in gross state product (GSP)
- Supporting or creating an additional 423 jobs. These workers will earn nearly $10 million in wages.
- $1.4 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$32.5 million
Value Added (contribution to GSP)	$18.3 million
Employment	423 people
Total Payroll	$9.7 million
Total Tax Revenues	$1.4 million
State Payroll Tax Contribution	$81.5 thousand
Federal Payroll Tax Contribution	$742.0 thousand
State Individual and Corporate Income Tax Contribution	$307.3 thousand
Sales & Use Tax Contribution	$296.0 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Accommodation and Food Services in New Jersey contributed $13.5 billion to state economic activity in 2017, accounting for 2.3% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $23.5 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 20,953 establishments and sole proprietorships in New Jersey with an existing payroll valued at $6.5 billion. These businesses contribute an estimated $555.8 million in state and federal payroll taxes. Individuals working in this sector earn an average of $21,079 each year. The Accommodation and Food Services sector comprises establishments providing customers with lodging and/or reparing meals, snacks, and beverages for immediate consumption.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$23.5 billion	13	2.3%
Value Added (contribution to GSP)	$13.5 billion	13	2.3%
Establishments	20,953 businesses	6	9.0%
Employment	310,558 people	5	8.5%
Average Annual Salary	$21,079	19	
Total Payroll	$6.5 billion	12	3.0%
Total Tax Revenues	$1,000.0 million	13	2.3%
State Payroll Tax Contribution	$55.0 million	12	3.0%
Federal Payroll Tax Contribution	$500.8 million	12	3.0%
State Income Tax Contribution	$225.5 million	14	1.4%
Sales & Use Tax Contribution	$218.8 million	13	2.3%

Other services

A $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment will generate the following economic benefits to the Other Services sector:

- Nearly $38 million in additional economic output
- A $21.1 million increase in gross state product (GSP)
- Supporting or creating an additional 361 jobs. These workers will earn over $14 million in wages.
- $2.0 million in additional tax revenues

	Impact of an Additional $1 Billion
Industry Output	$37.5 million
Value Added (contribution to GSP)	$21.1 million
Employment	361 people
Total Payroll	$14.4 million
Total Tax Revenues	$2.0 million
State Payroll Tax Contribution	$121.0 thousand
Federal Payroll Tax Contribution	$1.1 million
State Individual and Corporate Income Tax Contribution	$436.4 thousand
Sales & Use Tax Contribution	$341.3 thousand

Increasing construction spending will have a positive economic impact on this sector in two ways. The first is through direct purchases from construction firms and suppliers involved in building, maintaining and operating New Jersey's drinking water, wastewater and stormwater infrastructure. The second effect is when employees of these firms spend their wages and make purchases throughout the economy.

* GSP is the value added by an industry to the overall economy. New Jersey's GSP was estimated to be $591.74 billion in 2017. That is the difference between total sales and the intermediate goods. Gross output is the measure of total sales for both intermediate and final goods. New Jersey's gross output in 2017 is estimated to be $1.03 trillion.

SECTOR OVERVIEW

Other services in New Jersey contributed $12.3 billion to state economic activity in 2017, accounting for 2.1% of the state's Gross State Product (GSP).* Total sales in the industry were an estimated $21.4 billion, which includes goods and services for final consumers as well as any inputs sold to other industries.

This sector includes 23,771 establishments and sole proprietorships in New Jersey with an existing payroll valued at $4.9 billion. These businesses contribute an estimated $418.4 million in state and federal payroll taxes. Individuals working in this sector earn an average of $31,758 each year. The Other Services (except Public Administration) sector comprises establishments engaged in providing services not specifically provided for elsewhere in the classification system, including equipment and machinery repairing, promoting or administering religious activities, grantmaking, advocacy, drycleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.

	Current Value	New Jersey Ranking	Percentage of State Total
Industry Output	$21.4 billion	14	2.1%
Value Added (contribution to GSP)	$12.3 billion	14	2.1%
Establishments	23,771 businesses	4	10.2%
Employment	155,185 people	11	4.3%
Average Annual Salary	$31,758	16	
Total Payroll	$4.9 billion	13	2.2%
Total Tax Revenues	$805.2 million	14	1.8%
State Payroll Tax Contribution	$41.4 million	13	2.2%
Federal Payroll Tax Contribution	$377.0 million	13	2.2%
State Income Tax Contribution	$187.9 million	15	1.2%
Sales & Use Tax Contribution	$198.9 million	14	2.1%

Methodology and Sources

The impact of an increase in construction spending is calculated using the U.S. Department of Commerce Regional Input-Output Modeling System (RIMS II). RIMS II is based on input output (I-O) tables. For a given industry, the I-O tables show the industrial distribution of inputs purchased and outputs sold.

Research shows that RIMS II multipliers are similar to other regional I-O models based on in-depth and often expensive surveys. According to the U.S. Department of Commerce, RIMS multipliers have been used to estimate such things as the regional impact of military base closings, tourist expenditures, new energy facilities, offshore drilling and the opening or closing of manufacturing plants and other facilities. The nonresidential construction multipliers in this report are used frequently to analyze the impact of new construction projects. The construction multipliers are specific to New Jersey and are based on benchmark regional data from 2015 and industry data from the 2007 benchmark series, as published by the U.S. Department of Commerce. These multipliers are standard for this type of analysis and are the latest information available.

Industry value added (contribution to GSP) for New Jersey is the most recent data from the U.S. Bureau of Economic Analysis GSP estimates for the state, broken out by industry, for 2017. Industry output for New Jersey was estimated by taking Arkansas' percent share of national GSP for each industry and multiplying it by national gross output by industry.

The state payroll tax rate is calculated using the average employer tax rate as a percent of total wages for 2017. The source for this information is the National Association of State Workforce Agencies (NASWA) and the U.S. Department of Labor Employment Training Administration (ETA) Financial Handbook 394. The federal payroll tax rate is estimated to be 7.65 percent.

Total individual and corporate income tax contributions comprise gross income tax revenues and Corporation Business Tax revenues, both of which are for state fiscal year 2017, and are from the Governor's FY 2019 Detailed Budget. To estimate the amount of individual income tax contributions attributable to each industry, the estimated individual income tax collections paid by the average worker in each sector was calculated by using the New Jersey 2017 tax rate schedule for taxable income, then multiplied by the number of workers in each industry to arrive at the total estimated individual income tax collections for each industry. The amount of individual income tax contributions attributable to each industry was then estimated by multiplying the total statewide gross income tax revenues amount ($13.96 billion) by the percentage of total estimated individual income tax collections for each industry. The amount of corporate income tax contributions attributable to each industry was estimated by multiplying the total statewide Corporation Business Tax revenues amount ($2.14 billion) by the percentage of total output for each industry.

Total sales and use tax revenues are the annual totals of state sales and use tax revenues in state fiscal year 2017, and are from the Governor's FY 2019 Detailed Budget. The amount of sales and use contributions attributable to each industry was then estimated by multiplying the total statewide sales and use contributions amount ($9.57 billion) by the percentage of total output for each industry. In 2017, New Jersey had a 6.875 percent combined sales and use tax rate, as well as additional local sales and use taxes levied by individual cities and counties.

Employment and economic impact of the public sector is not included in the 19 sector analysis.

Employment and establishment data was calculated using the U.S. Census Bureau's County Business Patterns. All payroll data has been adjusted for inflation to 2017 dollars using the Bureau of Labor Statistics Consumer Price Index.

In this report, we estimate the impact of a $1 billion increase in New Jersey drinking water, wastewater and stormwater capital investment on various sectors of the economy.

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