



## Infrastructure and Utilities Resource List for Grades 9 through 12

The Resources in this document can be used with the Infrastructure Curriculum Packet for grades 9 through 12.

### Books

#### Non-fiction and Biography

- A Career in Transportation and Warehousing (Jobs for Rebuilding America), 2018 by Joe Greek (Author).  
From seeing the country from behind the wheel of a truck to managing hundreds of workers at an e-commerce fulfillment center, career opportunities within transportation and warehousing are booming in the United States. This book introduces students to a variety of job and career paths in logistics with ample room for growth, including how to jumpstart their journeys as early as high school.
- Cutting Edge Transportation Technology (Cutting Edge Technology), 2016 by Barbara Sheen (Author).  
Looks at the latest innovations in transportation technology, including electric vehicles, self-driving cars, high-speed trains, hydrogen- and wind-powered marine vehicles, drones, and the possibility of space tourism and colonization.
- The Dakota Access Pipeline (Special Reports), 2017 by Sue Bradford Edwards (Author).  
The Dakota Access Pipeline follows the controversy surrounding the building of the pipeline and the associated month-long protests at the Standing Rock Sioux Reservation in North Dakota. Features include essential facts, a glossary, selected bibliography, websites, source notes, and an index.
- Engineering the City: How Infrastructure Works, Projects and Principles for Beginners, 2000 by Matthys Levy (Author), Richard Panchyk (Author).  
How does a city obtain water, gas, and electricity? Where do these services come from? How are they transported? The answer is infrastructure, or the inner, and sometimes invisible, workings of the city. Roads, railroads, bridges, telephone wires, and power lines are visible elements of the infrastructure; sewers, plumbing pipes, wires, tunnels, cables, and sometimes rails are usually buried underground or hidden behind walls. This book tells the fascinating story of infrastructure as it developed through history along with the growth of cities.
- Invisible New York: The Hidden Infrastructure of the City, 1998 by Stanley Greenberg (Author).  
Invisible New York is a photographic exploration of the hidden and often abandoned infrastructure of New York City. Inaccessible and unknown to most New Yorkers, the structures and machinery deliver the essential services that a city's inhabitants usually take for granted. Many of these vast and imposing facilities have in recent decades been neglected or fallen into disuse. Others remain intact and in continuous use.
- Lighthouses & Keepers: The U.S. Lighthouse Service and its Legacy, 1997 by Dennis L. Noble (Author).

A full history of lighthouses, lightships, buoys, fog signals and the boats and people who tend them. including maps and photographs.

- Making the Modern World - Materials and Dematerialization, 2013 by Vaclav Smil (Author). This book considers the principal materials used throughout history, from wood and stone, through to metals, alloys, plastics and silicon, describing their extraction and production as well as their dominant applications. The evolving productivities of material extraction, processing, synthesis, finishing and distribution, and the energy costs and environmental impact of rising material consumption are examined in detail.
- Oil - A Beginner's Guide 2nd edition (Beginner's Guides), 2018 by Vaclav Smil (Author). Oil is the lifeblood of the modern world. Without it, there would be no planes, no plastic, no exotic produce, and a global political landscape few would recognize. Humanity's dependence upon oil looks set to continue for decades to come, but what is it?
- Oil on the Brain: Adventures from the Pump to the Pipeline, 2007 by Lisa Margonelli (Author). Oil on the Brain is a smart, surprisingly funny account of the oil industry—the people, economies, and pipelines that bring us petroleum, brilliantly illuminating a world we encounter every day.
- Rebuilding America's Infrastructure (In the News), 2010 by Annalise Silivanch (Author). Discusses the need to rebuild America's infrastructure in the fields of transportation, energy, water, and waste, and discusses the environmental and economic challenges to renovating the infrastructure.
- Secret Subway: The Fascinating Tale of an Amazing Feat of Engineering, 2009 by Martin W. Sandler (Author). In 1869, Alfred Beach wanted to build America's first air-powered railway below New York City. Boss Tweed, a powerful politician and crook, opposed it. Secretly, Beach and his crew carved a 300-foot tunnel beneath a department store.
- Sewers Stink!: How Does Waste Go Down? (The Story of Sanitation), 2018 by Riley Flynn (Author). Ever wonder how the sewer system works? Discover the story behind the pipes beneath our feet. From facts on the first plumbing systems to information about how wastewater gets treated and cleaned. Learn about why we need sanitation and the journey our waste and used water takes through the pipes.
- Smart City Tech Planning Handbook: Your Smart City Planning Guide for broadband, IOT, and solutions in technology. A handbook for learning about smart city use cases, technology, and roll out, 2017 by Wade Sarver (Author). Most cities want to be a smart city and they are looking for technology to save them. I once saw a TED talk where they described a smart city as being the way the buildings are built. Let me tell you something, the buildings are constructed in these cities. While it would be wonderful to plan a smart city from scratch, it's not the reality of the cities out there. They intend to improve the existing city infrastructure, which is no easy task. That's the purpose of this book, to help you work with cities and have them develop their smart city initiatives.
- Underground, 1983 by David Macaulay. (Author). David Macaulay takes us on a visual journey through a city's various support systems by exposing a typical section of the underground network and explaining how it works. We see a network of walls, columns, cables, pipes and tunnels required to satisfy the basic needs of a city's inhabitants.

- Underground: A Human History of the Worlds Beneath Our Feet, 2019 by Will Hunt (Author). A panoramic investigation of the subterranean landscape, from sacred caves and derelict subway stations to nuclear bunkers and ancient underground cities—an exploration of the history, science, architecture, and mythology of the worlds beneath our feet
- The Works: Anatomy of a City, 2007 by Kate Ascher (Author). Have you ever wondered how the water in your faucet gets there? Where your garbage goes? What the pipes under city streets do? How bananas from Ecuador get to your local market? Why radiators in apartment buildings clang? Using New York City as its point of reference, *The Works* takes readers down manholes and behind the scenes to explain exactly how an urban infrastructure operates.

#### Fiction

- The Last Days of Night: A Novel, 2017 by Graham Moore (Author). New York, 1888. Gas lamps still flicker in the city streets, but the miracle of electric light is in its infancy. The person who controls the means to turn night into day will make history—and a vast fortune. A young untested lawyer named Paul Cravath, fresh out of Columbia Law School, takes a case that seems impossible to win. Paul's client, George Westinghouse, has been sued by Thomas Edison over a billion-dollar question: Who invented the light bulb and holds the right to power the country?
- Mortal Engines (Mortal Engines, Book 1), 2017 by Philip Reeve (Author). London is hunting again. Emerging from its hiding place in the hills, the great Traction City is chasing a terrified little town across the wastelands. Soon, London will feed. In the attack, Tom Natsworthy is flung from the speeding city with a murderous scar-faced girl. They must run for their lives through the wreckage -- and face a terrifying new weapon that threatens the future of the world.
- Tunnels, 2009 by Roderick Gordon (Author), Brian Williams (Author). 14-year-old Will Burrows has little in common with his strange, dysfunctional family. In fact, the only bond he shares with his eccentric father is a passion for archaeological excavation. So when Dad mysteriously vanishes, Will is compelled to dig up the truth behind his disappearance. He unearths the unbelievable: a secret subterranean society. "The Colony" has existed unchanged for a century.
- York: The Shadow Cipher, 2018 by Laura Ruby (Author), Dave Stevenson (Illustrator). There is a new version of the Big Apple, one defined by the architecture, tech, and legacy of the groundbreaking Morningstarr Twins, and filled with the kind of robots and mechanical beings you'd expect to find in steampunk, even though it takes place in the present day. Three friends living in the same apartment band together to take down an evil real estate developer who threatens to tear down their home, one of the Morningstarr twins' most famous creations.

#### Magazines, Journals, Miscellaneous

- SmartCitiesDive: Energy & Utilities, Transportation, Buildings & Infrastructure, Environment, Resilience, Governance, Tech & Data  
<https://www.smartcitiesdive.com/>
- UrbanNet: Urban Development Magazine  
<https://www.urbanet.info/>

### **Online Links**

- The Museum of the City of New York: The Greatest Grid Exhibition  
<http://thegreatestgrid.mcnyc.org/>
- Smithsonian: National Postal Museum activities  
<https://postalmuseum.si.edu/activities/>

### **Background information for the Educator**

- Stanford University: Lesson plans for teaching about infrastructure.  
<https://gpc.stanford.edu/infrastructure-lesson-2>