JERSEY CITY

SMART CITIES PROJECTS FOR A BETTER FUTURE

by

IIoT World

Jersey City - redefining SMART based on residents needs

Jersey City has implemented smart city projects aiming to improve the lives of its citizens and created mobility projects to streamline resources while meeting neighborhood-specific needs. Jersey City has strived to integrate smart technology into every facet of its community in order to improve the quality of life for all residents and increase economic development. So far, the city has identified fifteen projects, all of which focus on smart mobility, infrastructure, and technologies.

Jersey City was among the finalists of the 2019 Readiness Challenge at Smart Cities Week, and the collaborative public-private partnerships strategies are aimed at a common goal - to enhance economic growth in the community.

Challenges

Smart cities encapsulate an overwhelming number and variety of domains and application areas that are enhanced with technological advancements. Just as other communities across the world, Jersey City saw a significant challenge in offering efficient services and serving its residents in a timely and effortless manner.

In an interview with IIOT-World, Brian Platt, the City Manager for Jersey City, explains the main challenges he wants to address with available smart technologies.
Brian is also a Chief Operating Officer serving the city government. A smart city, according to his vision, uses data to drive decision making, is both connected and automated, and incorporates machine learning and predictive analytics to continuously improve efficiency and quality of city services.

"One of the biggest opportunities we see with smart city technologies is the efficiency of services through data analysis and automation. The more we as city officials can predict and anticipate needs and can lower costs of services, the less we can focus and spend on these services and the more we can then ultimately focus on new initiatives. For example:

- ***Being able to know when infrastructure needs repairs based on particular events that often occur before a failure***
- ***Routing street cleaning automatically based on road usage and at different times of day to minimize traffic and parking impacts***
- ***Diverting vehicle traffic on certain routes during certain times of the day to allow for faster emergency responses and to reduce congestion***
- ***Providing targeted services to residents based on usage history of other services"***

Brian Platt, City Manager for Jersey City

Specifically, Jersey City faced challenges with infrastructure and its maintenance, city services such as street cleaning, the lack of mobility and traffic congestion, etc.

The challenge that came with implementing smart technology to help address the difficulties mentioned above was the construction of the open data portal. Its primary role was to perform data collection and data-driven decision-making processes for all city departments. Just after this step, the city could focus on smart projects in different areas. This first project offers a transparent and open method to consult the projects launched by the municipality and understand the data.

Smart City Projects in Jersey City

Jersey City has blended a multitude of parameters for functional areas such as governance, energy, buildings, mobility, infrastructure, healthcare, and citizens. The city has successfully integrated smart components in its quest to becoming a smart conglomerate of functional technology, improving the lives of its residents. Out of more than fifteen projects, we present a listing of the actions that, in our opinion, stand out for each category.

SMART GOVERNANCE

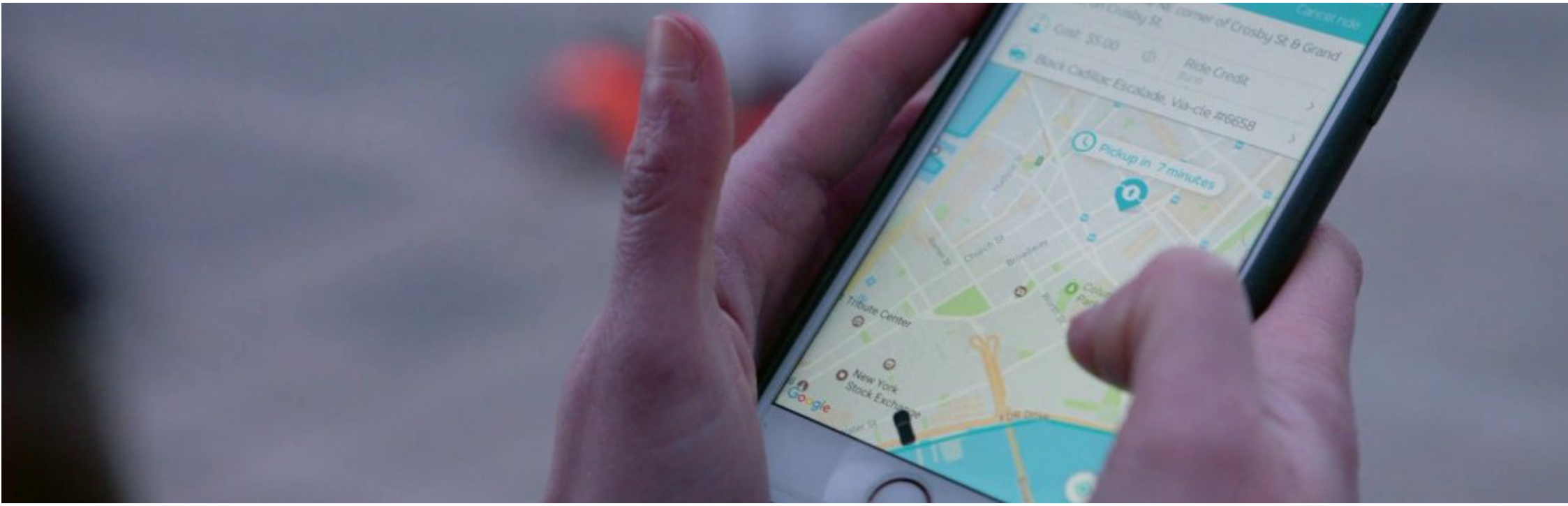
Digitized and Simplified Forms

Digitalization to better serve the citizens and respond to the community needs is one of Jersey City's goals in the quest to becoming a smart city in all aspects. This has led to the development of a citizen portal, which gives access to **digitized and simplified forms**. This way, the municipality has developed a stronger contact with its residents and a faster response to their queries. The more city officials can predict and anticipate needs and lower costs of services, the less is spent on these services: more focus is set on new initiatives.

Smart governance also refers to a redefined model of public-private partnerships. An example of this is New Jersey State's innovation initiative. In November 2018, New Jersey, through NJEDA, called for proposals to earn $100,000 in planning grants. The municipalities could apply if they partnered with an institution of higher education and found one or two other strategic partners. The NJEDA handed out nine grants for a total investment of $900,000.

SMART MOBILITY

The efforts in this area are vast; some actions still in place started in 2017. The intelligent infrastructure, combined with technology and smart vehicles, has been in focus to better mobility for the residents of Jersey City.



Integrated Mobility Solutions

Jersey City's smart mobility projects include improving traffic with the aid of technology. The **ParkMobile app** allows citizens to pay the municipal meter and parking lot fees quickly. This results in a cashless experience for its residents and allows for better planning, such as anticipating parking

time spent. Also, the municipality has a clear overview of the parking locations, anticipating the need for parking lots. Safety is part of all smart initiatives as well. **Protected bike lanes** and **technology-assisted crossroads** take significant steps to collecting and analyzing traffic data.

Also, part of the public-private partnership program is the collaboration with the ride-sharing Via app to provide on-demand bus service. By January 2020, the service should allow for the shuttling of multiple passengers headed in similar directions and the picking up and dropping off of passengers at corners. The app's management targets 150 000 rides a month and is deploying a fleet of fourteen vehicles upon launch. This service's goal is to provide citywide access to its residents, especially those who live in areas considered "transit deserts." Unlike assigned bus stops, the pickup locations will vary from day-to-day, depending on demand. Because it creates virtual bus stops and digitally sets up the most efficient places for people to get picked up and dropped off, this project progresses the smart city strategy.

Low-emission Mobility 

Low emission projects are large parts of Jersey City's new developments. They also represent a cornerstone for all sustainability projects implemented in the city, improving the quality of air and minimizing carbon dioxide emissions.

To encourage and increase the adoption and usage of electric vehicles, parking zones for electric vehicles only were built. Related to the low emission mobility program, the project is designed to be replicated in many zones of the city. Also, with the aid of public-private partnerships, electric vehicle charging stations were installed around the city to provide public charging access. This step was part of a more comprehensive plan of empowering the usage of electric municipal fleet vehicles.
To make more use of green energy, Jersey City is testing a municipal carshare plan aimed at ensuring municipal electric and gasoline cars that are constantly on the go. Employees are using a software program to reserve the vehicles and a keycard to unlock them. This strategy allows for a constant use of electric-powered municipal fleet vehicles, which are known for having a faster payback in terms of reduced fuel and maintenance costs, since they are used more often.

Another project related to smart mobility was first implemented in 2016, making Jersey City one of the first U.S. cities to partner with the Waze app to automatically send updates on street closure data. This ensures better communication with the city's drivers. All updates are sent automatically so drivers can use alternative routes and better plan their journeys around the city.

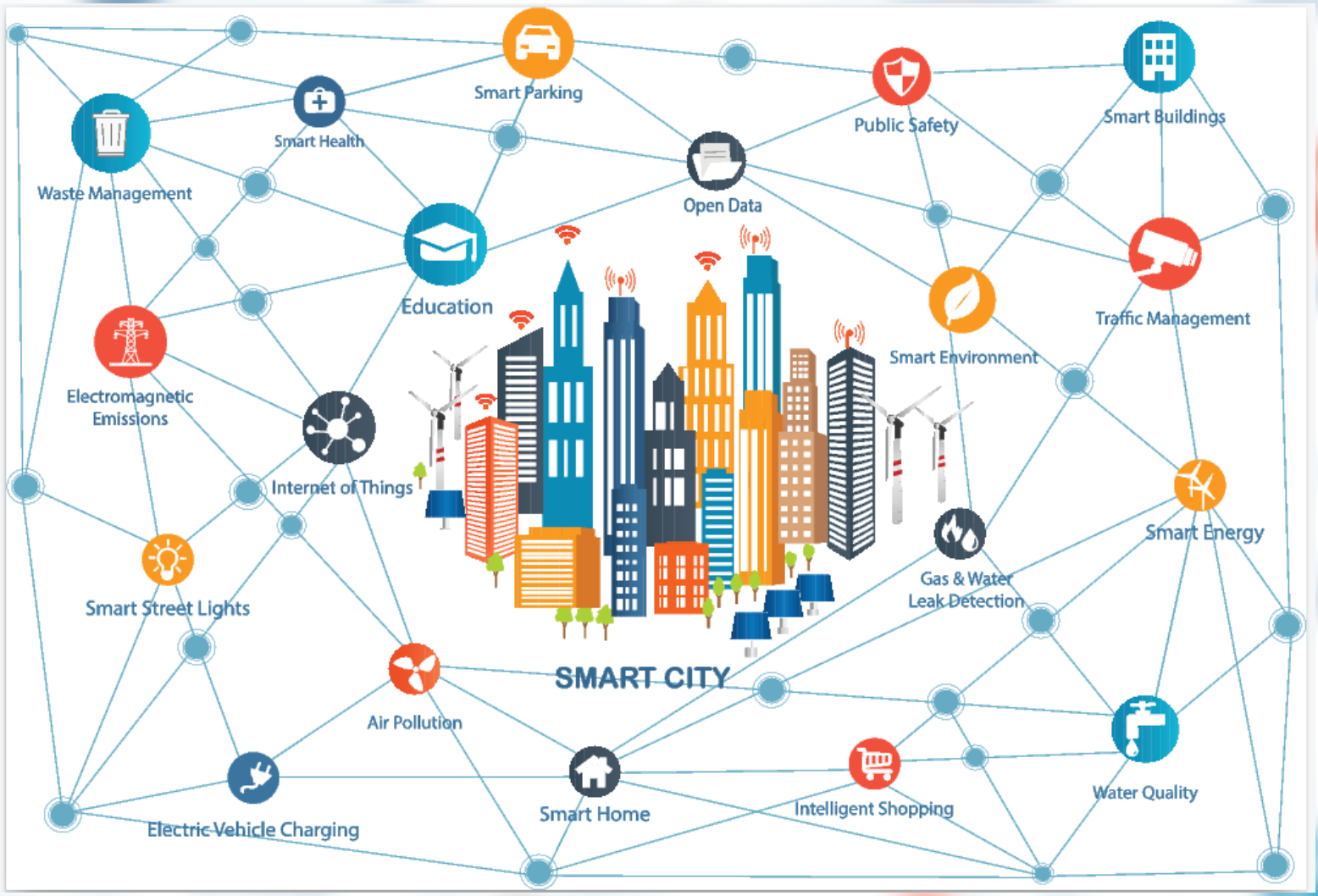
SMART CITIZENS - CIVIC DIGITAL NATIVES

Smart Kiosks

Creating digital natives is part of the development of any smart city. Smart lifestyle choices were encouraged with the creation of **digital kiosks**. The interactive kiosks around Jersey City, which provide free public WiFi, show visitors community event information, emergency alerts, real-time transit information, and local news, encouraging information-sharing among small businesses. A more connected community is at the center of all future transformation, and citizens can learn about how smart technologies make the city more equitable and sustainable.

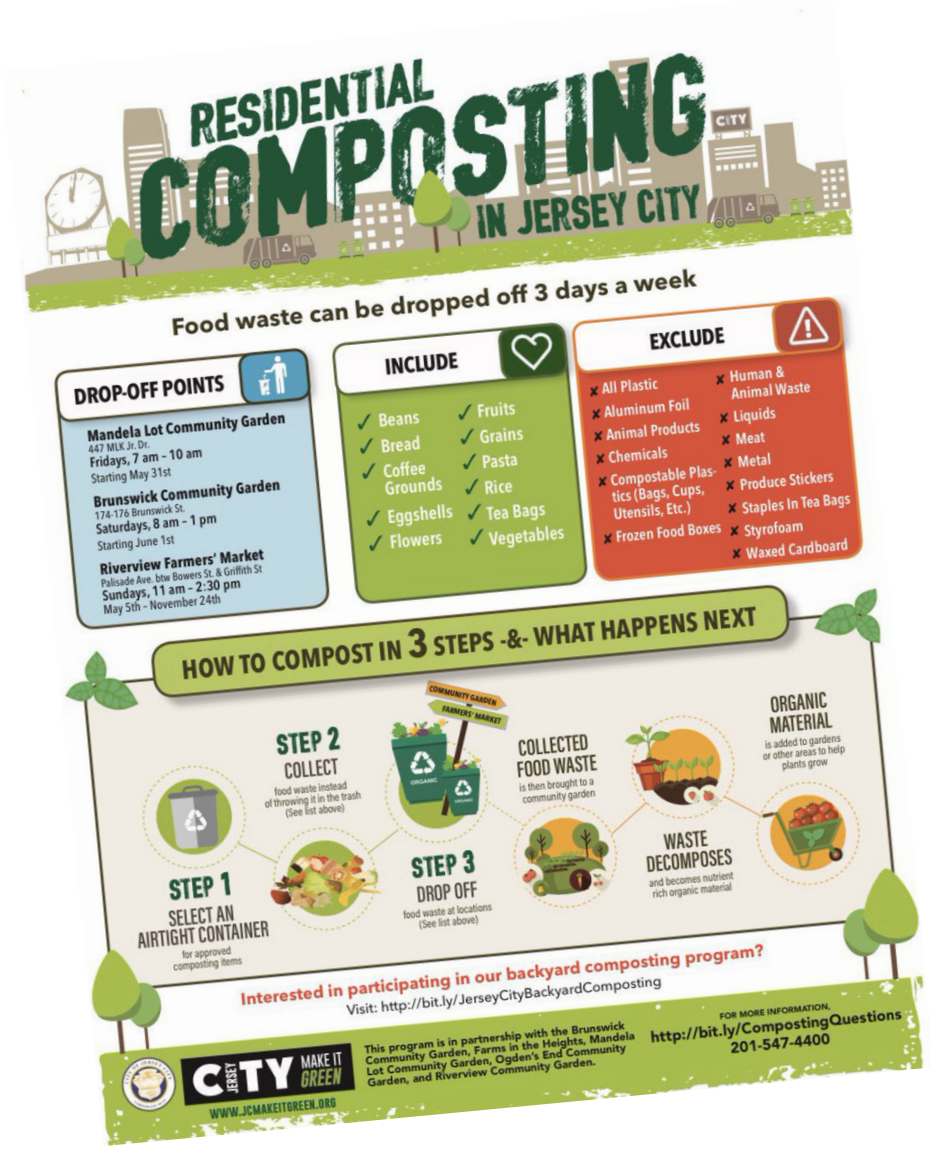
Civic Web Portal

Another compelling project that places residents and their needs at the center of benefiting from the smart city transformation is the CivicWeb Portal.
Through this portal, citizens are able to subscribe to meeting updates, search documents (such as meeting minutes), and even find out when the next meetings are scheduled.


Smart Parking
Public Safety
Smart Buildings
Waste Management
Smart Health
Open Data
Education
Traffic Management
Smart Environment
Electromagnetic Emissions
Internet of Things
Smart Energy
Smart Street Lights
Gas & Water Leak Detection
SMART CITY
Air Pollution
Water Quality
Smart Home
Intelligent Shopping
Electric Vehicle Charging

Environment Conscious Residents

Part of the smart educational effort was also the disposable plastic bags ban implemented in Jersey City.
Conscious citizens were made aware of the fact that a typical household uses 1 500 plastic bags each year, often for less than fifteen minutes before they are discarded.
This brings Jersey City closer to a more educated and environmentally conscious community.



SMART INFRASTRUCTURE

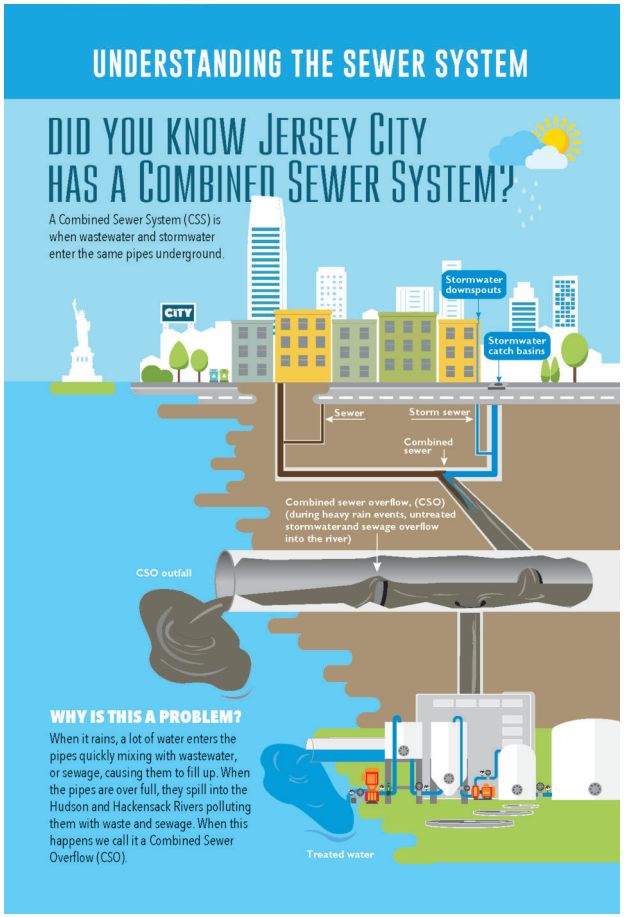
Digital Water and Waste Management

The intelligent infrastructure program includes guidelines and policies which guide municipalities, counties, and transportation agencies to creating effective, complete streets, policies that are safe for all users. The inclusion of green infrastructure means that roads can act as stormwater management assets instead of channeling stormwater into existing infrastructure systems.

Digital Water Management

To better understand sewer overflows and their impact on the environment, new technology was implemented.
With the aid of high-performance sensors, Jersey City is trying to combat the challenge of fixing combined sewer systems that dump more than 23 billion gallons of raw sewage into the waterways every year. The collected data will better plan sewer upgrades and green infrastructure installations across the city.

The porous pavement allows rain to enter the ground instead of flowing into sewers. This is part of the smart green infrastructure plan to manage stormwater runoff while also providing a safe and accessible route for all users.



Conclusion

Jersey City incorporates technology in every facet of the community, aiming to improve its residents' quality of life, mobility within the city, and environmentally-conscious plans. Many of the projects have a significant impact on the community; others will yield more effects in some years. The blend of technology with public-private partnerships has been the best practice in implementing smart city applications. Furthermore, the creation of collaborative online platforms aiming to inform residents and involve them in various projects has been another step towards building the smart city.

A different exceptional effort has been the gathering of data and its interpretation with the help of state of the art technologies, such as AI and data management systems. It has been a proven method and a cornerstone for the implementation of upcoming smart projects in Jersey City.

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