

February 18, 2019

BY HAND DELIVERY

Ms. Lora W. Johnson
Clerk of Council
Council of the City of New Orleans
City Hall, Room IE09
1300 Perdido Street
New Orleans, LA 70112

In Re: *Smart & Sustainable Cities Initiative for the City of New Orleans,*
CNO Docket UD-18-01

Dear Ms. Johnson:

Enclosed please find an original and three (3) copies of the *Advisors' Roadmap to Develop a Master Plan for a Smart & Sustainable New Orleans: Innovation, Integration, Equity and Sustainability and Draft Smart Audit Procedure* in the above referenced docket, which we are requesting that you file into the record along with this letter in accordance with your normal procedure.

Sincerely,

Jay Beatmann
Counsel

JAB/dpm
Enclosures

cc: Official Service List for UD-18-01

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Roadmap to Develop a Master Plan for a Smart & Sustainable New Orleans: Innovation, Integration, Equity and Sustainability

February 2019

Prepared for the Council
of the City of New Orleans
and the Smart & Sustainable
City Committee

Roadmap to Develop a Master Plan for a Smart & Sustainable New Orleans: Innovation, Integration, Equity and Sustainability

As New Orleans commemorates its tri-centennial birthday, there is no better celebration of the vibrant, diverse and resilient history of this unique city than the launch of the Smart & Sustainable City initiative. The initiative is about the modernization of the city in a way that preserves the best the city has to offer while improving and updating infrastructure and services, making them more innovative, more useful, more accessible, and more exciting for residents and visitors alike.



Foreword

Standing at the threshold of the Fourth Industrial Revolution, cities have a unique opportunity to enable the seamless integration of new technologies that will help meet societal challenges while efficiently and equitably providing essential services to residents and businesses. The digitization and electrification of technologies, the rapid increase in the quantity and speed of data transmitted, and the rise of artificial intelligence all offer cities substantially greater insight into system operations, and a chance to improve response times, efficiency, and communications with customers and residents. If done well, the livability, sustainability and resiliency of cities will be dramatically improved.

Effective deployment of technologies such as Advanced Metering Infrastructure (“AMI”), self-healing electric circuits, 5G telecommunications, advanced sensors, electric and autonomous vehicle infrastructure, and so forth, will make life dramatically more convenient for New Orleans residents while reducing the city’s impact on the environment and enabling the city to respond more effectively to the stresses caused by climate change. However, many of these new technologies blur the traditional lines of authority in the city and require increasing coordination and integration of all city departments to ensure that new technologies are incorporated in an efficient manner that optimizes benefits to New Orleans citizens.

As utilities upgrade the electric and telecommunications systems in New Orleans, an extraordinary window of opportunity is opened to city leadership to ensure that these systems support and enhance public safety, disaster response, traffic management, public transit, deployment of electric and autonomous vehicles, customer-generated electricity from rooftop solar, and universal access to the internet, all in a manner that preserves the character of New Orleans and raises its appeal as a “smart city” that is responsive to the needs of all of its residents. To accomplish this, the city government, utilities, businesses, citizens and stakeholders must work together toward a shared vision of the future of New Orleans.



Great strides have already been made toward accomplishing the city's goals. The New Orleans City Council has focused for the last several years on modernizing utility service in New Orleans by securing a robust portfolio of stable energy resources and accelerating the implementation of AMI. The Council has also focused on ensuring that the city's telecommunications infrastructure incorporates new small cell technology and will be 5G ready as soon as possible. Throughout these initiatives, the Council has insisted that all modernization efforts take into account the needs of the entire community including low income residents.

As a result of these successful policies, New Orleans is now in a position to transform itself into a leading smart city, which will not only improve the daily quality of life for its current residents, but will transform New Orleans into a fierce competitor for new businesses and residents to ensure that the city grows and remains vibrant for decades to come. New Orleans can accomplish this through modernization of its digital, physical and social infrastructure, and by integrating and coordinating essential services for the benefit of New Orleans businesses and residents. In order to implement this vision, the Council established the Smart & Sustainable Cities Committee ("SSCC") of the Council to focus on this initiative. Further, in December 2018, the Council directed its Advisors to create a proposed "Roadmap" for achieving electric grid modernization in conjunction with the stated goals of the Smart & Sustainable City initiative and the proposals in a Smart Audit procedure, so that the initiative will serve as a means to maximize and enhance economic welfare of the city. In accordance with the Council's directive, this Roadmap is intended to describe a process that will lead to the creation of a "Smart Master Plan" for the modernization of the city.



What Does a Smart and Sustainable City Look Like?

A smart city is one where technology responds to how people want to live. It is a city where sensors and connected devices communicate and respond in real time to changing conditions. It is a place where decisions are based on data and services are delivered in an equitable and optimally efficient manner. It is a place where traffic signals respond to the movement of cars, trucks, cyclists and pedestrians on the roads and sidewalks; where streetlights turn on when people are present; where a variety of transportation options including electric vehicles (“EVs”), autonomous vehicles, ride share, scooters and bicycles, and public transit are coordinated to move people around the city or community in a safe, efficient and sustainable manner; where sensors transmit essential public

safety information to first responders. It is a city where essential infrastructure is modern, secure, reliable and resilient in the face of disruptive forces such as turbulent weather or careless or ill-intended individuals. It is a place where businesses, residents and visitors have easy access to information about city or cultural events through kiosks, Wi-Fi access points, and smart applications on smart devices. It is a city where information is accessible to consumers so that they can make decisions such as when to purchase electricity or when and where to park their cars. It is a city where municipal agencies are interconnected and communications and operations between them are seamless. It is a city that people want to live and work in.





Smart & Sustainable New Orleans: The Vision

A smart city initiative does not imply that there is something “not smart” about the way things have been done in the past. Rather, the Smart & Sustainable City initiative is a collaborative effort to build on foundations that are already in place and to keep pace with rapid advances in technology. The smart city strategy uses technology and data to manage change and expand capacities to better the daily lives of its citizens, enhance city operations and make the best possible use of resources across all departments.

A smart city modernizes digital, physical and social infrastructure and integrates all essential services for the benefit of its citizens by harnessing advances in sustainable technology to make delivery of these services more efficient, innovative, equitable, and exciting.

New Orleans will be a sustainable and connected city, where technology is leveraged to improve public safety and traffic management, and provide businesses and residents greater choice and flexibility in how they receive services. In a Smart & Sustainable New Orleans, data becomes part of the infrastructure. Strategies will be implemented to ensure cyber and physical security and to protect data privacy and physical infrastructure assets. As data is analyzed, decisions will be made and services deployed based on real-time information with optimal efficiency and equity.

The backbone and nerve center of Smart & Sustainable New Orleans will be a modernized electrical grid, advanced telecommunications, and sensor technologies, allowing coordination of the “Internet of Things” (“IoT”) with advanced data analytics and artificial intelligence to promote efficiencies in the provision of a vast array of services. A Smart New Orleans will also have improved transportation infrastructure, including the incorporation of electric and autonomous vehicles, advanced traffic safety and controls, and smart street lighting. Stoplights with appropriate sensors and software can detect traffic backups and make adjustments to clear the traffic jam. Streetlights with sensors can save electricity (and, therefore, taxpayer money) by turning off when not needed, while still being on to ensure safety any time vehicles and people are detected nearby. The Smart & Sustainable City initiative will also lay the groundwork for the private sector to build and upgrade to smarter homes and buildings, mindful of the overarching goal of benefitting the entire New Orleans community, including low income residents and small businesses.

Times and conditions change so rapidly that we must keep our aim constantly focused on the future.

—Walt Disney

The city is already making headway with a number of significant “Tri-centennial Projects”: the Louis Armstrong airport is being expanded; streetcar lines are being extended in many neighborhoods; the Lafitte Greenway has added to the city’s inventory of designated bikeways to support alternative transportation; new and remodeled recreation centers provide safe, structured activities, leadership training and gathering locations for New Orleans youth; a host of volunteer and community engagement

opportunities have been identified and are open for participation; and the widely-visited and historic Bourbon Street neighborhood is undergoing extensive upgrades the likes of which have not been undertaken in nearly a century. But this represents just a small fraction of what will be possible with the implementation of a comprehensive Smart & Sustainable City strategy.

In this Roadmap we recommend a process to the Council for the development of a comprehensive Smart & Sustainable City strategy, including a draft Smart Audit procedure to produce an inventory of existing assets and needs to allow New Orleans to understand its starting point and to begin identifying steps to transform itself into a leading Smart & Sustainable 21st century city.

What are other cities doing?

Cities nationwide are beginning to seriously consider what will be necessary to move themselves toward the future and become cities that are attractive to the next generation as places to live, work, and visit. Cities such as San Francisco, Dallas, Denver, Pittsburgh, and Columbus have innovative smart city projects under way. In order to keep and attract residents, workers and tourists, New Orleans must be at the forefront of this movement. As one of only a handful of major cities to have complete jurisdiction over its utilities, New Orleans is well-positioned to lead the way on Smart & Sustainable Cities.

Surprisingly, less than 40 percent of utilities nationwide have a grid modernization strategy in place and are in the process of implementing it.¹ Of these, the vast majority are focused primarily on the cyber and physical security of their systems, and secondarily on distribution automation to improve reliability, efficiency and analysis of their operations. These are important, but it is notable that far fewer are taking a holistic view and incorporating grid modernization as an element of a smart city strategy. New Orleans’ grid modernization strategy will tackle these aspects, but will also accomplish the larger goals of smart technology. New Orleans is on the forefront—one of the only City Council’s to establish a separate committee solely to consider and drive smart city innovations.



SPOTLIGHT: SAN ANTONIO, TX

San Antonio is creating three innovation zones to test civic technology such as drones and public Wi-Fi before scaling it for the rest of the city. The city is viewed as a leader in smart cities in the U.S. Like New Orleans, San Antonio is using grid modernization as the platform for its other smart infrastructure initiatives, including measures to better manage traffic, improve pedestrian safety and emergency response, address flooding challenges, and enhance customer service in municipal agencies, all while enhancing the history, charm and character of the city.

¹ See <https://bv.com/insights/expert-perspectives/grid-moderniation-incentives-capital-investments-decrease-risk>. Another 35% of utilities are reportedly developing plans to modernize their systems.

Developing a Smart City Master Plan

A smart city “Master Plan” defines the goals and aspirations of the community and its leaders, and outlines the direction or process to implement strategies to achieve those goals.

A smart city Master Plan is not an advocacy document and is not a recommendation for any specific technology.

The first step toward harnessing technological developments and putting them to work for the city’s residents is to develop a common vision and set of goals for the future and to map out how to achieve those goals—to develop a smart city Master Plan. This Roadmap for development of a Master Plan for a Smart & Sustainable New Orleans outlines a process for developing such a smart city Master Plan. Importantly, a smart city Master Plan is intended to be a living document. It should be created to complement and take full advantage of already-ongoing efforts, and as new discoveries are made and consensus around common goals is reached, the smart city Master Plan should be adjusted over time. Instead of being designed in a manner that will cause it to become rapidly outdated as technology advances, it should serve as an adaptable platform that can move easily to integrate new technological advances as they occur.





Building a smart city requires bringing together existing infrastructure, local history and culture, urban issues, and citizen priorities, and interweaving them with new technological structures, developments, and ideas in a holistic manner to address needs and solve problems in a tapestry that is constantly changing. The implementation of any smart city Master Plan necessarily involves a degree of learning and experimentation and coordination across city agencies and service providers. The plan will require regular assessment to ensure that it is on track to meet objectives. It also will require refinement and adaptation as circumstances, priorities and technologies evolve.

The Smart & Sustainable City initiative is about harnessing technology and data to improve the lives of New Orleans businesses and residents in their daily activities. While advances in technology are the vehicle that makes improved coordination and integration of services possible, a smart city is first and foremost about people. All aspects of a smart city should be driven by the needs and desires of the people as they seek a better quality of life, easier access to information, and the efficient delivery of services, especially city services.

Smart & Sustainable New Orleans will be informed by lessons learned and best practices in other cities. However, the unique history and culture of the city, its structural constraints and geographic challenges, as well as the priorities of city leaders, businesses and residents, mean that each solution, in order to succeed, must be New Orleans-specific in its design and application. In particular, Smart & Sustainable New Orleans must also be Equitable New Orleans. Programs and initiatives must be designed to benefit all segments of the community.

Smart & Sustainable New Orleans Starts with Grid Modernization

A smart city starts with modernization of the electrical and telecommunications grid. These grids are the backbone supporting the integration of additional technologies. A smart city is, by definition, an electrified city. Most smart cities discussions focus on advanced telecommunications, data analytics, sensor technology, distributed energy resources (“DER”), emissions reductions and improved transportation, all of which are critical components, but all of which, at the beginning and the end of the day, depend on a modern, efficient, reliable, and secure electrical and telecommunications system.

A smart city is, by definition, an electrified city.

Modernization of the electric grid supports the reliable provision of power to all other functions and promotes a “self-healing” grid that can instantly detect, pinpoint, and in some cases automatically repair electric service interruptions or reroute power delivery paths. It provides the utility with a great deal more insight into power flows on the grid and improved ability to respond more rapidly to outages. The utility can see and pinpoint disruptions on the power grid immediately, rather than waiting for customers to call in to report outages and then sending a truck out to locate the problem. It also gives the utility the ability to see and manage power flows caused by the introduction of customer-owned generation like rooftop solar and to plan the distribution grid in a manner that better accommodates and takes advantage of such resources.

Maintaining and upgrading aging electrical system infrastructure is no longer simply a question of keeping the lights on. The grid was originally constructed to send power from the utility’s generators to customers. Now the grid must accommodate a variety of energy resources from multiple locations. This involves

managing changes in supply and demand patterns as “DER”, renewables, energy efficiency and EVs enter the resource mix. It also involves planning for new demand, such as data processing centers or electrified mass transit. It requires bi-directional and even multi-directional communication capabilities. And it requires the ability to accommodate changing security needs as risks increase—whether from human error or intent, or intensified risks from extreme weather conditions. The grid must be able to respond to all of these threats.

The technology boom is already underway in the telecommunications sector with the advent of small cell wireless systems. New Orleans is being courted by numerous providers, large and small, to secure franchises and leases to build-out small cell systems which are critical to the high speed, big data systems that are at the core of smart technology. The thoughtful use of these franchises and technology is a watershed moment for maximizing the benefits of advanced technology and the revenues they can provide to the city. Cities all over the country are competing to become 5G cities.

Simply put, 5G is the next generation of wireless communications that will evolve from small cell systems and is the most significant data network advancement to date. The impressive increase in the speed of data transmission that 5G allows makes a city a true 21st century city, which should be a fundamental goal of the Smart & Sustainable City initiative. What is revolutionary about 5G is not that people will be able to download movies and apps faster on their personal devices. 5G takes data and communication capacity, speed and reliability beyond anything previously experienced. As an example, an autonomous vehicle or a car outfitted with accident avoidance sensors will be able to detect and respond in a fraction of the time currently required with our current 4G networks. This means lives saved. 5G will serve as a platform for deployment of new products, apps, and services significantly more advanced than what exists today—including enabling the roll out of autonomous vehicles and self-healing networks on which critical infrastructure such as the electric transmission and distribution systems depend. New Orleans’ Smart & Sustainable City initiative must incorporate 5G technology and must ensure access to 5G to all of its citizens.

All of the components that traditionally come to mind when discussing smart cities depend on an efficient, reliable and multi-directional electrical grid and enhanced telecommunications capabilities: Wi-Fi kiosks connecting city residents and visitors to the city and to one another; sensor technologies to relay information to first responders to improve public safety, coordinate traffic signals and operate smart streetlights; operations that make up the IoT, from industrial scale automation technology to smart home and personal devices; smart healthcare technologies; computer-enabled networks and sensors to improve and manage operations in buildings, municipal water and sewage systems, and other infrastructure; smart meters to gather data to be analyzed to further improve efficiencies, and so much more.

It is possible to implement aspects of a Smart & Sustainable City plan without first modernizing the grid, but efficiencies will not be maximized, applications will be limited, and costs will not be minimized. And if the power goes out, none of the benefits of those smart improvements can be realized.

The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency.

–Bill Gates



New Orleans understands this imperative better than most other localities in the U.S. As a city that has rebuilt itself repeatedly in the aftermath of catastrophic storms, and that has faced several years of frequent disruptions to the distribution system, New Orleans residents and businesses appreciate the role that the electrical and telecommunications systems play in every aspect of daily life and the need for it to be efficient, secure and reliable, and resilient.

The Council has already taken several steps to begin preparing New Orleans to become a smart city:

Deployment of Advanced Metering Infrastructure

The City Council approved a proposal by Entergy New Orleans, LLC (“ENO”) to deploy AMI, which includes advanced meters that provide two-way data communications on a secure and reliable communications network. As an initial matter, the advanced meters will provide improved billing accuracy and collect time-differentiated usage to support time-of-use rates that can assist customers in keeping their bills lower. More importantly, once deployed, the data collected will provide ENO with a deeper understanding and ability to manage its system far more efficiently than ever in the past. AMI also provides the technology platform to achieve greater grid resiliency in the distribution network, improve outage and reliability performance, improve grid planning, and demand-side management (“DSM”) programs, time differentiated pricing, and specially-designed customer options, among other system and customer benefits. In the past few months, the Council accelerated the roll out of AMI by nearly a year in order to gain these benefits for the city as soon as possible.

Decoupling, DER and the Utility’s Integrated Resource Plan

The Council has directed ENO to develop a “decoupling mechanism” that reduces a utility’s natural incentive to oppose energy efficiency and distributed energy resources like rooftop solar by ensuring that ENO will earn enough revenues to safely operate the system even as kWh sales of electricity decrease. Traditionally, a utility’s revenue requirement (which is a key element of its rate structure) ties profitability to the number of kWhs of electricity sold by the utility to the customer. This creates an incentive for the utility to sell as much electricity as possible and to resist customer-driven efforts to reduce consumption of electricity from the utility. Decoupling is a mechanism that alters the utility’s financial incentive to sell as much electricity as possible, thereby reducing utility opposition to incorporation of resources such as energy efficiency or wide-spread deployment of rooftop solar or other renewable resources, into its portfolio. In addition to encouraging the utility to revise its business model, the changed financial incentives have the benefit of encouraging the utility to find ways to become a Smart & Sustainable City proponent and to partner with the city to maximize the benefits for customers. Along with the development of the decoupling mechanism, a study of the potential for DER in New Orleans will be undertaken to understand what future operations of the grid will look like once the Smart & Sustainable City strategy is implemented. This will allow ENO to incorporate the Smart & Sustainable City strategy into its Integrated Resource Plan as it looks at energy needs over future planning horizons.



Regulatory Improvements to Encourage EV Infrastructure

The City Council examined key regulatory issues that were impeding the installation of EV charging stations in New Orleans. The Council passed a resolution finding that it is in the public interest to encourage the construction, location and operation of EV charging stations throughout the city on both public and private property and to allow owners, operators and providers of EV charging stations to charge a fee for providing access to and use of the stations without becoming subject to regulation as a public utility. The Council also opened a public proceeding to examine other issues related to EV charging, including a process for public comment on issues and proposals. The Council also merged the Electric Vehicle docket with the Smart & Sustainable City docket.²

Small Cell Technology Rollout

The New Orleans City Council has exclusive authority over the granting of telecommunication franchises for use of the public rights-of-way and public facilities. These franchises are a prerequisite to the installation of most small cell and 5G systems. Requests for these franchises have increased over the last few years and a number of smaller franchises were granted. However, the Council recognized that its current Code provisions are antiquated and not adapted to the latest technologies. Accordingly, the Council Utility Regulatory Office (“CURO”) has set as a priority the reformation of the Code to maximize the utility and benefits of these franchises. This process has been largely spurred by recognition that telecommunication franchises are a core component of the Smart & Sustainable City initiative.

The Council’s Establishment of a Smart & Sustainable City Initiative and ENO’s Grid Modernization Plans

In January 2018, the City Council formally established a Smart & Sustainable City initiative.³ As a first step, the Council asked ENO to prepare a grid modernization report. ENO’s report detailed its efforts to date, including describing several key distribution system modernization projects that ENO plans to undertake over the next few years. ENO will:

1. reduce the frequency, duration, and size of electrical outages;
2. enable quicker restoration of power;
3. improve resiliency and reliability;
4. increase productivity and efficiency;

² Docket Nos. UD-18-01 and UD-18-02.

³ Council Docket No. UD-18-01.



SPOTLIGHT: COLUMBUS, OH

Columbus is using a \$50 million grant from the U.S. Department of Transportation to complete nine smart city projects. One project provides a connected platform to improve resident and visitor mobility through a single transportation app that allows people to plan and pay for all modes of transportation around the city including public transit, parking, bike-sharing, car-sharing and ride hailing services. The city is also creating an event parking management system to allow people to easily and efficiently view and reserve parking spaces at multiple providers –parking garages, surface lots, and parking meters.



SPOTLIGHT: PITTSBURGH, PA

Pittsburgh won an \$11 million grant for its Surtrac smart traffic light system that adapts to changing traffic patterns and reduces travel times. Pittsburgh identified seven “Smart Spines” to key traffic corridors where installation of the system reduced aggregate waiting time at intersections by 40 percent which helped decrease vehicle emissions by 21 percent.





- 5. create self-healing networks; and
- 6. enhance operability of home devices by adding smart devices to and creating self-healing networks within ENO's distribution system.

These steps are essential for New Orleans, but grid modernization involves far more. As a starting point, Dr. Carl Pechman of the National Regulatory Research Institute ("NRRI") prepared a blueprint for the Council for how grid modernization may be achieved, and urged that a "smart audit" of the existing grid assets be conducted. Even as the initial phases of grid modernization are implemented, an open and transparent process will be established to identify smart city technologies and initiatives that are determined to best benefit New Orleans. Information will be gathered, and the process will be informed by input from a broad cross-section of the city, with the goal of developing a rational critical path to ensure that the benefits are made available to all citizens.



SPOTLIGHT: DENVER, CO

Denver has installed a pedestrian detection system at intersections to improve safety and created a connected vehicle network that helps trucks communicate and coordinate delivery routes to reduce congestion. Denver has also partnered with Panasonic on plans for a "transit-oriented, mixed-use development" called Peña Station NEXT that will include office, retail, dining, outdoor, and residential space with the goal of becoming an energy-self-sufficient community – a smart city within a city. The project will serve as a testing ground for new technologies such as Wi-Fi-enabled smart lighting, EV charging, and renewable energies.

Talent wins games, but teamwork and intelligence win championships.

-Michael Jordan



Roadmap to a Master Plan for Smart & Sustainable New Orleans

Several years ago, one author described the smart city concept as “the political challenge of adapting one of the most powerful economic and social forces of our time to the needs of the places where most of us live and work.”⁴ What this statement highlights is the notion that becoming a smart city is a process that occurs in the midst of an economic revolution. The path towards success requires broad political will, strong leadership, and a creative, inclusive, multi-faceted approach to develop new ways to keep pace of the technological changes that are occurring almost on a daily basis.

Resolution No. R-18-536: Develop an Informed, Practical and Inclusive Procedure to Advance New Orleans’ Smart & Sustainable City Initiative

In December of 2018, the Council directed the Advisors⁵ to propose a “Roadmap” for achieving electric grid modernization and the stated goals of the Smart & Sustainable City initiative. This Roadmap is to be developed together with a draft “Smart City Audit” procedure that would serve as the initial stage to help the Council and city leadership forge a path toward a smart future that maximizes and enhances the economic welfare of the city.

The Smart City Audit should draw upon the aspirational model described by Dr. Carl Pechman in his paper entitled “The Smart City Audit as a Building Block for Developing Smart Cities.” The Council directed the Advisors to adapt and modify Dr. Pechman’s model to better achieve the stated goals of the Council and its Smart & Sustainable City initiative and to tailor the Smart City Audit scope and process to the resources available to the Council. The Council further directed the Advisors to include in their proposal thoughtful and practical mechanisms for coordinating and integrating into electric grid modernization the input and cooperation

of other utilities, franchisees, and stakeholders that can be participants in the Smart & Sustainable City process. Among other things, the Advisors were asked to recommend procedures for dealing with important issues related to confidentiality of data and information, privacy and the ownership and protection of proprietary and other confidential information.

The Council also instructed that the proposed Smart City Audit should provide for maximum stakeholder involvement and the integration of technical information and data from ENO, and that it should provide for a subsequent and more extensive baseline audit and a procedure to update the baseline on a triennial basis to ultimately synchronize the audit process with the triennial Integrated Resource Planning cycle.

Leadership and the Role of the Smart & Sustainable City Committee

Leaders of the Smart & Sustainable City initiative will need to develop a structure to steer the collaborative process. This includes creating a transparent and open system to inform, engage with and encourage participation from all stakeholders and partners. The role of the Council, and in particular, the role of the SSCC to lead and drive the smart city vision should be clearly defined. Among other things, the role of the SSCC is to:

- Advocate the New Orleans Smart & Sustainable City vision;
- Support New Orleans’ broader strategic objectives;
- Adopt the principles of open government, open data and transparency of operation;
- Reduce barriers and challenges, cut red tape, reduce layers of regulation;

4 See Rick Robinson, “Six Inconvenient Truths about Smart Cities” (The Urban Technologist, Feb. 15, 2015) <https://theurbantechnologist.com/2015/02/15/6-inconvenient-truths-about-smart-cities/>.

5 Council Resolution No. R-18-536.

- Promote a culture of risk taking, promoting entrepreneurship, creativity and sustainability;
- Act as a facilitator and communicator of change;
- Assist with coordination and alignment of initiatives; and
- Assist with identification of funding sources, expertise, partnership opportunities and other potential resourcing requirements.

The SSCC should serve as the liaison between other representative groups and project teams that are involved in the Smart & Sustainable City initiative and the full Council. In this capacity, the SSCC, with the assistance of CURO and the Council’s Advisors, would engage with stakeholders, advise on project planning and track milestones, manage expectations and filter hype, track progress of the Smart & Sustainable City initiative generally and work with teams to provide educational programs necessary to encourage participation and strengthen the smart city vision throughout the city. Tracking mechanisms must be developed to ensure accountability and to enhance transparency. This could include a website and app where citizens can easily see progress. Beyond that, a continuity mechanism should be developed so that positive and successful initiatives continue even as city administrations change.

Principles for Community and Stakeholder Engagement

Thoughtful community engagement will be key to enabling the Council to gather relevant information and to learn about the needs of New Orleans residents and businesses as it assesses potential Smart & Sustainable City initiatives and programs. Recognizing that the city, its residents and businesses have limited time and resources, establishing some basic ground rules for engagement with the city as it develops and implements the smart city strategy will ensure an inclusive process while optimizing the time and resources directed toward this effort.

The City of Boston recently put out a very brief “playbook” outlining straightforward expectations for engaging with providers of smart technologies. Boston smart city leaders:

- *Respectfully request potential smart city partners not to send sales teams. City leaders want to speak with people who know about cities, who know about their city, and who are willing to spend time getting to know city workers and residents.*
- *Express interest in real solutions for real problems encountered by real people. Any solutions proposed should be vetted in the community and should address a specifically identifiable need of the city or its citizens.*
- *Caution against too much focus on cost-cutting as the ultimate goal. The goal is first and foremost about improving the lives of the people of the city.*
- *Urge smart technology providers to move beyond data and algorithms and instead to speak in terms of policies or behaviors that their technology is designed to affect. Partners should have a clear understanding of context. Smart city leaders are equally interested in smaller, simpler projects that will make an immediate difference to a resident or worker.*



Smart city leaders should engage early and frequently with residents, businesses and partners in the Smart & Sustainable City initiative. It should be clear from the outset that the creation of a smart city is a transparent and cooperative undertaking. The SSCC will need to lead collaboratively, working across disciplines, departments and city systems. Among other things, leaders should solicit the views and experiences of a broad and diverse group of stakeholders (e.g., seniors, small businesses, families with children, youth, members of different industries, law enforcement, public and private service providers, heads of city departments, all branches of government, academia, students, members of the convention and visitors bureau, etc.) through a variety of forums (neighborhood meetings, roundtables, surveys, virtual suggestion boxes, etc.) to identify what these stakeholders believe are the most urgent needs of the city and what improvements these stakeholders would like to see. Within these engagements, participants should:

- Differentiate between a “dream” list and low-hanging fruit. It is important to recognize what is attainable over the short- or long-term, and what likely is not attainable.
- Develop strategies to keep on topic while still letting ideas flow during meetings. Meetings should be focused and positive, but it is also important for leaders to acknowledge past failures. Building a smart city is a learning process.
- Consider a strategy to engage with and involve the media in a positive way. Are there ways to include them as partners? How can they help with outreach and messaging? How can they contribute to solutions?
- Consider holding innovation/ideas forums to tap into the creativity and ingenuity of local residents and businesses. Consider inviting students (university, high school and middle school) to participate. At times young people come up with extraordinarily innovative solutions to problems that sophisticated enterprises overlook.

As regular follow-up to these engagements, key goals and desired strategic outcomes may need to be revised from time to time.

Roadmap Step One: Articulate the Vision

A vision for a Smart & Sustainable New Orleans needs to be articulated based on the needs and desires of the greater New Orleans community. First and foremost, the goal of implementing any technology should be real solutions for real problems faced by the people of New Orleans. The end game is better decision-making and better delivery of services, not just more data.

To do this, city leaders, businesses, service providers and residents must collaborate to identify what the greatest and most urgent needs of the city and its citizens are? How should these needs be prioritized? Where does the city want to be in 5, 10, 20, or 50 years?



SPOTLIGHT: SAN FRANCISCO, CA

San Francisco received \$11 million from the U.S. Department of Transportation to implement projects aimed at reducing transit travel time, emergency vehicle response time, and traffic accidents, by including smart traffic signals and deployment of autonomous shuttle buses for some areas. The city has implemented its SFpark program, using wireless sensors to create smarter parking management through demand-responsive pricing, adjusting real-time pricing based on the number and location of spaces available. SFpark has helped reduce traffic miles and greenhouse gas emissions by 30 percent in the areas where it was launched.



SPOTLIGHT: DALLAS, TX

Dallas has formed the Dallas Innovation Alliance, a public-private partnership composed of stakeholders from the Dallas region, including AT&T, who are interested in turning Dallas into a smart city. The first phase of the program is focusing on smart parking, smart irrigation, smart water systems, interactive digital kiosks, and an open source data platform.





It is helpful for leaders to craft a vision statement to begin the conversation. The definition of a New Orleans Smart & Sustainable City is a good place to begin:

New Orleans will be a vibrant, connected Smart & Sustainable City with modernized digital, physical and social infrastructure, where advances in sustainable technology are harnessed to integrate and coordinate essential services on an equitable basis for the benefit of all New Orleans businesses and residents.

Two years ago, New Orleans was one of numerous cities competing for a Smart City Challenge Grant from the U.S. Department of Transportation to support pilot projects to address problems of transportation and mobility in American cities. Although not ultimately selected, the submission serves as a useful model to engage the citizenry in articulating a vision of a smart New Orleans. In the context of smart and equitable mobility, city administrators posited:

Imagine a city where every job is accessible and every destination reachable.

Imagine a city where the dignity of every individual is respected not just in terms of equal access but also in terms of the respect for an individual's time.

Imagine a city whose citizens move seamlessly across every conceivable mode of transportation.

Imagine a city where free will and informed choice are made possible through technology.

Imagine a city where delivery of goods is expertly and efficiently coordinated.

In the Challenge Grant application, city administrators outlined benefits of investing in a data warehouse with high performance computing capacity, enhanced fiber network, sensors, cameras and monitoring devices, new mobility services including bike-shares, EVs, car share programs, dynamic parking, improved logistics and freight management, improved healthcare transportation, and an autonomous vehicle pilot program. Some aspects of the proposals may be out of immediate reach, while others may have been realized in some form even without need for a grant. Still others have application beyond the transportation sector and might be evaluated more broadly for potential development in the smart city context.



SPOTLIGHT: BOSTON, MA

Boston has a Vision Zero initiative to end fatal and serious traffic accidents. Boston has partnered with Verizon to gather and analyze data on vehicle and bicycle movement in response to traffic signals and pedestrian crossings, as well as data on pedestrian behavior. Boston is also studying autonomous vehicles, smart parking sensors, interactive public art, connected devices, and new ways of engaging residents digitally.



SPOTLIGHT: LAS VEGAS, NV

Las Vegas is investing \$500 million through a partnership with Cisco Systems to become a well-developed smart city by 2025. Sensor technology will detect traffic patterns to change the pace of streetlights to respond to congestion and pedestrian movements. The city is also testing sensors in trash cans to optimize municipal trash collection frequency and routes, and sensors that detect burnt out streetlights. Las Vegas is also rolling out a fiber network downtown as the platform for its smart city technology.

This same exercise can be applied to each of the priorities identified in the vision process. Development of a common vision is a critical step to bring together parties that often do not collaborate. This process should start with a set of guiding principles, emphasizing city aims such as to:

- *Improve overall livability of the city*
- *Enhance long-term sustainability*
- *Improve public safety, health and security*
- *Promote equitable access to digital infrastructure; significantly reduce or eliminate the existing broadband access gap*
- *Enhance mobility*
- *Celebrate the diverse cultures of New Orleans*
- *Promote open and transparent governance*
- *Support economic growth and prosperity*

Once guiding principles are established, then a wish list can be compiled. The list will be honed at various stages of implementation, but part of building a Smart & Sustainable City is the creative process of developing solutions outside the usual constructs, and developing partnerships and collaborative efforts that break down traditional structural and social barriers and organizational silos. This process will also be helpful in identifying the people and organizations that are likely to be well-suited as partners in the implementation of the smart city strategy.

Proposed Procedure:

The Advisors propose an Advisor-led process of collaboration among all stakeholders. Over a period of 120 days, the Advisors propose to conduct two public technical conferences, and solicit input from Councilmembers, relevant city departments, and relevant utilities. The Advisors would also propose a 90-day deadline for intervenors and interested community groups and other stakeholder groups to file written comments with the Council regarding what they believe the city's most urgent needs are and what the goals and guiding principles of a Smart & Sustainable City effort for New Orleans should be. At the end of the 120-day period, the Advisors would then file with the Council a proposed set of guiding principles, goals and priorities

for a Smart & Sustainable City program. The Advisors then propose that interested parties would have a 60-day period to submit comments on the proposed guiding principles, goals and priorities to the Council, after which the Council would render a decision regarding the appropriate guiding principles, goals and priorities for the Smart & Sustainable City effort.

*To reach a port, we must sail—sail,
not tie at anchor—sail, not drift.*

—Franklin D. Roosevelt

Roadmap Step Two: Conduct a Smart City Audit and Identify Core Needs and Gaps in Capabilities

An audit of existing assets, services, and systems is an essential early step to building a Smart & Sustainable New Orleans. This assessment will help identify logical starting points and the optimal path to implementing smart technologies both from an integrated and individual systems perspective. The process will include auditing the components and status of essential backbone systems, with an initial focus on the electrical grid and telecommunications network. Together these systems will support smart applications, but other city systems (emergency management, transportation, water, city administration and services, and so forth) should be evaluated as well.

Among other things, the process will examine current practices, such as data collection and use. It will also examine existing integrated technologies and the potential for additional applications. It also should evaluate enterprise architecture, including operations, relationships and processes in the various city departments, and organizations that provide services within New Orleans and that have similar or complimentary goals or operations. Where are the inefficiencies and why do they exist? Where are the obvious synergies? Are there structural barriers that need to be addressed in order to implement the smart city strategy?



The Smart Audit of the electrical grid involves looking at the current physical and institutional nature of the electrical system. This will facilitate an understanding of the interactions that already exist and allow the smart city architects to visualize a range of possibilities for future structures. The process will also help to define the role that the electric utility will play in the transformation to Smart & Sustainable New Orleans.

One aspect of the audit process is related to ENO’s deployment of AMI. It is important that customers are educated about the technology, its benefits and usefulness to customers. Even more critical, however, is to assure that ENO and the city are able to use the gathered data to its full potential. Does ENO have a system in place to adequately manage the data? Can it structure the data and use it? Are there systems in place to ensure its accuracy? To protect it? Does ENO have an adequate telecom team or does it need additional personnel (for example, data scientists) to evaluate, correlate and analyze data to drive value for ENO and for the customer?

Another critical part of this process will be an inventory of the telecommunications space: is there adequate broadband accessible for both government and private sector use? What licensed spectrum is owned by the city and who is the carrier? What is owned by the electric utility? By the local telecommunication providers? By others? Can existing franchises be renegotiated or extended to create greater access, including for lower income residents and smaller businesses?

An assessment of other city infrastructure will also be essential. The inventory of assets and services will all aid in framing a coherent and integrated vision for the future that will allow the city to achieve its smart policy goals. This includes assessment of the city’s existing smart capacity. A clear understanding of existing capacities and assets would provide the Council with a sound basis for determining what steps are necessary to advance the Smart & Sustainable New Orleans initiative and for setting priorities for it. Questions that should be answered in this process include: Where is the city now and how did we get here? What smart projects are already underway? An inventory of current projects that fall within the “smart” rubric should be developed. This inventory should include, among other things, AMI; EV charging; relevant Environmental Committee projects; relevant components of smart mobility applications, such as the proposal for real-time, predictive trip planning (do apps like Waze and Google Maps fill this need?) What are the citizen responses to these projects? Are there projects that could be expanded or improved? Is there low-hanging fruit that can be addressed immediately? And, importantly, what modifications are needed to electric utility and telecommunications infrastructure to enable the integration of other technologies so that smart city goals can be achieved?

It is also important to determine what percentage of the population has access to computers or electronic devices to make use of technological innovations and to determine how that percentage can be increased to make those devices more broadly available, especially to lower income



SPOTLIGHT: KANSAS CITY, MO

Kansas City launched a \$15 million public-private partnership with Cisco, Sprint and Think Big Partners to establish a smart city corridor along a two-mile street car route that includes free access to public Wi-Fi across more than 50 square blocks, 125 smart streetlights, smart traffic signals and 25 interactive kiosks that allow citizens to access city services, current events, transportation services, local business information, public digital art, local history, and entertainment.



SPOTLIGHT: CHICAGO, IL

Chicago’s “Array of Things” project will install 500 sensor nodes in its streets to collect data on everything from traffic, air quality, sound levels, and temperature, to water levels on streets and gutters. The data will help inform city planning decisions and longer term research and will be publicly available for citizens to analyze. The program was bolstered by a \$3.1 million federal grant from the National Science Foundation.



residents who are more likely to face low technology access. What training programs exist to ready citizens and service providers for the changes? Do city offices have the capacity to take advantage of new technology? What particular challenges (apart from funding) have been encountered in efforts to implement new technologies? What issues are there with data access, ownership, use and privacy that should be addressed immediately?

Another critical assessment is that of the regulatory structures into which the Smart & Sustainable City initiatives must fit. This aspect of smart city development is too often underestimated. Early assessment of the existing regulatory paradigm will help identify potential challenges before they become too costly to overcome. Do the current structures allow for implementation of the strategies that New Orleans would like to pursue? Many smart projects will involve permitting, rights of way, zoning, safety requirements, adjustments to the city’s master plan, finance and revenue requirements, and a host of other local regulatory matters. Beyond this, however, are there structural issues that must be resolved? Are there inefficiencies, duplications, budgeting or procedural roadblocks that will need to be broken down or worked around? Are there jurisdictional issues that need to be addressed? What coordination with regional and state government is desirable to further city goals or to take advantage of economies of scale that will benefit a broader group of people?

The answers to questions such as these will provide the Council with greater insight into which smart city measures have the potential to have the broadest impact and will allow the Council to prioritize its efforts in order to provide the most benefit to the greatest number of New Orleans residents and businesses. Once undertaken in a comprehensive and systematic manner, the city’s core needs and any gaps in capabilities to deliver on them should be readily apparent.

Proposed Procedure

Dr. Pechman’s paper recommends the development of two types of architectural renderings: a “systems architecture” diagram, which provides a conceptual view of the various components of complex city infrastructure systems and their relationships; and a “grid architecture” diagram, which provides detailed information on the relationship among those systems that enables the design and operation of the electric grid. The Advisors recommend that the Council direct each utility under its regulation to assign an engineer or other person with sufficient technical understanding of the system design of the utility they represent and with access to relevant data to help create the systems architecture and grid architecture diagrams that will inform the Smart & Sustainable City strategy. The Council should encourage providers of other essential infrastructure and services to each designate a similarly-qualified individual to participate in the creation of the systems and grid architecture renderings. We recommend that this process be led by the



SPOTLIGHT: WEST HOLLYWOOD, CA

West Hollywood’s smart strategy emphasizes building a culture of data analytics supported by data privacy and sharing policies across city departments to enable the city to do more with less. Transparency and accountability is also central to its strategy. A public “pizza tracker” visually depicts progress on smart initiatives from start to finish. Education and outreach in the form of a graphic novel explains the city’s goals and progress in reaching them.



SPOTLIGHT: AUSTIN, TX

Austin has adopted a people-first approach to its smart city master plan, focusing on economic opportunity and affordability, grid modernization, digital inclusion, hiring practices, education and cultural opportunities, flood response, emergency health services, food access, security monitoring, and creation of a smart mobility roadmap, etc. For example, the smart mobility roadmap will analyze the impact of shared, electric and autonomous mobility vehicles on equity, affordability, safety, land use, infrastructure and resources. Food environment maps will map food retail store survey data to understand food access throughout the area.



Council's Technical Utility Advisors. The participating entities should develop a data sharing agreement in place that would allow those participating individuals to understand the interdependencies of the various systems and potential interactions that could be undertaken to gain efficiencies. Participating entities should include ENO, Cox Communications, AT&T and other city cable and telecommunications franchisees providers, Sewage and Water Board, Department of Safety and Permits, City Planning Commission, Department of Public Works, Regional Transit Authority, Historic District Landmark Commission, Vieux Carré Commission and others as may be identified during the process, including tourism and convention representatives. The participating utilities and other public service entities participating in this effort would have 120 days to execute a data sharing agreement and six months to complete the systems architecture and grid architecture filings and submit them to the Council.

Once the essential architectural renderings are created, each utility under the Council's jurisdiction would have an additional six months to conduct an audit of its respective systems, and or other essential service providers should also be urged to voluntarily conduct an audit of their respective exiting systems. The audit should inventory existing assets, including identifying system components that are at or near the end of their useful life in order to understand the need for any near term replacement or upgrade decisions that could be informed by the smart city Master Plan.

Participating utilities and service providers, should also incorporate in their audits identification of any on-going efforts to modernize their systems that should be accounted for or incorporated into the Smart & Sustainable City Master Plan. Efficiencies will be maximized and costs optimized if the Smart & Sustainable City strategy is coordinated with and builds upon foundations that have already been laid.

The Smart City Audit process should also identify governance mechanisms, roles and structures and assess how they inform, promote or impact the city's smart city objectives. The Advisors recommend that this aspect of the Smart Audit be led by the Council's





Legal and Technical Advisors and CURO. The Advisors and CURO would have six months from the completion of the systems architecture and grid architecture diagrams to produce a report to the Council identifying the governance mechanisms, roles and structures relevant to the city's smart city objectives and identifying any changes that could be made that would be beneficial to the smart city effort. As part of their consideration of this issue, the Advisors and CURO should hold at least one public technical conference to collect input from the public. The report should also consider the current and potential role of the utilities in the smart city as well as governmental and quasi-governmental roles and structures.

Within 120 days after the results of the systems audits and Advisors/CURO report are filed with the Council, interested parties and all affected agencies should file comments with the Council identifying what they believe to be the core needs and gaps in capabilities should be prioritized for inclusion in the smart city effort. The Advisors should file within 120 days an Advisors' report compiling the results of the audits and the comments filed by parties and the public into a comprehensive report to the Council with a recommended list of core needs and gaps for the Council's consideration. The Council would then approve and adopt a list of core needs and gaps that the smart city Master Plan should be developed to address.

Step Three: Review Best Practices and Identify What Should Be Applied in New Orleans

The collaborative approach needed to build a smart city is not limited to the city itself. Although there is no single model that can be pointed to as the example of an ideal smart city, there is no shortage of studies, pilots and research related to smart city practices, technologies and experiences. New Orleans can learn from the experiences of other cities and communities who are grappling with the same problems that New Orleans faces, studying lessons learned and adapting best practices and successes to the city's own needs. The SSCC will also want to keep abreast of developments in technologies, including new applications as well as research related to health and safety concerns, and costs and benefits associated with various technologies.

New Orleans will also have the opportunity to benefit from the experiences of its "Sister City" San Antonio. Like New Orleans, San Antonio is in the midst of interweaving 300 years of history and culture with cutting-edge smart technologies and modernization of its infrastructure to improve the lives of its citizens and businesses. The close ties with San Antonio will give New Orleans the benefit of a front row seat to preview the implementation of smart and sustainable initiatives that it is considering for its own citizens.

Proposed Procedure

Within 120 days from the Council's adoption of the list of core needs and gaps to be addressed in the development of the Smart City Master Plan, interested parties shall have the opportunity and relevant utilities and agencies under



SPOTLIGHT: GAITHERSBURG, MD

As a small city, Gaithersburg faces greater cost constraints than larger urban areas so it strives to make data-driven decisions that will have an immediate return for citizens. City vehicles are fitted with cameras and lasers to monitor road conditions to improve maintenance, preventing significant deterioration. An inventory of the species and condition of every publicly-owned tree allows the city to track and treat diseases and prevent interference with infrastructure. And sensors installed in stormwater drains and below-ground infrastructure helps identify vulnerabilities and manage the quality of water that flows into the Chesapeake Bay.



SPOTLIGHT: SAN DIEGO, CA

San Diego is in the process of installing more than 3,200 smart streetlights with sensors that track cars and pedestrians to manage traffic and optimize parking. The sensors can be adapted to collect a wide range of information such as gunshot sounds or air quality data, or can be used to plot routes for emergency vehicles.



the Council's jurisdiction shall be required to file with the Council suggested best practices that should be used to address the core needs and gaps. Within 90 days of the filing of comments, the Advisors shall file an Advisors' Report with the Advisors' recommendations regarding the identified best practices. The Council will then render a decision that will identify those best practices that should be prioritized for incorporation into New Orleans' Smart & Sustainable City program. The Council may also direct on-going assessment of best practices outside of New Orleans with periodic reporting from the Advisors, with the aim of ensuring that New Orleans' initiative is dynamic and is based on the best-available current information.

Step Four: Identify Potential Partners and Funding and Financing Mechanisms for Smart Infrastructure

Selection of smart city partners will be informed both by the identified core needs as well as by the Council's chosen best practices and the various "wish lists" that will have been compiled through the inventory of assets and community outreach.

Smart technologies will result in substantial cost savings to cities and their residents, however, finding the initial funds needed to pay for upgrades and new technologies will be challenging, especially in the present era of reduced federal assistance to cities. Over time, however, smart cities can pay for themselves by generating new revenues from economic development while maximizing existing revenues from user fees, franchise fees, lease payments and other newly created opportunities for packaging and branding city assets.

To be sure, there are still occasional grant and government funding opportunities for smart cities initiatives. Very often these are for pilot projects. As an initial (and on-going) step, the SSCC should work with the administration to exhaust all possible government grants that might relate to or support the Smart & Sustainable City initiative. However, a broad array of funding options must be examined as potential resources for investment in smart infrastructure.

Utilities are a natural and indispensable partner for investment in backbone technologies that will support

the other smart technologies. Utilities have the benefit of a publicly reviewed rate structure plus a vested interest in a modernized multidirectional grid. Hence, the ENO grid modernization plan provides the critical starting point for the New Orleans initiative. Both the Council's Utility, Cable, Telecommunications and Technology Committee ("UCTTC") and the SSCC have complementary roles in making this project successful on all levels.

Beyond grid modernization, some technologies that are new are challenging to finance partly because it is difficult to measure the dollar value of projects whose principle benefits are socioeconomic in nature. In some cases, it may be difficult to monetize the benefits. In others, the integrated, cross-sector nature of many smart city projects make traditional financing complicated at best. Of course, every frontier poses similar hurdles. At some point, everything from interstate highways to space exploration had to answer the same threshold questions: Is it worth it, and how will we pay for it? It is not the purpose of this Roadmap, or even for a Master Plan to definitively answer these questions, but rather to keep them in mind as a range of options are evaluated.

The SSCC has the exciting challenge of trailblazing. In addition to the financial tools discussed above, the Committee has many other possibilities that it will need to explore, assess, and either discard or develop. Unfortunately, New Orleans is not a rich city and taxes are not a realistic solution, which makes the challenge that much greater. That means that exploring the vast array of possible alternatives must be high on the SSCC agenda.

Among those possibilities are public and private partnerships, which have had varying degrees of success around the country and world. The typical structure involves a sharing of risks and rewards, with the added benefit that the private partner often will take charge of long-term operation and maintenance of the infrastructure asset. This structure does need to be approached thoughtfully. City leaders must decide if it is beneficial to effectively privatize critical city assets. It has been done very successfully in some instances, and with mixed results in others. This is a structure that must be considered, but which should be evaluated in terms of both the city's priorities and lessons learned from other cities.

Green funds and philanthropies might also be tapped to assist with financing projects. The SSCC should dedicate some time and effort through CURO and other experienced city agencies to exploring what is available in these areas. Tech companies may also offer assistance and favorable terms as they are eager to deploy their technologies. Tech companies often support philanthropic organizations in providing assistance to projects that are in the public interest so some synergy might exist there.

There are also many things that can be done without funds through smart regulations. For example, the SSCC should examine city procurement processes and existing contracts to determine if smart technologies can be written into procurements and services contracts, e.g., requiring municipal waste disposal providers to include smart sensors on vehicles or technology to monetize, recycle or reuse products. Land use, zoning and building regulations can be amended to require the incorporation of smart technology as prerequisites for approvals and permits. These changes could be immediately applied to new construction and development and phased in for renovations, rehabilitations and reconstructions.

The city should also move quickly on projects that are low-cost, but immediately beneficial, such as dynamic parking, re-routing of traffic, some sensor technologies, and increased Wi-Fi access in libraries, parks and recreation facilities, all of which can be done in conjunction with the granting of telecommunications and other right-of-way franchises. Reaching for this “low-hanging fruit,” even as more complex, costly projects are being developed, will yield quick short term results, and cement a message that city leaders are committed to smart improvements. It would also increase community buy-in while strategies for larger projects are being developed and discussed with residents and businesses.

Proposed Procedure

Once core needs and gaps are identified, the Advisors recommend that the Council, CURO and the Advisors create a procedure for solution providers to submit proposals to fill those needs and gaps, including the issuance of Requests for Proposals (“RFPs”) or submission of expressions of interest. The Advisors suggest that the Council also request assistance of the administration on an on-going basis to monitor for potential grants or other funding sources

Step Five: Produce Concrete Prioritized List of Projects to Undertake

This last step is the biggest. The city must create its “to do list,” identifying the full scale and pilot projects it wishes to undertake and prioritizing them in a manner that will best lead to implementation. New Orleans is already looking at grid modernization, and the UCTTC and SSCC are in the process of working with ENO on a Smart City Audit to assess the status of city assets. Even as this is occurring, the city can take other steps to put together a concrete list of projects.

In addition to ideas that will come from needs identified in the Smart City Audit or that may be proposed through community outreach, the city might consider holding a “technology open house,” inviting big tech companies, entrepreneurs and even students to participate and pitch ideas to meet some of the needs the city has prioritized.

There will be much further work beyond consideration of technologies. Among other tasks, it will be necessary to develop proposed timelines for deliverables; conduct community engagement to explain projects, costs and benefits and to elicit concerns and potential solutions; identify “owners” of each initiative (i.e., which city department, utility, etc. is responsible for implementing a project); identify project partners; and so forth.

Proposed Procedure

Once partners and financing opportunities have been identified, the Council can develop its smart city Master Plan. The Council should direct the Advisors to submit a draft list of priorities and timelines. Within 120 days from the filing of the list of priorities, interested parties shall have the opportunity and relevant agencies shall be required to file with the Council comments on implementing those priorities. Within 90 days of the filing of comments, the Council should host a technical conference to allow public discussion of the proposed priorities. Within 120 days of the technical conference, the Advisors shall file an Advisors' Report with the Advisors' recommendations for moving forward with the list of priorities and shall submit to the Council a draft smart city Master Plan to guide the Council on implementation of its smart city strategy.



There is no question that becoming a smart city is a challenge, but as a practical matter, the technological tide of change is already here. New Orleans' decision not to simply let the tide wash over the city but to ride it, leverage it and benefit from it has positioned the city to become a successful 21st century city. Implementing change and financing municipal projects is never easy and often unpopular, but with creativity, diligence and a commitment that every segment of the community will benefit, New Orleans can become a leading Smart & Sustainable City.

Appendix

Proposed Procedural
Schedule for
Developing
the Roadmap for
a Master Plan
for a Smart &
Sustainable New
Orleans: Draft Smart
Audit Procedure



Articulate the Vision for a Smart & Sustainable New Orleans

Over a period of 120 days from the date when the Council issues a resolution initiating the process for articulating the vision for a Smart & Sustainable New Orleans, the Advisors shall hold two public technical conferences and shall solicit input from Councilmembers, city departments and relevant utilities.

Within 90 days of the Council issuing such a resolution, intervenors and interested community groups and other stakeholders may file written comments regarding what they believe the city's most urgent needs are and what the goals and guiding principles of the Smart & Sustainable New Orleans should be.

At the end of the 120 day period, the Advisors shall file with the Council a proposed set of guiding principles, goals and priorities for the Smart & Sustainable City program.

Interested parties shall have 60 days from the date on which the Advisors file the proposed set of guiding principles, goals and priorities for the Smart & Sustainable City program to file comments on the Advisors' proposals.

Conduct a Smart City Audit and Identify Core Needs and Gaps in Capabilities

The Council by Resolution shall direct each utility under its regulation to assign an engineer or other person with sufficient technical understanding of the system design of the utility they represent and with access to relevant data to work together under the leadership of the Council's Technical Utility Advisors to create the systems architecture and grid architecture outlined in Dr. Pechman's proposal for a Smart City Audit. Providers of other essential infrastructure and services shall be encouraged to participate in this process.

The participating entities will have 120 days to execute a data sharing agreement and six months to complete the systems architecture and grid architecture filings and submit them to the Council.

Within six months of filing the essential architectural renderings with the Council, the participating entities that are subject to the Council's regulation would have six months to conduct an audit of their respective systems. Participating entities that voluntarily participate in the process shall be encouraged to conduct a similar audit of their own systems. The audit should include: an inventory of existing assets, including identification of system components that are at or near the end of their useful lives; identification of on-going modernization efforts; identification of governance structures and mechanisms that apply to each system and an assessment of how such mechanisms or structures impact, inform or promote the city's smart city objectives.

Within six months of the filing of the essential architectural renderings with the Council, the Council's Legal and Technical Advisors and CURO should hold at least one public technical conference and complete and file with the Council a report identifying governance structures and mechanisms that apply to each system; assessing how such mechanisms or structures impact, inform or promote the city's smart city objectives; and suggesting any changes that could be made that would be beneficial to the Smart & Sustainable City effort.

Interested parties and affected agencies and service providers will have 120 days from the filing of the system audits and Advisors/CURO report to file comments with the Council identifying what they believe to be the core needs and gaps in capabilities that should be prioritized in the smart city effort. The Council would then approve and adopt a list of core needs and gaps in capabilities that a smart city Master Plan should be developed to address.

Identify Best Practices that can be Applied to New Orleans

Within 120 days from the Council's adoption of a list of core needs and gaps that the smart city Master Plan should be developed to address, relevant utilities under the Council's jurisdiction shall be required to file and interested parties and city agencies and service providers may file suggested best practices that should be used to address the core needs and gaps in capabilities. Within 90 days of the filing of comments, the Advisors shall file an Advisors' Report with recommendations on the suggested best practices.





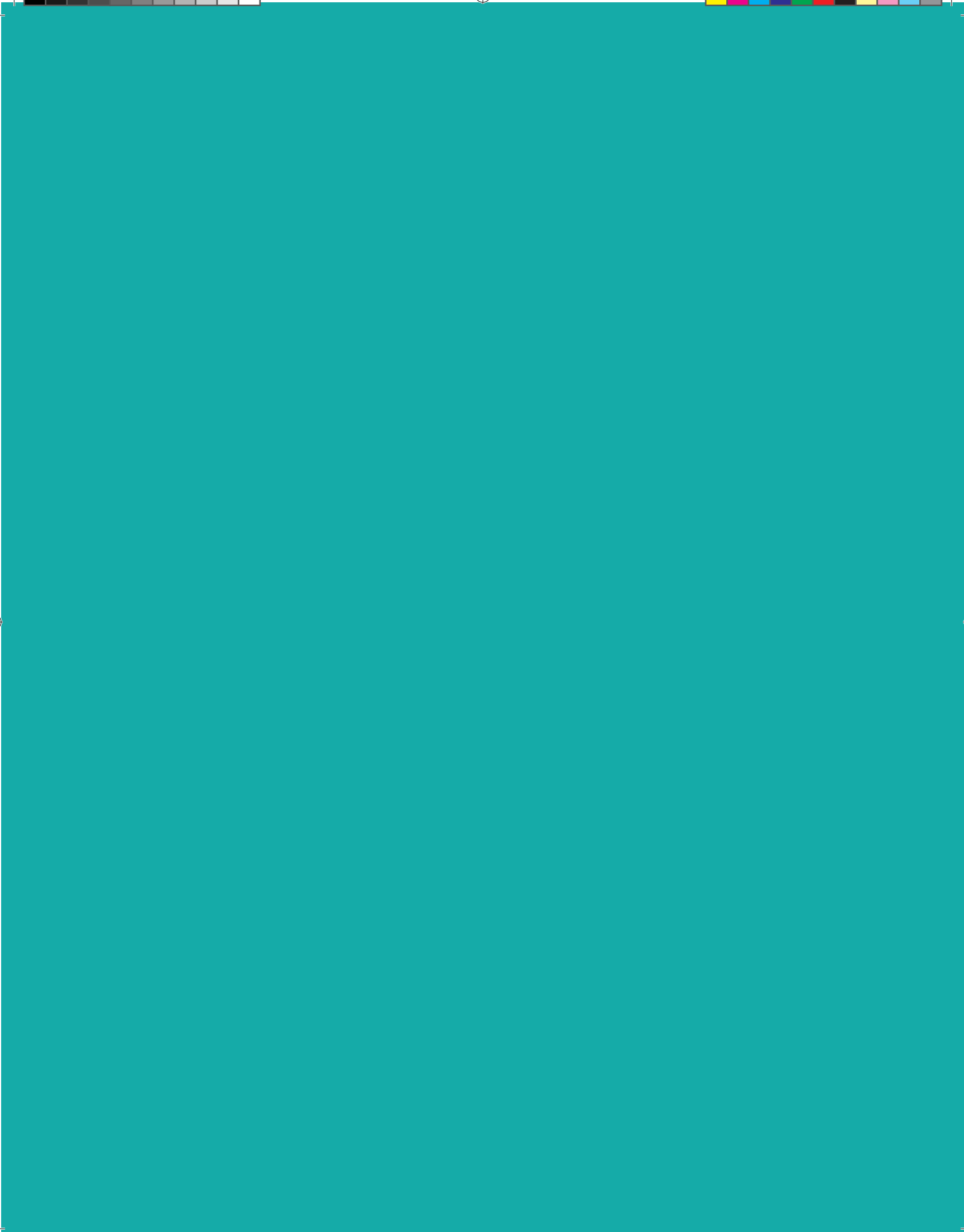
Identify Potential Partners and Funding and Financing Mechanisms for Smart Infrastructure

Once the Council has approved a list of core needs and gaps in capabilities, the Council, CURO and the Advisors should create a procedure for solution providers to submit proposals to respond to those core needs and gaps in capabilities, including issuance of Requests for Proposals or submission of expressions of interest. The Council should collaborate with or request assistance from the Administration to monitor for potential grants or other funding sources.

Produce a Draft Smart & Sustainable City Master Plan

Once the above steps are completed, the Council and interested parties can develop the Smart & Sustainable City Master Plan, including a list of priority projects. The Council should issue a resolution directing the Advisors to submit a draft list based on the input of all parties who participated in the Roadmap process of priorities and timelines for the Smart Master Plan. Interested parties would have 120 days from the filing of the recommended list of priority projects to file comments with the Council. Within 90 days of the filing of comments, the Council should host a technical conference to allow public discussion of the proposed priorities. Within 120 days of the technical conference, the Advisors shall file an Advisors Report with the Advisors' recommendations for moving forward with the list of priorities and shall submit a draft Smart & Sustainable City Master Plan with the Council to guide the Council on implementation of its smart city strategy.







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