TOWARD INCLUSIVE URBAN TECHNOLOGY

Lessons, cases, and resources developed by local technology champions and planners

by DENISE LINN RIEDL

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A Benton Institute for Broadband & Society publication
written by Benton Institute Fellow **Denise Linn Riedl**

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Broadband Delivers Opportunities
and Strengthens Communities

Contents

About This Report

Our cities are changing at an incredible pace. The technology being deployed on our sidewalks and streetlights has the potential to improve mobility, sustainability, connectivity, and city services.

Public value and public inclusion in this change, however, are not inevitable. Depending on how these technologies are deployed, they have the potential to increase inequities and distrust as much as they can create responsive government services.

Recognizing this tension, an initial coalition of local practitioners (see full list below) began collaborating in 2019 with the support of the Benton Institute for Broadband & Society. We combined knowledge of and personal experience with local government to tackle a common question: *What does procedural justice look like when cities deploy new technology?*

This guide is meant for any local worker—inside or outside of government—who is helping to plan or implement technological change in their community. It's a collection of experiences, cases, and best practices that we hope will be valuable and will make projects stronger, more sustainable, and more inclusive.

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Background: The Challenge in Building Tech-Enabled Communities

By Denise Linn Riedl, Benton Fellow and CIO for the City of South Bend, Indiana

Whether they are Wi-Fi kiosks, urban sensors, fiber networks, or built-from-scratch "smart" neighborhoods, new urban technology deployments are under the microscope. Despite the potential of these projects to drive innovation and economic growth, they are often met with mixed reception and a myriad of valid questions. Take the Quayside project in Toronto led by Sidewalk Labs. Concerned residents teamed together to create a shared list of questions about incentives, privacy, diversity, and data ownership: *Who will own/control/have access to the data that is captured by the sensors deployed in this project? How does one define empowerment in the smart city? How do we define the community that needs to be consulted and engaged on this project?*

This understandable skepticism points to a real need for better-designed processes around smart city deployments—processes that consider residents' opinions, earn residents' consent, and employ procedural justice as urban innovation is pursued.

Achieving "Build With" Standards for Smart City Planning

In the civic tech community of practice, the mantra of "build with, not for" reigns supreme. The simple phrase hammers home an important process nuance: Technology is only as good as it is welcome, relevant, and user-friendly. Although the "build with, not for" expectation has shaped the way civic hackers create new apps for our phones, it has not yet been widely embraced by the urban technologists deploying sensors, Wi-Fi kiosks, or other public technologies at our curbs. This reveals a very real and timely challenge as we pursue the 21st-century, data-rich, connected, and responsive cities we all desire so much. As more and more technology is placed in public spaces, how can we make sure city innovations are planned inclusively and align with the public interest? What do authentic civic engagement and procedural justice look like during the deployment of new smart city technologies in our communities?

I'm honored to tackle these complex questions as a Fellow with the Benton Institute for Broadband & Society, an institution known for its defense of the public interest in communications and its research at the intersection of equity and technology. During my tenure as a Benton Fellow, I investigated innovative cases of civic engagement with smart city projects, working with local leaders to knit together a framework and field guide on how planning and deployment processes can be undertaken *with* residents.

Authentic Civic Engagement for Emerging Technology

Nearly everyone agrees that inclusion and civic engagement in technology are important, but what is less certain is what ideal civic engagement should look like given a particular technology project's scope and constraints. What's also unclear is how to do civic engagement *authentically.* In the context of emerging smart city deployments, where terms like "Internet of Things" (IoT), fiber, and smart street lighting are not dinnertime conversation topics, this challenge is particularly acute.

At Smart Chicago Collaborative (now City Tech Collaborative) and currently at the City of South Bend, I've had the opportunity to both evangelize and practice civic engagement in new local technology projects. Unfortunately, like others in the field, I've also been guilty of not being specific enough when I talk about civic engagement generally. "Civic engagement" can refer to one of several different methodologies along a spectrum of technology engagement. How can we start to think about inclusion and civic engagement methodologies in smart city projects?

A Spectrum of Civic Engagement Methods for Local Technology Projects

Problem Sourcing Methods

spur proactive engagement, letting residents shape the purpose of a potential technology project. These methods can be used to understand community priorities and incorporate civic design into a technology planning process early before a specific solution exists.

Examples: Surveys | Participatory Design Sessions

Leverage problem sourcing methods when... 1) you are searching for a relevant problem or mission area and are truly open to community input **2)** you are solution agnostic and technology agnostic as how to solve that problem **3)** there is no set project.

Co-building Methods

spur proactive engagement by inviting residents into guided brainstorming and early technology building processes. Rooted in a chosen theme or mission, co-building processes can be used to create a more inclusive technology project or plan with resident input.

Examples: Themed Hackathons | Themed Workshops

Leverage co-building methods when... 1) the problem you are aiming to solve is set **2)** you are solution agnostic and technology agnostic as how to solve that problem **3)** there is no set project.

Feedback Gathering Methods

present reactive engagement opportunities for residents, allowing them to shape an existing technology project or plan. These methods can be used to ensure a more usable, relevant project or product.

Examples: Civic User Testing | Interviews | Focus Groups

Leverage feedback gathering methods when... 1) the problem you are aiming to solve is set **2)** you have decided on a solution or approach to that problem **3)** you have a draft or in-progress technology plan or project that can be responsive to resident input.

Outreach & Sharing Methods

are reactive engagement opportunities for residents, allowing them to learn more about or ask questions about a finished technology plan or product. While these types of engagements can be interactive and drive technology adoption, there is no opportunity for resident input on the project or plan itself.

Examples: A Community Launch | Training on a New Tool or Platform

Leverage outreach and sharing methods when... 1) the problem you are aiming to solve is set **2)** you have decided on a solution or approach to that problem **3)** there is a finished technology project or plan.

MORE COLLABORATIVE

As I embarked on my fellowship with the Benton Institute for Broadband & Society, I knew I wanted to collaborate with peers across the country who had already practiced or were in the process of refining some of these technology engagement methods. With Benton's support, I had the opportunity to research cases, visit peer local government workers, and develop a framework for tackling our shared challenges: A Spectrum of Civic Engagement Methods for Local Technology Projects.

The above framework drills down more deeply into the operationalization of inclusion and equity, unpacking the less useful, catchall term of "civic engagement" that I know many of us evangelize without being specific enough to inspire actionable best practices and transferable standards. At one point or another, I've heard outreach and sharing, feedback gathering, co-building, and problem sourcing referred to broadly as "civic engagement" despite the fact that the methods look very different in practice, work ideally under different project conditions, and result in varying levels of resident collaboration, inclusion, and power.

For instance, **outreach and sharing** is important and necessary in a planned technology project, but it essentially creates a one-way dynamic with the residents affected by the technology itself. **Feedback gathering** (in the form of surveys, civic-user testing, focus groups, comment periods, or draft policy annotations), on the other hand, creates a conversation with residents who seek to shape existing or in-progress smart city infrastructure and policies. Venturing further up on the spectrum of engagement is **co-building**, which invites residents' involvement in the design of solutions around a specific mission or problem already identified. **Problem/opportunity sourcing**, perhaps the most inclusive and open-ended of the categories, involves residents in the earliest stage of work, before the technology itself is planned or deployed by a city, university, or company. These types of activities are solution agnostic, inviting residents to set priorities that any technology can be designed around.

Fortunately, there are concrete lessons to be learned from inclusive smart city efforts across the U.S. These trials in authentic civic engagement, data literacy, and equity around public technology planning and building have uncovered best practices from which all cities can learn. Initiatives like Boston's Meet the Kiosks and the Smart Columbus Experience Center create spaces where residents can understand and design the use cases around new public technology on sidewalks. Kansas City's Paint the Town Green campaign ignited a grassroots network to increase Google Fiber sign-ups in the hopes of ensuring equitable infrastructure buildout across the city. Chicago's Array of Things Civic Engagement Project invited residents to shape privacy and governance policies for the Internet of Things. Seattle's Privacy Advisory Committee and resulting Data Privacy Efforts created citywide principles and policies to inform all advanced technology acquisitions and projects. The Mayor's Office of New Urban Mechanics in Boston released a request for proposals (RFP) to find a partner to assist with inclusive engagement goals around technology deployment. The project, called Beta Blocks, envisions the creation of a thoughtfully designed engagement process around new civic technologies on streets as well as "smart city" public discussions, among other things.

The rest of this guide lays out cases that all community leaders can learn from as well as tools and references that will aid them as they plan their next technology-related community projects with residents.

Cases in Smart City Co-Building

A coalition of local practitioners tapped into their experiences, compiling the following cases at the intersection of technology deployment and civic engagement. Each of these cases captures the project at a high level, emphasizing the lessons learned from each as well as the key project questions:

- Which stakeholders are driving the project?
- How set are the solutions, approaches, or technologies at the beginning of the project?
- At what point(s) in development are residents brought into the project?
- What lessons can we glean from the project?

As you review the cases, note the variety of technologies and solutions, how the driving partners shape a project, and what power dynamics naturally arise among government, private, and public stakeholders.

These cases are by no means the only compelling cases of smart city co-building. We aimed to capture a compelling cross section of types of projects with varying local constraints, stakeholders, and goals.

How Cities Bring Urban Technology Concepts Down to Earth

BOSTON, MA: A New Model for Inclusive Urban Planning: Beta Blocks

This work is primarily a...
Private Solution | Public-Private Solution | University Solution | **Community-Driven Solution**

This work will strengthen technology projects/products at:
Early Stage Co-Design | Reactive Feedback Gathering | Reactive Outreach + Sharing

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | Solution "Curious" | **Solution Agnostic**

About: Building on its work in the Smart City Playbook, the City of Boston undertook the ambitious Beta Blocks program, a process through which it will engage with residents to test new technology and new, creative uses of urban space. Boston is engaging with residents on a hyperlocal "block" level, attempting to demystify issues around smart city infrastructure and data collection in the public realm.

> "In addition to providing better infrastructure—both physical and social—we need to clarify governments' role in this, create clear policies and permitting, and make digital and data literacy programs available for all Boston residents. Beta Blocks, above all, is not some expansive deployment of sensors or gadgets, but rather an invitation for all to help us dream up what's next around the street corner." —Beta Blocks RFP

Takeaways:
- Games and art can be an interactive, accessible way for people to engage with technology and technology topics.
- A thoughtful curriculum that supports young people in deconstructing and critiquing their city streets can scaffold their involvement in intergenerational community conversations about "smart cities."
- An organic, whimsical invitation (via the Beta Blob) in a place you're familiar with (say, the library) to explore a vague topic (like "smart cities") helps scaffold healthy skepticism, an awareness of the questions at hand, and an exposure to (and deconstruction of) the jargon from industry.

Links to more information:

https://medium.com/@newurbanmechs/beta-blocks-or-an-open-question-what-is-civic-technology-b89cbcd5d23e

https://www.boston.gov/innovation-and-technology/beta-blocks

https://www.smartcitiesworld.net/news/news/boston-involves-neighbourhoods-in-urban-tech-via-local-newsfeeds-4449

https://www.thegamecrafter.com/games/beta-blocks:-the-game1

AUSTIN, TX: A Community Corps Driving Inclusion in Smart City Planning

This work is primarily a...
Private Solution | Public-Private Solution | University Solution | **Community-Driven Solution**

This work will strengthen technology projects/products at:
Early Stage Co-Design | Reactive Feedback Gathering | Reactive Outreach + Sharing

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | Solution "Curious" | **Solution Agnostic**

About: The Housing Authority of the City of Austin (HACA) created human infrastructure to build the capacity of residents, protect residents' technology-related priorities and rights, and approach technology change management in a community-based way. The innovative program, called Smart Work Learn Play, hires HACA residents to be "Smart City Ambassadors" to: (1) teach other HACA residents how to use digitally enabled education, workforce, and transportation tools; (2) advocate for and manage meaningful partnerships with private smart city technology providers; (3) engage in democratic processes, both online and face-to-face, with local and other government officials; and (4) participate in the design of smart city systems and tools with a wide array of actors.

Takeaways:

- Residents in very low-income neighborhoods have special knowledge of the built environment—the infrastructure, technical, and social landscape that is the foundation for smart city projects.
- Engagement with low-income residents means a project will be stronger. To get this engagement, you have to address several barriers, including building trust and tackling the information access barrier.

Links to more information:

https://gctc.opencommons.org/Smart_Work_Learn_Play_-_Participatory_Smart_City_Innovation_and_Digital_Inclusion_in_Public_and_Subsidized_Housing

http://projects.austintexas.io/projects/smart-city/about/definition/

Co-Building Privacy and Data Governance

SEATTLE, WA: Holistic Privacy Engagement & Equity

This work is primarily a...
Private Solution | Public-Private Solution | University Solution | **Community-Driven Solution**

This work will strengthen technology projects/products at:
Early Stage Co-Design | Reactive Feedback Gathering | Reactive Outreach + Sharing

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | Solution "Curious" | **Solution Agnostic**

About: Over the past several years, the City of Seattle has implemented a number of pioneering efforts at the intersection of privacy, ethics, and resident engagement. The city created crisp, easy-to-understand privacy principles in multiple languages, created an internal review process for how new programs and projects at the city would collect data, and opened up complex projects to public comment.

> "In 2015, we designed a citywide Privacy Program to provide guidance and tools to City employees when working with personal information. We convened a group of representatives from across 15 City departments to create policies and practices to define and implement a citywide program to address our privacy commitments. To advise these efforts, we invited a Privacy Advisory Committee of area privacy thought leaders from academia, local companies, and private legal practice and community activist groups to provide best practices recommendations." —Seattle.gov

Takeaway:
- An impactful, sustainable way to address privacy is to incorporate key questions and considerations into existing city processes around program and project development.

Links to more information:
https://www.seattle.gov/tech/initiatives/privacy/about-the-privacy-program
https://www.seattle.gov/Documents/Departments/InformationTechnology/City-of-Seattle-Privacy-Principles-FINAL.pdf
https://techtalk.seattle.gov/2019/02/05/second-public-comment-period-opening-for-technologies-subject-to-the-citys-surveillance-ordinance/

KANSAS CITY, MO: City Collaboration for Improved Data Handling

This work is primarily a...
Private Solution | Public-Private Solution | **University Solution | Community-Driven Solution**

This work will strengthen technology projects/products at:
Early Stage Co-Design | Reactive Feedback Gathering | Reactive Outreach + Sharing

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | Solution "Curious" | **Solution Agnostic**

About: Before Kansas City, Missouri, installed sensors on light posts, it began engaging with the University of Missouri–Kansas City (UMKC) Law School to understand best practices and due diligence around privacy. Students and faculty tackled the topic and started learning more about how data flows in and out of government. As the UMKC interdisciplinary student and faculty team learned more, their approach changed to be more holistic; they began looking into issues of data sharing, governance, and efficiency as well as privacy. A draft model policy for data handling was created and then improved by several teams and eventually vetted by both Kansas City, Missouri, and Kansas City, Kansas. Now, the Model Data Handling Policy has become a cross-city collaboration through the MetroLab network. The policy was workshopped by South Bend, Seattle, Asheville, and San Diego.

> "The draft Policy contemplates (i) protecting privacy and other rights of individuals and entities as part of a duty of care in a municipality in the United States for the well-being of the public it serves, and the protection of the public commons, while (ii) also pursuing opportunities to provide public benefits from data gathering, data analytics, and data-driven provision of public services in a diligent and well-monitored manner." —Introduction to the Draft Data Handling Policy

Takeaways:
- Don't assume you're asking all the right questions. Learn as much as possible about the process or problem you're trying to solve and pivot your solution as needed.
- Think and talk to a variety of stakeholders to check your assumptions.

Link to more information:

https://thelegaltechlab.com/images/UMKC_LTPP_Model_Data_Handling_Policy_Working_Draft_091219R.pdf

CHICAGO, IL: Striving for a Community-Informed Internet of Things Project & Policies

This work is primarily a...
Private Solution | Public-Private Solution | **University Solution** | Community-Driven Solution

This work will strengthen technology projects/products at:
Early Stage Co-Design | **Reactive Feedback Gathering** | Reactive Outreach + Sharing

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | Solution "Curious" | Solution Agnostic

About: After winning a National Science Foundation Grant, the University of Chicago partnered with the City of Chicago to deploy 500 multipurpose sensors across the city. These sensors were often described as "fitbits" for the city, measuring everything from traffic congestion to air quality. The partners leading the project came together before deployment to craft draft privacy and data governance policies for public review. To collect feedback on site selection and the policies, partners also conducted a series of public meetings and surveys.

> "The concepts behind AoT [Array of Things], it is safe to say, rest on rather advanced, cutting-edge technical knowledge. It took a full 70 minutes of the 90 minute session for the presenters to simply explain AoT. And of the remaining 20 minutes, all but five were devoted to basic questions." — OpenGov Foundation

> "Our recommendation for other cities or organizations undertaking smart city or IoT [Internet of Things] engagement work would be to be flexible and tool agnostic. Though the subject at hand is technology, the modes of engagement should not always be technical. In a smart city, there can still be room for lowtech outreach and engagement methods like flyering and personal outreach." —Array of Things Civic Engagement Report

Takeaways:
- Meet people where they are. For those who want to engage in person, use accessible times and places. For those who want to engage online, provide multiple feedback loops that are easy to use, give the option to remain anonymous, and allow the people who want to get in the weeds to do so. It makes the analysis of feedback chaotic, but it means you'll get more of it from a wider group of people.
- The local library is a powerful partner for public meetings and participatory design sessions.

Links to more information:
https://datasmart.ash.harvard.edu/news/article/a-guide-to-chicagos-array-of-things-initiative-1190
https://arrayofthings.github.io/engagement-report.html
https://arrayofthings.github.io/policy-responses.html

Making Private Solutions Work for the Community

BOSTON, MA: Checking Assumptions about Public Value Before a Solution Is Built

This work is primarily a...
Private Solution | Public-Private Solution | University Solution | Community-Driven Solution

This work will strengthen technology projects/products at:
Early Stage Co-Design | Reactive Feedback Gathering | Reactive Outreach + Sharing

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | **Solution "Curious"** | Solution Agnostic

About: In 2017, the City of Boston explored the possibility of deploying kiosks in the city but, before a procurement process started, wanted to engage a diverse set of stakeholders on what kind of public value and challenges such technology would present. Boston asked kiosk vendors to show prototypes to residents. Residents were also engaged in conversations around privacy and design. In fact, the City of Boston invited the ACLU to be part of the conversation.

> "Our goal is to open the conversation regarding Smart Cities projects in order to truly understand what it means to be a 'smart city.' Often such projects think about technology first and only then establish the problems they are trying to solve. We want to flip this process in Boston, incorporating the voices of community members and leaders from the outset." —Meet the Kiosks Event Page

Takeaways:
- Start with the conversation about public value instead of the tempting trap of "How do we replicate X new and interesting project in our city?" Meet the Kiosks did just this, forcing all stakeholders to anchor around that center of gravity before a procurement process even began.
- A successful procurement is not necessarily a win. Not buying technology when it's not needed should be celebrated as a healthy course of action for any resident-centric, smart city.
- Invite privacy advocates to engage with you early. Let them criticize you and make your projects, ideas, or policies stronger.

Link to more information:
  https://www.northeastern.edu/csshresearch/bostonarearesearchinitiative/event/meet-the-kiosks/

KANSAS CITY, MO: Grassroots Movement for a More Equitable Fiber Footprint

This work is primarily a...
Private Solution | Public-Private Solution | University Solution | Community-Driven Solution

This work will strengthen technology projects/products at:
Early Stage Co-Design | Reactive Feedback Gathering | **Reactive Outreach + Sharing**

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | Solution "Curious" | Solution Agnostic

About: Kansas City partners started a grassroots door-to-door campaign to increase the odds of an equitable residential fiber deployment. When Google Fiber entered cities like Kansas City, the company created "fiberhoods," or residential boundaries. In each fiberhood, Google sought a certain threshold of sign-ups to make a case for buildout. In order to ensure that this large private-sector investment didn't laminate historical inequities, a group of residents organized a campaign to get as many fiberhoods as possible eligible for Google Fiber.

> "...Aaron Deacon, president of the Social Media Club of Kansas City, spearheaded Paint the Town Green, a Kickstarter-style project to raise money to pre-register households in low-income neighborhoods. He said that hundreds of volunteers helped make the final push to get residents signed up. Much of the bottleneck in getting neighborhoods signed up wasn't convincing residents to join, he says, but in enlisting enough volunteers to process those residents' signups through Google's somewhat cumbersome pre-registration system." —Wired

Takeaways:

- Although residents were not engaged earlier, this is an excellent example of how a community can exercise some power over a deployment they do not own or control.
- KC Digital Drive and other public-private entities in cities can be powerful catalysts to make sure that private change or investments, where the government has less say, can be, to a certain degree, resident-informed.
- Regardless of the ultimate results of Google Fiber, the fact that a grassroots campaign like this was started—so that over 90 percent of the city was deemed eligible for buildout—is significant.

Links to more information:

> https://www.wired.com/2012/09/most-of-kansas-city-set-to-get-wired-with-google-fiber/
> https://www.kcdigitaldrive.org/project/paint-the-town-green/

Co-Building Applications or Tools

CHICAGO, IL: Inviting Residents to Co-Design a New 311 System

This work is primarily a...
Private Solution | **Public-Private Solution** | University Solution | Community-Driven Solution

This work will strengthen technology projects/products at:
Early Stage Co-Design | Reactive Feedback Gathering | Reactive Outreach + Sharing

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | Solution "Curious" | Solution Agnostic

About: At the end of 2019, Chicago launched its new 311 service system, "CHI 311." Before CHI 311, residents called problems and service requests in. Now, through CHI 311 (a website and a mobile app), residents can do those tasks online, see other requests around them in their neighborhood, and track the progress of their service request. The city government invested in usability testing and human-centered design methods to make sure that the new tools were relevant and easy to use.

> "Just as meaningful as the massive technical changes is that the relaunch was undertaken in genuine consultation with a host of stakeholders, including residents, community groups, and aldermen in libraries and community colleges all over town. DuMerer's Department of Innovation and Technology (known as DoIT) carried out in-person design workshops and focus groups to make sure the department understood what Chicagoans wanted." —Wired

Takeaway:
Engage with residents early and often, well before a prototype is made and well after the app is built.

Links to more information:
https://www.wired.com/story/chicago-311-huge-win-for-public-works/
https://chicago.suntimes.com/2018/12/17/18381937/need-a-streetlight-fixed-or-pothole-filled-there-s-an-app-for-that
http://adambabin.com/project_5.html
https://www.citylab.com/sponsored/stephen-goldsmith-new-city-os/a-distributed-government-by-the-people-for-the-people/238/

ASHEVILLE, NC: Leveraging Data & Technology to Engage Residents on Policy Changes

This work is primarily a…
Private Solution | Public-Private Solution | **University Solution** | Community-Driven Solution

This work will strengthen technology projects/products at:
Early Stage Co-Design | **Reactive Feedback Gathering** | Reactive Outreach + Sharing

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | Solution "Curious" | **Solution Agnostic**

About: The City of Asheville decided to undertake a full public engagement process on formulating a new noise ordinance after an initial revision led to significant pushback from residents and the City Council. Initial public input was gathered through a combination of an online survey, public meetings, and deployment of the Noise Score mobile app developed by Boston University. After analysis of data on noise complaints indicated that a significant proportion of complaints were filed in neighborhoods and public housing communities with historically marginalized populations that were not well represented in the feedback received, the City undertook additional targeted outreach through resident councils, churches, and community groups to ensure that all those impacted were represented. At the time of writing, the process is ongoing. Draft revisions are expected to be posted for public comment in spring 2020.

Takeaways:

- Show up. Have planners meet the community where they are (resident councils, neighborhood associations, community groups, churches, etc.).
- It's important to accept that inclusive public engagement makes the process slower and more expensive. Get buy-in to do it right.
- Use a combination of low-tech engagement, data and GIS analysis, online surveys, and special-purpose tools to ensure that public engagement on policy includes everyone who is impacted.

Links to more information:

https://www.ashevillenc.gov/department/communication-public-engagement/projects-and-initiatives/noise-ordinance-revisions/

https://wlos.com/news/local/noise-pollution-in-asheville-theres-an-app-for-that

https://wlos.com/news/local/asheville-continues-work-on-noise-ordinance

Test Beds with Residents' Input, Ideas, and Feedback

LOUISVILLE, KY: Community-Informed Neighborhood Technology Plan

This work is primarily a...
Private Solution | Public-Private Solution | University Solution | **Community-Driven Solution**

This work will strengthen technology projects/products at:
Early Stage Co-Design | **Reactive Feedback Gathering** | Reactive Outreach + Sharing

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | Solution "Curious" | Solution Agnostic

About: Smart Russell is an ongoing suite of technology infrastructure projects informed by Vision Russell, a grassroots-based community engagement and planning process. Smart Russell focuses on improving the neighborhood by investing in projects that improve public safety and connectivity. The initiative is installing 80 smoke detectors in vacant properties, 2.2 miles of 288-strand fiber-optic cable, 29 free Wi-Fi hotspots, and five smart bus stops in consultation with residents. The project is also working with Louisville Metro Police to install around 30 public-safety cameras in the pockets of the neighborhood most impacted by violent crime.

> "The Vision Russell process, the precursor to the [U.S. Department of Housing and Urban Development] Choice Neighborhood grant application, included an extensive, inclusive community engagement process to map the issues of the community by its residents. Vision Russell identified several critical issues to address including public safety, vacant and abandoned properties, along with general connectivity issues. Looking at these issues through the lens of making Russell the smartest neighborhood in our Smart City, the Office of Civic Innovation and Technology worked with partners to develop a neighborhood technology strategy named Smart Russell to make Russell a better place to live, work, and play." —Medium.com

Takeaways:

- You don't have to build engagement from scratch. Partner with existing events and people deeply embedded in the community. If you already have the relationships and the human infrastructure, work goes faster.
- Build trust as an individual, as an ambassador for your institution.
- With sensitive projects, like those involving public safety, co-building requires more engagement to be considered a legitimate process than a less sensitive project.
- Look for the ways you can change the system and feedback loops to ensure the inclusion of vulnerable groups in decision-making processes to prevent smart city work from further encoding historical injustices into your organization.

Links to more information:

https://visionrussell.org/
Smartrussell.louky.city
Smart Russell: Community engagement lessons learned
https://www.whas11.com/article/news/local/third-smart-stop-bus-shelter-completed-in-russell-neighborhood/417-ec31a2ca-b07a-4088-87c8-1bc66c020c14

CHATTANOOGA, TN: Urban Sensing for a Safer Neighborhood Corridor

This work is primarily a...
Private Solution | Public-Private Solution | **University Solution** | Community-Driven Solution

This work will strengthen technology projects/products at:
Early Stage Co-Design | **Reactive Feedback Gathering** | Reactive Outreach + Sharing

When stakeholders started engaging with residents, how set were they on the solution?
Solution Set | Solution "Curious" | Solution Agnostic

About: Chattanooga's MLK Smart Corridor is a collaboration with the Center for Urban Informatics and Progress (CUIP) at the University of Tennessee at Chattanooga; the City of Chattanooga; The Enterprise Center, an economic development nonprofit partner focused on civic innovation and digital equity; and EPB, Chattanooga's municipal fiber provider. Leveraging Chattanooga's unique citywide fiber-optic network, the test bed features interconnected traffic signals, wireless networks, solar panels, cameras, and air-quality sensors. The corridor's smart city features aim to predict—and eventually enable interventions that prevent—vehicular and pedestrian accidents in the area, as well as support economic development initiatives utilizing the information collected from the test bed.

> "When we created a framework plan for our Innovation District in 2018, we envisioned using the city as an urban lab. The MLK Smart Corridor embodies that vision. With an asset like our fiber-optic network, it just makes sense to harness its power as a community, to create solutions that will help the people who live here. This collaboration is a powerful and tangible outcome of a community that works together to solve problems." —Deb Socia, The Enterprise Center via GovTech

Takeaways:

- Build open, utilizing mutable platforms that can be adapted to meet the changing needs of the community while still serving their intended purpose. If the original scope is not serving the community, focus on ways to build incrementally and address those needs.

- If there isn't an opportunity to build with the community, be honest about that. Honesty and transparency still matter and can help to build trust: Engage around what can be done, i.e., the search for other ways in which platforms can serve community needs.

- Too often, communities undertake projects that gather data to quantify problems the community is already intimately aware of. Instead, look for ways that the initiative can empower the community, allowing residents to advocate for themselves more effectively.

- Community engagement is an ongoing process, not an event. Some opportunities dead-end, but continuing to look for opportunities to build on previous investments can pay off, as illustrated by the pending expansion of a test bed based on the needs and input of residents of an affordable housing development in Chattanooga's Innovation District.

Links to more information:

https://www.us-ignite.org/community/chattanooga-tn/
https://chatechcouncil.org/chatech-hosts-iot-and-mlk-smart-city-corridor-connect-event/

Summary of Lessons

In discussing their experiences and projects, local collaborators all agreed on several key patterns that emerged around what has worked and what has not. Below is a working list of our "Do's and Don'ts."

DO:

Delight and Inspire. Games and art can be an interactive, accessible way for people of all ages to engage with technology and complex technology topics emerging in our cities. This lesson is beautifully demonstrated in the work that Boston has undertaken.

Create processes of inclusion that will outlast your project, making the next one and the next one after that even better. Create an interagency/interdepartmental group on civic engagement that strengthens all city projects. Several contributors pointed to formal and informal examples of this in their own cities and how, when internal silos are broken down, some of the most impactful work can begin.

Engage with residents early and often. Healthy engagement is like exercising a muscle—consistent work over long periods of time makes for a stronger ecosystem.

Lower barriers of engagement as much as possible. Meet people where they are in person and online. Generate content in as many languages as your community needs. Keep in mind that for our most vulnerable residents, time is precious and expensive. Make it as easy and streamlined as possible for a diverse audience to provide feedback on your work.

Check your assumptions. For instance, don't assume…
- That you understand public opinion before you go ask the public.
- That the public value of a potential technical solution resonates with your community—it might not!
- That you're asking all the right questions and talking to all the right people.

DON'T:

Ignore residents' local expertise. Residents are experts in their communities, their local experiences, and the needs of themselves and their neighbors. Sometimes well-meaning technologists and researchers measure a problem that a community already knows exists. Throughout civic engagement on a technical project, we should be asking how we can, as much as possible, transfer respect and power to that local expertise so the process feels inclusive.

Ask for feedback on things that cannot realistically be changed. Sometimes projects come with technical and/or funding constraints. For instance, a federal grant for a smart mobility project comes with expectations and deliverables. Post-award, a community can shape how that mobility project happens, but it cannot redirect those funds to another cause. Therefore, when engaging with residents on a project, be honest and clear about what can be influenced and what cannot.

Rush change for the sake of a win, a grant, a procurement, or a press release. Acknowledge that doing things right sometimes means doing things slowly. Success sometimes looks like stopping a project and not buying or deploying the technology at all.

A Closing Reflection on Smart Cities and Public Service

Smart city technology will not save us.

Every few months, an op-ed or a digital thought piece will appear, chiming in to agree with this sentiment. Technology itself is not progress and improvement. Rather, technology is agnostic—a vehicle to be used for both good and bad, just as most things can be, depending on how it is deployed, who is included in the planning, and whether it deepens or combats existing inequality.

Despite the realization that smart city technology in and of itself is not transformational, there's still room for optimism about the future of technology in cities. That optimism is fueled by the people who helped create this guide. Among them are government project managers, advocates, data analysts, academics, and lawyers. Each is an expert in their role, but each also is passionate about making sure that residents are included in the planning of our future cities.

While 21st-century technology necessitates new policies and programs in our cities, it also requires something cities have always needed: passionate, competent people who know enough about technology to lead technical projects and enough about policy and civic engagement to protect the public interest. Each of the collaborators who have contributed to this guide hit that sweet spot.

When participants convened during the summer of 2019, we held our workshop at Columbia College of Chicago. At the time, the school was creating a new Master of Civic Media degree. Eric Freedman, the Dean of the School of Media Arts, asked each attendee: How did you get into this field? How did you start doing this work? What helped you think about the intersection of technology, policy, and ethics? Everyone had a different answer and a different path.

Although smart city technology won't save us, any sustainable, inclusive value we extract from these technologies will come as a result of the passionate, protective public servants/ collaborators in this guide. We should be training and cultivating technically competent public servants at the same rate we are building the technology they will help deploy.

Resources

Ethics & Engagement Checklist

Questions to answer for any emerging public technology project. Our recommendation would be to sit down with project stakeholders early and answer these questions together, looping in perspectives from technologists, lawyers, and advocates.

Achieving Community Consent, Authentic Engagement
- How do we meet people where they are when we introduce new tech well?
- What are the best methods/mediums of engagement on this project?
- How do we have authentic conversations? What traps should we avoid?
- Who should be involved?

Privacy & Governance
- How do we communicate trade-offs between public value and privacy risks?
- What does consent look like?
- What does procedural justice look like as this is rolled out?

Human, Not Tech-Centered Innovation
- How do we ensure that this "smart city" project is rooted in real, prioritized local problems?
- How can these projects be co-built or co-designed with residents?

Partners Checklist

Local partners who can help you get data for problem definition:
- A local data intermediary like a university research center or data-driven nonprofit
- A county's IT office
- A city's IT office

Local partners who can host community meetings in welcoming, accessible spaces
- Library system
- Local housing authority
- Local school district
- Neighborhood community centers
- Partners like Goodwill, YMCA, and Boys and Girls Clubs

Local partners who can contribute expertise to issues of technology governance
- Law school faculty
- Community champions
- Council members
- Mayor's office

Local partners who can help with participatory design sessions
- City innovation team
- University design or HCI department

Local partners who fundamentally understand baseline technology equity in the city—important context for any smart city project
- Library system
- Local housing authority
- Local school district
- STEM youth programs
- Digital-inclusion programs, nonprofits, or trainers
- PC reselling and refurbishing organizations

Local partners with a proven track record for reaching the vulnerable and marginalized
- Homeless shelters and nonprofits
- Nonprofits serving refugees and New Americans
- Nonprofits and workforce partners who serve persons with disabilities
- Nonprofits and workforce partners who serve veterans
- Nonprofits and workforce partners that provide assistance in multiple languages

Literature of Interest

Array of Things Civic Engagement Report
Boston Smart City Playbook
Recommendations for the Deployment and Implementation of Distributed Sensor Networks
Seattle Privacy Principles
Smart Cities and Digital Equity by John Horrigan
Smart City PHL
UMKC Data Handling Policy
Why Smart Communities Need Digital Inclusion

National Networks & Communities of Practice

Berkman Klein Center
Future of Privacy Forum
Georgetown Law Center on Privacy & Technology
Legal Technology Laboratory
MetroLab Network
National Digital Inclusion Alliance
National Neighborhood Indicators Partnership
National Telecommunications & Information Administration
Next Century Cities

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