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The Smart Region Vision

Transform Northern Virginia and the Greater Washington region into a global urban innovation hub and national test bed for new digital services and capabilities to improve the livability, sustainability, health, and resilience of cities and communities.
The world has entered into a new era of action. Unprecedented urbanization and the rising risks and consequences of climate change have catalyzed urban communities and municipalities across the globe to embrace digital solutions to advance local imperatives and priorities. As a result, regions and cities have become the engines and laboratories of change to tackle some of the most difficult challenges we face: affordable housing, public health, traffic, water scarcity, sustainable growth and climate change.

Today, local governments, through local action, can play a vital role in not only improving the livability, resilience, performance and sustainability of their communities, but they can help reach national climate and energy targets, strengthen national resilience, and forge a more sustainable future. By scaling local innovation regionally, particularly through improvements on how we design, build, and operate shared infrastructures, local solutions can more rapidly and comprehensively foster mutual economic, sustainability, and resilience goals across an entire region, while also addressing key local needs.

The Northern Virginia and Greater Washington Smart Region Initiative provides this type of catalyst and opportunity. Made possible in large part through an i6 Challenge grant awarded by the U.S. Economic Development Administration's (EDA), the Initiative brings together government, academic, commercial, and nonprofit partners to foster the development and administration of a smart city technology innovation cluster to tackle local urban challenges and help grow the economy in Northern Virginia and the Greater Washington Region.

The Initiative is led by Smart City Works, a nonprofit next-generation business accelerator whose mission is to improve the livability, operations, and
resilience of cities. Since 2016, Smart City Works has built a reputation as a leader in the emerging ecosystem of businesses, universities, and governments in Northern Virginia investing in smart city technologies and has launched more than 20 companies with market-ready solutions that respond to key infrastructure and urban challenges. Its main partner, Refraction, is a leading nonprofit innovation hub supporting and mentoring startups and high-growth companies.

The initiative will focus on achieving 5 key goals:

- **Identify** top regional innovation priorities to tackle local urban challenges
- **Grow** the number of urban tech startups solving regional priorities and accelerate commercialization of their innovative products
- **Advance** the training, education, and development of local tech talent
- **Develop** and maintain regional test beds and living laboratories to support validation pilot projects and facilitate scalability
- **Promote** and sustain innovation, entrepreneurship, commercialization, and economic development through fostering of a regional innovation cluster

Over the three-year period of the i6 Challenge Grant, the Smart Region Initiative will create a stronger regional innovation system that will attract talent and capital to the region, stimulate economic development that benefits the entire community, and help solve the region’s key infrastructure and urban challenges.

We expect companies from across the world will not only graduate from the business acceleration program and help employ their solutions locally, but may also relocate to the region to grow and scale their businesses. Among these, a great number of new products or services will be launched, apprentices trained, and high-tech jobs created, each contributing to and creating positive social impact in communities across the region, and the world.
Northern Virginia is an economic powerhouse for the Commonwealth of Virginia and a major economic driver for the greater Washington metropolitan area. The Greater Washington metropolis, which includes Northern Virginia, is the 5th largest urban economy in the U.S. by GDP (see Figure 1). The Northern Virginia & Greater Washington Metro Region sits at the heart of the Richmond - Baltimore corridor, a mega-region that, itself, is the 3rd largest regional economy in the U.S., and the 7th largest in the world, with more than $650 billion in annual GDP.

The Smart Region Initiative will take root in a region that is filled with entrepreneurial activity, ideas, and inventions; has a thriving business community (largely based in technology); contains one of the most highly educated workforces in the nation; world-class universities; many of the nation’s leading federal research facilities; 55 of the
Fortune 1000 companies, and an emerging hub for the application of smart city technologies.

Four top-ranked educational institutions that support the Initiative (Virginia Tech, George Mason University, University of Virginia, and Northern Virginia Community College) are focused on building a highly skilled technology workforce, cultivating talent in data analytics, information technology, engineering, and entrepreneurship. The region’s status as an innovation hub has been elevated as a result of winning Amazon’s HQ2, which will bring 25,000 high-paying jobs and a new $1 billion Virginia Tech Innovation Campus to Northern Virginia.

Despite regional strengths, this area is also characterized by significant wealth disparities, growing inequity, increased traffic congestion, lack of affordable housing, aging infrastructure, and limited public resources. Between now and 2045, the region is expected to grow by over 1 million additional residents, putting further demands on vital infrastructure and services.

Managing this growth in a sustainable and equitable way—and enhancing the region’s quality of life—will require coordination, innovation, and investment. The health of a region’s economy, as well as its population, is underpinned by the effectiveness and efficiency of its civil infrastructure. The development of smart city technologies can provide new tools and data analytics capabilities that allow governments to manage limited resources, grow the economy, address equity gaps, and forge more livable and sustainable communities.

In response, many Northern Virginia localities are exploring how smart technologies can offer solutions to infrastructure challenges and have demonstrated a readiness to undertake innovative approaches. For instance, in 2018, Fairfax County partnered with Smart City Works to host a Smart Cities Readiness Workshop. This event was designed to help Fairfax County advance the use of innovative technologies, data, and analytics to better deliver services and programs to its residents. The event convened 200 experts from county agencies, public schools, universities, nonprofits, utilities, and regional transportation agencies. Other jurisdictions in the region have initiated pilot programs, including Alexandria City’s Smart Mobility Initiative and Herndon’s LED, Wi Fi, and Sensor pilot program. The Commonwealth of Virginia is also investing in smart region innovation.

Building on the work of the Virginia Smart Communities Working Group, Virginia now has a Smart Communities State Action Plan, which calls for establishing pilot projects to begin the process of building capacity and expertise across the Commonwealth.
Another challenge for Northern Virginia and the greater Washington Metro region is that it is represented by numerous counties, cities, and towns. It has been a challenge for these different localities to cooperate to solve their common problems that do not stop at government borders, whether it is transportation, water, energy, resilience, urban planning, or housing. Further complicating this challenge is that the solutions often lie with the private-sector, requiring creative financing approaches that have historically been difficult to achieve.

As the challenges grow, the need to collaborate—among government entities and between the government and the private sector—becomes critical. This requires significant disruption of the old stove-piped top-down models of governance, and, instead, embracing new bottom-up approaches that have been the hallmark of 21st century innovation, the gig-economy, and even national public sector innovation, like preventing domestic terrorism and building national resilience.

In short, effective solutions require breaking down jurisdictional barriers and building up regional consensus and capabilities. The Northern Virginia and Greater Washington Smart Region Initiative will leverage the resources from across governments, businesses, academia and beyond to bridge the gap between innovators and local governments and help foster innovation to meet the growing needs of the region.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Metropolitan Area</th>
<th>2016 GDP (Est.)</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>New York-Newark-Jersey City, NY-NJ-PA</td>
<td>$1.43 trillion</td>
<td>20.1 million</td>
</tr>
<tr>
<td>#2</td>
<td>Los Angeles-Long Beach-Anaheim, CA</td>
<td>$885 billion</td>
<td>13.3 million</td>
</tr>
<tr>
<td>#3</td>
<td>Chicago-Naperville-Elgin, IL-IN-WI</td>
<td>$569 billion</td>
<td>9.5 million</td>
</tr>
<tr>
<td>#4</td>
<td>Dallas-Fort Worth-Arlington, TX</td>
<td>$471 billion</td>
<td>7.2 million</td>
</tr>
<tr>
<td>#5</td>
<td>Washington-Arlington-Alexandria, DC-VA-MD-WV</td>
<td>$449 billion</td>
<td>6.1 million</td>
</tr>
<tr>
<td>#6</td>
<td>Houston-The Woodlands-Sugar Land, TX</td>
<td>$442 billion</td>
<td>6.7 million</td>
</tr>
<tr>
<td>#7</td>
<td>San Francisco-Oakland-Hayward, CA</td>
<td>$406 billion</td>
<td>4.7 million</td>
</tr>
<tr>
<td>#8</td>
<td>Philadelphia-Camden-Wilmington, PA-NJ-DE-MD</td>
<td>$381 billion</td>
<td>6.1 million</td>
</tr>
<tr>
<td>#9</td>
<td>Boston-Cambridge-Newton, MA-NH</td>
<td>$371 billion</td>
<td>4.8 million</td>
</tr>
<tr>
<td>#10</td>
<td>Atlanta-Sandy Springs-Roswell, GA</td>
<td>$320 billion</td>
<td>5.8 million</td>
</tr>
</tbody>
</table>

**FIGURE 1 - Economic Might by U.S. Metro Region**

Source: U.S. Bureau of Economic Analysis (2016)
The Smart Region Framework

Summary of our framework:

<table>
<thead>
<tr>
<th>PROGRAM OBJECTIVES</th>
<th>PROGRAM ELEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Understand Local Needs &amp; Challenges</td>
<td>(1) Regional Convening</td>
</tr>
<tr>
<td>(2) Develop Regional Innovation Priorities</td>
<td>(2) Regional Priority Setting</td>
</tr>
<tr>
<td>(3) Deliver Solutions</td>
<td>(3) Innovation Acceleration</td>
</tr>
<tr>
<td>(4) Validate Solutions Locally</td>
<td>(4) Demonstration &amp; Validation</td>
</tr>
<tr>
<td>(5) Foster High-Tech Workforce</td>
<td>(5) Workforce Training</td>
</tr>
<tr>
<td>(6) Scale Solutions Regionally</td>
<td>(6) Solutions @ Scale</td>
</tr>
<tr>
<td>(7) Grow Smart Region Innovation Ecosystem</td>
<td>(7) Impact Tracking</td>
</tr>
</tbody>
</table>

Description

The aim of the Smart Region Framework (and associated program) is to put in place and grow a regional system of innovation and entrepreneurship to scale the development and deployment of much-needed urban solutions—new technologies and new capabilities that will improve the performance, resilience, and quality of life of cities and communities across the region and beyond. The Framework emphasizes optimizing local priorities, while maximizing the unique strengths, benefits and characteristics of each community and municipality in the region.

There are seven program elements in the Framework:

1. **Regional Convening.** The initiative will facilitate regional understanding of urban innovation needs and priorities pertaining to local and regional transportation, housing, water, energy, sustainability, safety, and other infrastructure-related and municipal goals.

   → **Key Program Deliverable:** A *Smart Regional Leadership Council*, comprised of senior government, business, and university executives will be established and engaged.
2. **Regional Priority Setting.** Based on this understanding (#1), the region will develop and publish a list of priority innovation gaps/capability needs to be developed, tested, and validated through incubation, acceleration, and commercialization programs.

   ➔ **Key Program Deliverable:** A *Call-for-Innovation/ Capability Needs* will publish twice-yearly, soliciting leading start-ups and entrepreneurs globally.

3. **Innovation Acceleration.** Top start-up companies responding to the Call for Innovation (#2) will be selected into a highly tailored 90-day intensive business accelerator program designed to propel cohort companies into the marketplace endowed with proven products and equipped with the skills to grow and compete for market share and funding.

   ➔ **Key Program Deliverable:** A 90-day *Business Acceleration Program* will be held twice-yearly.

4. **Demonstration & Validation.** To achieve successful market entry, startups need to validate the viability of their products. This is vitally important for commercial traction and growth. Through local government and industry partnerships, the Initiative will foster the development of a Living Labs Network – test beds and pilot opportunities for startups to demonstrate, test, and validate the capabilities of their products or services. These efforts provide the critical bridge between communities setting priorities and realizing impact, and between innovators creating solutions and commercializing them.

   ➔ **Key Program Deliverable:** A *Living Labs Network* of local government and private sector test beds and pilot opportunities and a *Smart Projects Report* providing key lessons and results from local smart technology projects.

5. **Workforce Training.** In parallel with and in support of emerging technology and business acceleration programs, work force training will be advanced, through new apprenticeship, coaching, and internship programs to train start-ups, grow the entrepreneurial pipeline, and foster the development of next generation technologists and entrepreneurs to build and sustain a 21st century workforce for the region.

   ➔ **Key Program Deliverable:** The *Apprenticeship Program* will attract, prepare, and retain qualified workers to work in startups and high-growth companies and will match apprentices to companies as an alternative career pathway to traditional two- or four-year college degrees.
6. **Solutions @ Scale.** Once pilot projects have been concluded (#4), results will be presented to the Leadership Council (#1) to afford opportunities to scale solutions regionally.

→ **Key Program Deliverable:** A **Smart Regional Leadership Council**, comprised of senior government, business, and university executives will be engaged.

7. **Impact Tracking.** Cultivate a regional Smart City Technology Cluster and Ecosystem to support improving the city performance, resilience, quality of life and the growth of Smart City solutions, companies, and talent.

→ **Key Program Deliverable.** A **Smart Region Annual Report** tracking the growth and impact of the Smart Region Initiative.

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**The Smart Region Framework**

![Diagram of the Smart Region Framework](image)

Figure 2
Our Smart Region Partnership

The Smart Region Initiative brings together civic-minded leaders from nonprofit, government, private sector, and academic organizations. Ten essential partners have committed significant resources and in-kind contributions to achieve the Initiative's bold vision and goals:

- **Smart City Works**: Smart City Works has developed and implemented a successful accelerator program and has become a leading voice on smart city technologies in the region and across the country.

- **Refraction**: Refraction has built the premier collaborative innovation hub in the greater Washington region. Nearly 100 companies have been members of the Refraction community, collectively raising more than $250 million.

- **Amazon Web Services**: Amazon’s $26B cloud computing business, which has a significant presence in Northern Virginia and vast experience working with high-growth companies, will mentor, train and provide technical resources for the Initiative’s startups.

- **Alpha**: A woman-owned construction consulting firm, Alpha provides engineering and technology services to support building, heavy infrastructure, energy, and transportation projects.

- **Cushman & Wakefield**: Cushman & Wakefield is a commercial real estate leader with operations in 70 countries.
Northern Virginia Community College

NOVA is the largest public educational institution in Virginia and the second-largest community college in the United States, comprised of more than 75,000 students and 2,600 faculty and staff members. NOVA is also one of the most internationally diverse colleges in the United States, with a student body consisting of individuals from more than 180 countries.

Fairfax County

Virginia’s largest county with 1.1 million residents, and the most populous in the greater Washington metro region, Fairfax County has been a leader in the region, advancing efforts to drive innovation, spur entrepreneurship and grow emerging high-growth companies and the technology workforce.

Virginia Tech

Virginia Tech is the Commonwealth’s most comprehensive university and home to its soon to be created Innovation Campus – a new mixed-used development in National Landing. It is the home of extensive partnerships across the region to translate scholarship into practice.

Arlington County

Arlington County is a national leader in sustainable transportation and smart growth. Home to Amazon’s HQ2, Arlington is dedicated to the preservation and enhancement of an economically competitive and sustainable community, and the creation of exciting, diverse and amenity-rich places.

Virginia Center for Innovative Technology (CIT)

CIT is the Commonwealth of Virginia’s government arm that focuses on supporting innovation, commercialization, and entrepreneurship.
Building Our Future

Building the Future Together

We are actively seeking partners. Please contact us at:

innovate@smartcityworks.io