Pre-Proposal Grant Submission to
Heinz College
Traffic 21 Program

Innovation Oakland Project

Remaking Cities Institute
Carnegie Mellon University
8 November 2009

1. Project Summary

The Project

Innovation Oakland is a community-wide wayfinding infrastructure initiative that celebrates the Oakland community as an international center of new technology and research innovation. Innovation Oakland will combine state of the art technology, cutting edge design, sustainable practices, and multi-layered community planning to provide a comprehensive wayfinding information system, utilizing both analog and digital formats, benefiting the over 100,000 daily users and the residents of Oakland. Innovation Oakland will strengthen this vitally important Pittsburgh neighborhood by:

- making it easier to identify and find businesses, services, amenities, cultural attractions, and educational and medical institutions
- making real time transit, parking, and traffic information available
- coordinating public and private intelligent transportation and information systems
- breaking down the barriers between the community and the campuses
- encouraging innovation, creative thinking, and research and development
- developing new technology companies and jobs for the 21st century
- training and utilizing local talent

Innovation Oakland, spanning four square miles of pedestrian-packed environments with multiple bus lines, extensive parking, and a heavily used traffic network, will re-conceptualize information flows in the urban environment. Solutions will include analog signage, digital kiosks with interactive LED touch screen displays and web-based data, and wireless data delivery to hand held digital devises and remote computers. Innovation Oakland will highlight Oakland's unique assets while providing critical information such as real time public transportation schedules, parking availability and locations, ZipCar locations and availability, bike rack locations, community events, hospital facilities, museum exhibits, and locations and descriptions of the many restaurants, retail, and service businesses. Innovation Oakland will be user friendly, engaging and informing residents, workers, students, and visitors.

The technology growing out of Innovation Oakland will foster economic development, promote intellectual, social and cultural interaction in the Oakland community, and connect to the broader region, particularly to Downtown Pittsburgh and the Pittsburgh International Airport.

2. The Problem and the Opportunity

Oakland is the third largest Downtown in Pennsylvania after Center City Philadelphia and Downtown Pittsburgh. But for 100,000 daily visitors and workers and for permanent residents, this reality is not reflected in the image and feel of Oakland. More importantly, the "flows and energy" that give vibrancy to a place, the "flows and energy" that are essential for creativity and social vitality, are not always evident at the street level. This issue was addressed in the 1979 *Master Plan for Oakland* and later in the 2002 *Future of Oakland: A Community Investment Strategy*, both of which had public participation. Progress has been made implementing some of the recommendations of those studies, such as the development of Schenley Plaza, affordable housing, and traffic improvements.

Oakland has evolved as a collection of neighborhoods and campuses, each with an inward focus. But Oakland is also where community life and campus life most overlap in Pittsburgh. Oakland serves not only as a regional center (with international focus and attention) but also as a local neighborhood (a place for fellowship, leisure, families, businesses and residences). The public assets of Oakland include parks, plazas, libraries, museums and over two hundred restaurants and retail establishments. Not enough attention has been paid to the "space in-between," the space where workers, students, patients, visitors, customers, and residents come together. The interaction between people, information, and economic exchange is critical for creativity and invention, the cornerstones of economic activity in the 21st century. Nor has enough attention been paid to providing easily accessible real time information on "getting to and around Oakland," including transit schedules, parking availability, and traffic congestion alerts that are the hallmarks of a successful intelligent transportation system.

Additionally the impact of a proposed Bus Rapid Transit (BRT) connection between Oakland and Downtown on wayfinding and universal mobility will be addressed in the Innovation Oakland planning process and in the final recommendations. The wayfinding technologies and information networks developed for Oakland will be applicable and replicable in Downtown Pittsburgh to enhance the BRT implementation process and the overall regional transportation system.

Addressing the wayfinding and transportation needs of Oakland requires a far reaching vision to match the activities and research of its world renowned institutions that are shaping the future of the world. In order to keep and retain the talent that fuels these activities and in order to attract new resources to expand and consolidate innovative activities, Oakland must develop a world class public realm as well as state of the art wayfinding mechanisms that are not only functional, but are also, in themselves, creative and iconic in how they represent the assets of the community and symbolize the "sparks of genius" behind new ideas.

3. Major Tasks and Timetable

Innovation Oakland assumes the following:

1. Innovation Oakland will be a community based project with vigorous outreach to all segments of Oakland.

2. The five major institutions of Oakland (University of Pittsburgh, UPMC, Carlow University, Carnegie Museums and Library, and Carnegie Mellon University) and OBID will provide grants and/or in-kind services.

3. A ten person Project Committee will be established by OTF from its membership prior to the onset of the work to include the interests of residents, property owners, businesses, institutions, government agencies, transportation and parking providers, and other Oakland stakeholders. This group will meet periodically with the researchers and will responsible for oversight of the goals, budget, and schedule for Innovation Oakland.

4. A Technical Advisory Group (TAG) will be established by the Project Committee to include in-house technical staff and faculty from the five Oakland institutions and relevant government agencies, such as the Port Authority, Parking Authority, PennDOT, and City Planning, with expertise in wayfinding, intelligent transportation, graphics, public art, information technology, and digital display. The TAG will meet periodically with the research team to provide data, expertise, and technical feedback.

5. UPMC will provide a staff person to be Project Manager responsible to the Project Committee for day to day management of the Innovation Oakland, and to coordinate on a regular basis with assigned Project Manager for the research team.

6. The Remaking Cities Institute (RCI) of Carnegie Mellon University (CMU) will lead the Research and Proof of Concept effort (Phases I and II below), assisted by CMU researchers, faculty, and graduate students from the School of Architecture, School of Design, School of Computer Science, and the Entertainment Technology Center.

7. Implementation of the Innovation Oakland (Phases III and IV below), will be completed by private consultants and contractors on a competitive bid basis after the Research and Proof of Concept phases, including final design, cost estimating, bidding, fabrication and installation of kiosks and digital and analog materials.

The process for the Innovation Oakland will include the following four phases:

Phase I: Research (by CMU team)
- Research Best Practices and Document Precedents
- Organize Public Comment, Community Engagement, and Outreach
- Preliminary Content Development

Phase II: Proof of Concept (by CMU team)
- Preliminary Content Development (cont'd)
- Develop Project Master Plan
- Design and Build Digital Prototype

Phase III: Final Design and Bidding (by private consultants)

Phase IV: Fabrication and Installation (by private vendors)

Each phase will involve working meetings with the Project Committee and Technical Advisory Group, as well as focus group meetings, and public meetings.

A prototype kiosk will be fabricated in Phase II. There will also be a demonstration in Phase II of transmitting real time transit and parking data to the kiosk and to wireless hand held devices.

The proposed schedule is below:

Phase I: Research	November 2009 to January 2010
Phase II: Proof of Concept	January 2010 to May 2010
Phase III: Final Design and Bidding	June 2010 to October 2010
Phase IV: Fabrication and Installation	November 2010 to November 2011

4. The Project Team

Project Sponsor

The Oakland Task Force (OTF), comprised of over thirty Oakland institutions, community groups, business groups, and public agencies, including the Port Authority and the Parking Authority, is the sponsor of the project.

Lead Agency

The Oakland Business and Improvement District (OBID), a non-profit member of OTF, is designated as the lead agency for Innovation Oakland. The Oakland Planning and Development Corporation (OPDC), a 501c.3 organization and also a member of OTF, will act as fiduciary agent for OBID. OBID will house the Project Manager (provided by UPMC as an in-kind contribution).

Carnegie Mellon University Research Team

OBID will contract with the Remaking Cities Institute (RCI) of Carnegie Mellon University (CMU) for research and proof of concept services. The CMU team will include the following key staff plus assistance from graduate students and researchers:

Donald K. Carter, RCI	Principal Investigator
Elise Gatti, RCI	Research Associate
Christine Brill, RCI	Adjunct Professor
Robert Hampshire, Heinz College	Assistant Professor
Priya Narasimhan, ECE and CyLab Mobility	Associate Professor
Mk Haley, ETC	Associate Executive Producer
Joshua Welsh, Department of Design	Adjunct Professor

The Remaking Cities Institute (RCI) of Carnegie Mellon University (CMU) grew out the Urban Laboratory, a fifth year urban design studio in the School of Architecture. During the past eighteen years, Urban Laboratory studios have completed student projects in over twenty communities in the Pittsburgh region, engaging hundreds of government officials, design

professionals, community groups and concerned citizens in a collective visioning processes. RCI was formed in 2006 in response to the demand for a greater link between academic work and ongoing community initiatives undertaken by firms, government agencies and community groups. RCI has three missions: international research in urbanism; education in urbanism; and Pittsburgh regional redevelopment impact. Innovation Oakland fulfills all three missions.

5. Need for Public and Private Partners

As outlined above there is already commitment from the five major institutions of Oakland and the twenty five other public and private organizations in the Oakland Task Force to take on this project with funding, in-kind services, and other support.

6. Cost Estimate and Committed Sources of Funds

Cost Estimate

Phase	**Monetary ($)**	**In Kind** ($)
Phases I and II		
Project Management		40,000
Financial Management		10,000
Project Master Plan	50,000	
Public Engagement	15,000	20,000
Content Development	90,000	20,000
Best Practices Research	20,000	5,000
Design/Build Prototype	50,000	
Promotion and Outreach	25,000	
Total	260,000	100,000
Phases III and IV	500,000 to 2,000,000 (estimated)	

Phases I and II Sources of Support Committed to Date

OBID	50,000	30,000
UPMC	40,000	40,000
Pitt	15,000	10,000
Carnegie Mellon	15,000	10,000
Carlow	2,500	10,000
Carnegie Institute	2,500	
Total	125,000	100,000

Cash Shortfall for Phases I and II

Cost Estimate	260,000
Committed funds	125,000
Shortfall	135,000

7. Other Potential Sources of Funds

OBID submitted an invited grant proposal to the R. K. Mellon Foundation in September 2009 for $85,000 for Phases I and II. A decision is expected in December 2009. Assuming a favorable result, that would leave a shortfall of $50,000 for Phases I and II, hopefully to be filled by Traffic 21 funding.

OBID has approached U. S. Congressman Mike Doyle for Federal funds for Phases III and IV. OBID is also planning to apply to the Commonwealth of Pennsylvania and Allegheny County for implementation funding for Phases III and IV.

8. Future R & D Needs and Funding

The development of a wayfinding master plan and the production of a prototype kiosk are just the first steps in developing hardware and software for a state of the art system. Additional research on information technology, data display techniques, wireless networking, and fabrication will follow. This will require a multi-disciplinary approach and departmental teaming at CMU similar to the process described above. It is anticipated that CMU will become the leading world research center for the development of these technologies, and that technological transfer of the ideas and inventions into the private sector will foster economic development in Oakland and in the Southwestern Pennsylvania region.

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