RESOLUTION No. 37060 As Amended

Approve funding for six Innovation Fund proposals (Resolution)

Whereas, the City of Portland Innovation Fund is designed to provide seed money for one-time investments that will encourage new, creative ideas to reduce ongoing expenses, increase revenues, create efficiencies, and provide improved services to the City's internal and external customers.

Whereas, Council nominated five distinguished members of the community for the Innovation Fund Task Force, to review and select the most promising proposals.

Whereas, in November 2013 ten bureaus submitted twenty-three proposals to the Innovation Fund Task Force for review and evaluation.

Whereas, before making their recommendations the Task Force met on four occasions, during which they discussed the concept of innovative government and the criteria that were most important to the decision-making process, with support provided by the Portland State University Center for Public Service.

Whereas, Council agrees with the findings and recommendations of the task force, and finds that these proposals benefit residents, create operational savings, pilot new ideas, and collaborate with regional partners.

NOW, THEREFORE, BE IT RESOLVED, that Council intends to appropriate $871,000 in one-time funding in the FY 2013-14 Spring Budget Monitoring Process to the bureaus, projects and amounts, as follows:

Portland Fire and Rescue, Pulse Point, $108,000
Portland Housing Bureau, XML Data Sharing, $48,000
Office of Management and Finance, Revenue Tax Information Exchange, $295,000
Portland Development Commission, Early Adopter Program, $80,000
Bureau of Planning and Sustainability, Updated LiDAR Data, $90,000
Bureau of Transportation, Capital Construction Coordination, $250,000

BE IT FURTHER RESOLVED, that the City Budget Office will include adjustments in the FY 2013-14 Spring Budget Monitoring Process to allocate funding from Special Appropriations to the projects noted above.

BE IT FURTHER RESOLVED, that bureaus receiving innovation funds will submit quarterly reports for each project that include project status, updates to timelines, progress against stated milestones, expenditures to date, and post-implementation requirements. Bureaus will also be expected to attend innovation forums put on by Portland State University's Center for Public Service that will focus on sharing innovative ideas across bureaus.

BE IT FURTHER RESOLVED that, upon conclusion of the project, bureaus will submit a close-out report documenting the actual budget used for the project and project outcomes, both positive and negative. The report will highlight the lessons learned and the applicability of the project outcomes to other areas of the City.

Adopted by the Council: MAR 12 2014

Mayor Charlie Hales
Prepared by: Andrew Scott
Date Prepared: March 6, 2014

LaVonne Griffin-Valade
Auditor of the City of Portland
By Susan Parsons
Deputy

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Agenda No.

RESOLUTION NO. 37060 **As Amended**

Title

Approve funding for ~~seven~~ Six Innovation Fund proposals (Resolution)

INTRODUCED BY Commissioner/Auditor: **Mayor Charlie Hales**	CLERK USE: DATE FILED MAR 07 2014
COMMISSIONER APPROVAL Mayor—Finance and Administration - Hales Position 1/Utilities - Fritz Position 2/Works - Fish Position 3/Affairs - Saltzman Position 4/Safety - Novick	LaVonne Griffin-Valade Auditor of the City of Portland By: _____ Deputy **ACTION TAKEN:**
BUREAU APPROVAL Bureau: City Budget Office Bureau Head: Andrew Scott	
Prepared by: Andrew Scott Date Prepared: 3/6/2014	
Financial Impact & Public Involvement Statement Completed X Amends Budget ☐	
Portland Policy Document If "Yes" requires City Policy paragraph stated in document. Yes ☐ No X	
City Auditor Office Approval: required for Code Ordinances	
City Attorney Approval: required for contract, code. easement, franchise, charter, Comp Plan	
Council Meeting Date **March 12, 2014**	

AGENDA
TIME CERTAIN ☐ **Start time:** **Total amount of time needed:** **(for presentation, testimony and discussion)**
CONSENT ☐
REGULAR X **Total amount of time needed: 10** **(for presentation, testimony and discussion)**

FOUR-FIFTHS AGENDA	COMMISSIONERS VOTED AS FOLLOWS:	YEAS	NAYS
1. Fritz	1. Fritz	✓	
2. Fish	2. Fish	✓	
3. Saltzman	3. Saltzman	✓	
4. Novick	4. Novick	✓	
Hales	Hales	✓	

FY 2013-14 City of Portland Innovation Fund Proposal

Title: PulsePoint
Lead Bureau: Portland Fire & Rescue (PF&R)
Director / Project Lead: Chief Erin Janssens / Andrew Carlstrom
Date Submitted: November 4, 2013

1. Executive Summary

In collaboration with the Bureau of Emergency Communications, Portland Fire & Rescue is requesting resources from the City Innovation Fund to implement PulsePoint, a smart phone app which notifies citizen volunteers that a cardiac arrest has occurred close to them, and where the nearest defibrillator is located. These volunteers then have the ability to respond to the event and commencing CPR and/or utilizing a defibrillator, until emergency responders arrive to begin advanced life support measures. The goal of this project is to utilize PulsePoint-subscribing citizens to increase the cardiac survival rate in PF&R's response area. This will provide concerned citizens with an opportunity to make a difference in their community.

Project funds would be used to pay for:

- The interface between the City's Computer-Aided Dispatch (CAD) system and PulsePoint;
- The first two years of the City's software licensing fees; and
- Three outreach efforts to promote the app. within the city
- Promote and deliver twelve CPR classes throughout the city

PF&R would leverage its public education resources to further promote PulsePoint and CPR training, and would absorb the ongoing PulsePoint costs after an initial two-year pilot program.

2. Project Description

A. Scope of work

The scope of the work funded by the Innovation Fund includes the following:

- Development of technical requirements, and implementation of, an interface between the City's Versadex CAD system and PulsePoint.
- Agreements between the City and PulsePoint, including a licensing fee agreement required of all PulsePoint licensing agencies (typically fire departments).

- Funding for the first two years of the PulsePoint software licensing agreement. The first two years of this implementation, funded by the Innovation Fund, are to be considered a pilot program. After this period, PF&R will work with partner agencies – the Bureau of Emergency Communications and Multnomah County Health Department – to determine the effectiveness of the program and deliver a recommendation report to the Commissioner in Charge.
- Advertising to promote PulsePoint use.

B. Type of project

- This project will leverage technology to increase the likelihood of surviving a cardiac event by decreasing the 'down' time without CPR until fire & rescue crews can arrive and begin advanced life support actions.
- This project is a collaborative effort between PF&R, BOEC, and Multnomah County Health.

C. Identification of potential challenges or obstacles

Potential challenges to the project timeline include:

- Creation of, and training dispatch staff on, proper PulsePoint-triggering protocols (the City uses manual triage cards, not an automated triage system as do many PulsePoint using agencies);
- Review and acceptance of PulsePoint software by the City (Bureau of Technology Services)
- Synchronizing PulsePoint capabilities with CPR education and training within PF&R's response area.

D. Lead bureau and other groups impacted (bureaus, governments, customers, the public, etc)

- Portland Fire & Rescue is the lead bureau, and submitter of this proposal. PF&R will be responsible for:
    - Managing the project;
    - Coordinating agreements and contracts;
    - Collecting performance data; and
    - Developing and implementing a public education campaign.
- The Bureau of Emergency Communications is a supporting bureau and is responsible for assisting in the project. Specifically, BOEC is responsible for:
    - Assisting in the development of an interface between CAD and PulsePoint (BOEC is the owner of the CAD system);
    - Working with PF&R and Multnomah County in the development of new dispatch protocols; and,
    - Implementing PulsePoint-triggering dispatch notifications on a daily basis.

- Multnomah County Health Department, through the Emergency Medical Services Division of the Health Department, will be responsible for:
  - Updates to Triage protocol cards
- The PulsePoint Foundation – This organization has created the mobile app specifically for fire and medical emergency responder agencies. There is no other app on the market at this time that has the support, knowledge base, and agency track record that PulsePoint has. Therefore, PF&R will procure the application from this sole source.
- Versaterm – This company is the provider of Portland's Versadex CAD system. PF&R and BOEC recommend that, for seamless integration, the City limit development of the CAD-PulsePoint interface to development resources within Versaterm. Therefore, PF&R will procure integration services solely from Versaterm.
- PulsePoint Subscribers – In addition to increasing CPR trained citizens and awareness of the PulsePoint app, PF&R will work to identify CPR-trained volunteer pools to be PulsePoint subscribers/responding volunteers for the pilot program. These will be the individuals who, when they receive a smart phone notification, have the ability to respond to a cardiac arrest incident and begin CPR before professional emergency responders are able to arrive on scene.
- The Public – Delivering CPR training and implementing this smart phone app engages and directly benefits the public. Specifically, PF&R, BOEC and Multnomah County Health seek to improve outcomes for patients in cardiac arrest.

E. Project timeline including start and end dates, major milestones, and risks to proposed timeline

PF&R anticipates working on implementation immediately following approval of funds from Council. Specifically, PF&R will:

- 12/01/13- 01/15/14 Work with BOEC, Procurement Services, and the City Attorney on developing contracts with Versaterm and PulsePoint; and
- 12/01/13- 07/01/2015 CPR training through community outreach
- 12/01/13- 06/15/14 Work with BOEC and all stakeholders on developing technical requirements and operational procedures;
- 01/15/14- 06/15/14 Work with BOEC, Versaterm, and PulsePoint to develop an interface between PulsePoint and CAD;
- 12/01/13- 05/31/14 Design a public outreach campaign using PF&R's Communications group.
- 06/15/14- 08/15/14 Actively advertise opportunity

3. Project Outcomes (qualitative and quantitative)

A. Potential cost savings or increased revenues: No direct city cost benefit

B. Potential operational efficiencies

- Enhanced ability for the City to facilitate increased cardiac arrest survival rate by engaging citizen responders. At this time, PF&R cannot project with a high confidence the number of PulsePoint notification or "saves." For that reason, this is a two-year pilot program which will include an evaluation.

C. Who benefits from the cost savings and/or efficiencies?

- Victims of cardiac arrest are the primary beneficiaries of PulsePoint augmentation of the cardiac arrest survival rate.

D. Performance metrics to track progress and expected outcomes

- Number of cardiac arrest incidents
- Number of PulsePoint notifications
- Number of measured citizen responses
- Number of transports from PulsePoint citizen responses
- Survival rate – both with and without PulsePoint citizen responses

4. Budget

A. Total General Fund discretionary requested (split by fiscal year if requesting a multi-year project)

	FY 2013-14	FY 2014-15	**Total**
Interface Development	48,000		**48,000**
Interface Support	7,500	7,500	**15,000**
Annual Licensing Fee	10,000	$10,000	**20,000**
Initial Public Outreach	10,000		**10,000**
Public CPR classes	10,000	5,000	**15,000**
Subtotal	$85,500	$22,500	**$108,000**

B. Leveraged Funds and Return on Investment Timeline

- While this project will improve performance (cardiac arrest survival), it is an addition/enhancement to the missions of PF&R and BOEC. As such, it is not an efficiency gain that has an easily projected ROI.
- Ongoing operations and maintenance, including technology and public education, relies on the existing resources, including budgetary of PF&R and BOEC.

C. Ongoing operations and maintenance costs (identify costs and funding source)

- Ongoing O&M, except for licensing fees, will be embedded in the budgets of PF&R (public education/outreach) and BOEC (dispatch).
- Licensing fees: $10,000 per annum

- Interface support: $7,500 per annum
- Funding source: to be determined

D. Staff requirements (existing or new)

- This project will be implemented with existing PF&R, BOEC, and County staff.

Innovation Fund Proposal
XML Data Sharing Pilot Program

Project Description

Project Background

Like many of the City's service bureaus, the Portland Housing Bureau (PHB) uses large web-based databases to hold and report information on the characteristics and needs of the people it serves. These databases are populated with information by users working in many different organizations across the city. Case workers in non-profit agencies that provide assistance to homeless clients enter information on service use and measures of program effectiveness. Property managers at property management companies enter income and compliance information on households living in city regulated affordable housing. Broad participation in these databases helps provide a consistent and accurate snapshot of the populations that PHB serves, as well as information on service use and measurement of performance of programs.

The information these users provide has an important impact on policy at local and regional levels. At the same time, participation and reporting in PHB's databases is not as high as it could be. The database functions have not always been easy to understand and like any software, each system takes time to learn. Users must manually enter data into the systems through web-based interfaces, and in many cases data entry is duplicative of entry that has already been done into agencies own internal information management systems.

The goal of this project is to develop and pilot an XML data sharing program that permits Bureau partners to export data from their own internal information management systems and upload data into PHB databases. Implementation of an XML data sharing program will greatly reduce the data entry burden on PHB partnering agencies, improve the quality and amount of data received by PHB, and ultimately provide better performance information to inform housing policy at the local and regional levels.

XML Data Sharing Pilot

Although not widely used in local government settings, XML is not a new technology. The vendors of the web-based databases that PHB uses have defined and published global schema for use when importing data through an XML tool. The schema provide system logic to reconcile data and import into PHB's web-based database systems. Additionally, the vendors of PHB's web-based databases have made XML import tools available for use with each prescribed XML schema. The work that remains is to do the outreach and programming to "connect the dots" and begin data sharing using XML. The proposed data sharing pilot program will hire a programmer to assist PHB and work with selected agencies source systems to export and map their data to the appropriate XML schema. The mapping tools designed will be flexible, modular, and displayable so that data can be understood by PHB and partnering agency staff during the upload process.

Innovation Fund Proposal
XML Data Sharing Pilot Program

The pilot will focus on two groups of PHB partners. Property management companies that manage PHB regulated housing are required to regularly report extensive income and demographic information on the residents of affordable housing. These agencies are currently reporting information to PHB in one source format (a Microsoft Excel spreadsheet) as well as hand-entering tenant data into a PHB web-based database. The proposed pilot will create an XML tool to map the Excel spreadsheet data into a prescribed XML schema. PHB and agency users will then be able to automatically upload the mapped data into PHB's web-based database using the vendor's XML upload tool. **This will eliminate hundreds of hours of duplicate data entry** by the many property management companies that currently report to PHB.

Faith-based organizations that provide homeless services are the second group of partnering agencies targeted by the XML data sharing pilot program. Staffed primarily with volunteers, these agencies struggle to consistently report information into PHB's web-based databases. Staff at the agencies lack the time and background to easily and quickly learn the database functionality and reporting requirements. This limited staff capacity is coupled with some wariness of the constraints that government funding and reporting could potentially place on their agencies. PHB proposes partnering with several of the larger faith-based agencies in the city that provide homeless services to develop a process to map their source data to a prescribed XML schema and upload their data at agreed upon intervals using the vendor XML upload tool. This process will eliminate the need for long hours of staff training as well as relieve the data entry burden currently placed on these agencies.

While XML is a great boon to public and private agencies needing to share data across software environments, it is not without its challenges. The proposed data sharing pilot will require that someone (programmer, PHB staff, or other standard-setter) must reconcile the differences between data sources and the destination web-based databases in order for data to be shared. Data reconciliation will need to overcome possible technical challenges as well as differences in semantics. In the two pilot groups there are many opportunities for agencies to use different formats and terms to describe the same attributes. Staff will need to work as integrators and determine if it is possible to use a particular attribute for a particular purpose. These challenges, while serious, are not great enough to outweigh the potential benefits of implementing XML data sharing.

Project Timeline

January 2014

- Work with Procurement Services to contract with an XML programmer through one of the City's existing flexible services contracts or through a RFP process.

January 2014 – February 2014

- Work with selected XML programmer to translate the Excel spreadsheet currently submitted to PHB by local property management companies to prescribed XML schema.

Innovation Fund Proposal
XML Data Sharing Pilot Program

- Document the process of converting the Excel spreadsheet to an XMLfile.
- Test the final XML dataset for successful upload into housing software.
- Verify the documentation created during the XML mapping process.

March 2014
- Meet with faith-based pilot agency leadership to kick-off the XML Data Sharing Pilot Program and put necessary data sharing agreements in place.

April – June 2014
- Work with XML programmer to translate agency source system data into prescribed XML schema.
- Document the process of converting the source data to XML.
- Test the final XML for successful upload into housing software.
- Verify the documentation created during the XML mapping process.
- Repeat above process for each faith-based agency (three total).

June 2014
- Coordinate with PHB to train and test on maintenance of the XML conversion and upload process.

Project Outcomes

Implementation of an XML data sharing program will greatly reduce the data entry burden on PHB partnering agencies, improve the quality and amount of data received by PHB, and ultimately provide better performance information to inform housing policy at the local and regional levels. Being able to provide complete data on homeless services and outcomes in the community to PHB's federal funders such as the Department of Housing and Urban Development (HUD) will improve the Bureau's competitiveness for future funding opportunities.

Implementation of XML tools for property management companies currently reporting to PHB will eliminate hundreds of hours of duplicate data entry. These same tools made available to faith-based organizations will eliminate the need for long hours of staff training as well as relieve the data entry burden currently placed on these agencies. By reducing the need for manual data entry, it is expected that data quality and completeness will increase by a minimum of 25% for each participating agency.

Budget

We expect each agency data source to require a minimum of 50 hours of programming to convert to a prescribed XML schema. An additional 10 hours of time is allocated for documenting the conversion project for each data source. For this pilot project, potential agency data sources include the Excel spreadsheets submitted by property management

Innovation Fund Proposal
XML Data Sharing Pilot Program

companies (considered one data source) as well as XML converted data from each faith-based agency. The faith-based agencies are using a wide variety of software applications to maintain their client records, and each agency will be its own XML mapping project.

Contractors with the requisite programming skills range in price from $50/ hour to $125 hour, depending on their expertise and skills. For purposes of this project we estimated $100/hour.

PHB must pay a one-time, $6,000 XML upload fee per data source for use of the XML uploading tools provided by the vendors of its web-based systems. We anticipate the pilot will convert four data sources to XML files following prescribed XML schemas.

The table below represents the cost of converting and uploading four data sources via XML tools.

Task	**Number of Hours**	**Num**
XML Programming	200	$20,000
XML Upload (One-Time Fee)		$24,000
XML Documentation	40	$4,000
Total Project Cost		**$48,000**

Project Contact Information

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Portland, OR 97204
503-823-4160
Leslie.Goodlow@portlandoregon.gov

City of Portland Innovation Fund Proposal

Proposing Bureau and Project Title

Revenue Bureau

Tax Information Exchange Agreement between IRS and Portland

Project Description: *Scope of work; Type of project (technology, consolidation of services, lean process improvement, redesigning business processes, etc); Identification of potential challenges or obstacles; Lead bureau and other groups impacted (bureaus, governments, customers, the public, etc); Project timeline including start and end dates, major milestones, and risks to proposed timeline*

The Revenue Bureau currently does not have an agreement for direct exchange of taxpayer information with the U.S. Internal Revenue Service (IRS). Having an information exchange with the IRS will provide the Bureau with local taxpayer information such as name, SSN/FEIN, address, income and filing status which will greatly assist in the administration and collection of local income taxes such as the Portland Business License Tax, the Multnomah County Business Income Tax and the Arts Tax. The IRS provides this service free of charge to all 50 states, the District of Columbia and eligible municipalities and counties with over 250,000 residents.

The three primary benefits of such an exchange are:

1) **A substantial reduction in tax filing burden for hundreds of thousands of local taxpayers** because completing tax returns in common tax preparation software packages such as TurboTax will satisfy Portland, Multnomah County, Oregon and federal filing requirements simultaneously when e-filing is implemented in conjunction with the Oregon Department of Revenue (data exchange is a precursor to e-filing). Many taxpayers will no longer need to fill out separate forms and mail copies of tax returns and other papers to the Revenue Bureau.

2) **A significant increase in compliance with all local income taxes** administered by the Revenue Bureau because key income and filing information will no longer be unknown and unverified. This is especially important in the identification of taxpayers that have never filed tax returns with the Bureau. The Bureau conservatively estimates a compliance increase of 1-3% for business income taxes and up to 5% for the Arts Tax, translating into millions of dollars of increased annual revenue for Portland and Multnomah County general funds, and the Arts Tax Fund.

3) **A reduction of Bureau administrative burden** related to processing paper returns; processing times for tax returns and turnaround times on taxpayer refunds will be greatly reduced after e-filing is in place. Other benefits include increased physical security of tax payments resulting from higher numbers of taxpayers paying electronically rather than by check. The reduction in administrative workload for the Bureau will result in reallocating additional staff to audit or other work further increasing revenues.

The Revenue Bureau has already applied for acceptance into the Tax Data Exchange Program with the IRS; the IRS has agreed the City is initially qualified to receive federal tax information pursuant to IRC Section 6103(d)(1). To fully implement an agreement, the City must comply with many security and other requirements delineated in IRS Publication 1075 (Pub 1075), and additional resources are needed to do so.

Timeline, risks and milestones - There is an annual window to join the exchange program; the Bureau must submit a Safeguard Procedures Report (SPR) by July, 2014. The SPR is a detailed report (about 70 pages) that details how the City (Revenue and BTS) will access, store, use and ultimately destroy the tax return and tax information data received. It will take approximately 3-9 months to complete the SPR, ensure the security requirements are in place and receive approval from the IRS. Once approved, bi-annual security reviews will continue to take place and additional implementation work will occur. The timing of E-filing implementation (project benefits 1 and 3, above and below) is currently unknown and will be dependent upon the Oregon Department of Revenue's workload and priorities, following implementation of data sharing with the IRS.

Project Outcomes (qualitative and quantitative): *Potential cost savings or increased revenues (one-time and/or ongoing); Potential operational efficiencies; Who benefits from the cost savings and/or efficiencies; Performance metrics to track progress and expected outcomes*

1) Reduction in taxpayer burden for hundreds of thousands of local taxpayers. Metric: number of taxpayers e-filing returns.

2) Increased ongoing General Fund revenues of $780,000 to $2.3 million for Portland; $577,000 to $1.7 million for Multnomah County; and up to $540,000 for the Arts Tax. Substantial one-time business income tax revenues will also be realized as many taxpayers will be identified that have multiple unfiled or incorrectly filed previous tax years. Metric: incremental revenue tracking associated with increased compliance of accounts associated with IRS data.

3) Decreased administrative burden for the Revenue Bureau which will result in reallocation of staff to other revenue generating tasks, and potentially a longer term reduction in staff. Metric: Bureau will reallocate staff to other tasks, document the transfer, and report on any increase in revenue.

Budget: *Total General Fund discretionary requested (split by fiscal year if requesting a multi-year project); Leveraged funds; Return on investment timeline, if any, and confidence level of the projections; Ongoing operations and maintenance costs (identify costs and funding source); Staff requirements (existing or new)*

Total request: $295,000 (estimated FY 13-14 - $130,000; FY 14-15 - $165,000)

FY 13-14: BTS - $73,000 (technical staff time and physical security upgrades) and Revenue - $57,000 (1.0 FTE for 6 months). Physical security upgrades could be required at BTS

and/or Revenue.

FY 14-15: BTS - $52,000 (hardware/software/technical staff time) and Revenue - $113,000 (1.0 FTE)

Leveraged funds: none currently, but Multnomah County could be approached to assist because they also benefit.

ROI timeline: program could be up and running for Tax Year 2014 or 2015 resulting in ongoing and one-time increased revenues beginning in Fiscal Year 2014-2015 or 2015-2016 (the Bureau will use federal data to adjust incorrectly filed tax returns for up to three prior years under City Code; and all prior tax years for taxpayers that have never filed a return).

Confidence in projections: budget—low to moderate; revenues--high.

Ongoing operations and maintenance costs/staff requirements: New 1.0 FTE Senior Management Analyst in Revenue. The Bureau will request a permanent position in the FY14-15 budget process; if approved, this would reduce year two Innovation Fund expenses, dollar for dollar. Estimated annual salary (at midpoint), benefits and M&S is $114,000. This proposal requests funding for the position for 1.5 years. BTS estimates one-time expenses at $125,000. Ongoing expenses related to increased security, hardware and/or software are unknown at this time.

Project Lead/Contact Information

Bureau Director	***Approval***	***Contact Information***
Thomas Lannom, Revenue Bureau Director (lead bureau)	Thomas	Thomas.Lannom@portlandoregon.gov; 503-823-5154
Ben Berry, Chief Technology Officer (assisting bureau)		Ben.Berry@portlandoregon.gov; 503-823-4219

CITY OF PORTLAND INNOVATION FUND
Project Proposal: Early Adopter Pilot Program
November 4, 2013

Lead Bureau:	Portland Development Commission
Partner Bureaus:	Bureau of Environmental Services Bureau of Transportation Bureau of Planning & Sustainability
Other Groups:	Portland Tech Industry Firms

Project Description

PDC will partner with city bureaus to develop and pilot an early adopter program to illuminate tech solutions for city bureaus' operations and maintenance (O&M) and capital project needs, while giving local Portland companies greater access to a potential customer base. As a foundation, the program will:

- Develop a platform by identifying current city innovation activities;
- Convene the bureaus to discuss O&M and capital needs, opportunities and challenges, and best practices; and
- Review known local tech products and services, ranging from software-based management solutions to integrated design approaches to hard infrastructure products.

The bureaus will work as a team (with guidance from a consultant) to craft a technology-based tool that will provide an interface between bureaus and industry to exchange needs and proposed solutions.

The concept for this proposal stems from a previous effort that was managed by the Office of Procurement to gauge the interest from both the bureaus and private industry on increasing their accessibility to one another. The city received an overwhelming positive response from both sides about the opportunity, but recommended a more institutionalized, long-lasting approach. This project addresses that recommendation. In addition, bureaus including BES and BPS are engaging with companies in a variety of ways but with the similar goal of incorporating new technology that produces a cost savings on investments and improves project performance. The early adopter program will build on these

Who supports this concept?

City bureaus, a signature research center, Oregon's largest university and local businesses. Letters of support for this concept have been provided by:

Bureau of Planning and Sustainability
Innovation. Collaboration. Practical Solutions.

CascadeEnergy

CoPatient
Healthcare: Investigate. Explain. Save.

globesherpa

Indow windows

best
Oregon Built Environment & Sustainable Technologies Center

City of Portland Bureau of Transportation

Portland State University

RAPID made

WALKER TRACKER

Environmental Services
City of Portland
working for clean rivers

Portland Bureau of Technology Services

City of Portland Innovation Fund
Project Proposal: Early Adopter Program
Lead Bureau: Portland Development Commission
November 4, 2013

activities to formalize and scale the city-to-business relationships.

Portland is known for its *early adopter* practices—using data and technology to implement solutions that enhance the city's quality of life for businesses and residents. We have seen these successes in areas such as the city's leadership in the number of LEED-certified projects and electric vehicle infrastructure installation, and our utilities' early entrance into the renewable and energy efficiency markets. PDC seeks to leverage the city's early adopter culture by using the City of Portland's purchasing power to support local technology product and service providers. In addition to the economic efficiency that such a partnership could create, the program complements existing citywide strategies including the Economic Development Strategy and the Climate Action Plan.

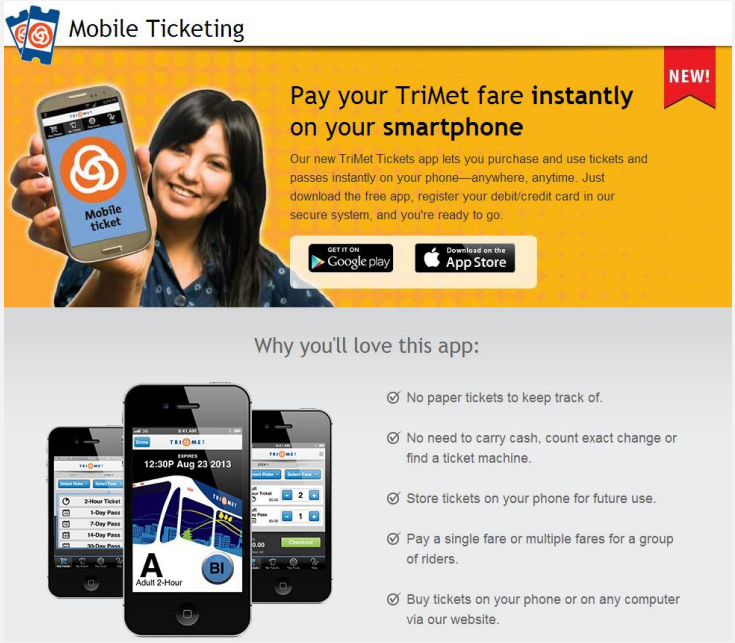
What will this do?

It will bring value to the city and private industry

This proposal creates an interface so needs can be efficiently communicated between the City of Portland and local businesses. It will:

- Help city government function more efficient and provide better service
- Provide real feedback to local businesses and access to a potential first customer

Portland's own tech businesses think of their city as a living laboratory. These emerging firms are typically seeking a first customer to support the commercialization and/or market expansion of a product or service. In many instances, city government is an ideal first customer, whose implementation of a new technology solution also improves services to the public. A recent example of a successful match between government and industry has been the partnership between TriMet and GlobeSherpa, a mobile ticketing platform. TriMet recently implemented the ticketing platform into its own systems. Within the first month, the platform sold 100,000 tickets, translating into $450,000 in sales. TriMet's cost for selling electronic tickets is significantly less than the traditional paper ticket, which has the agency promoting the mobile ticketing solution throughout Portland to an overwhelmingly positive response from customers. GlobeSherpa can use the positive promotion to market its service to other transit authorities across the country.



Partnership: GlobeSherpa & TriMet

Through its partnership with start-up GlobeSherpa, TriMet became the nation's first transit authority to accept mobile payments for multiple modes of public transit.

City of Portland Innovation Fund
Project Proposal: Early Adopter Program
Lead Bureau: Portland Development Commission
November 4, 2013

The city offers an expansive universe for the application of local technologies and services in both capital projects and O&M ongoing needs. Opportunities range from increasing public participation through smart phone applications, to standardizing and analyzing massive available city datasets for operating efficiencies, to installing new material technologies as part of right of way and infrastructure investments. The options are considerable, and these kinds of pioneering solutions will be unlocked by connecting Portland's city and local industry innovators.

Scope of Work

To ensure long-term benefit and success, this proposal launches a pilot phase of an early adopter program. The pilot consists of two key deliverables: a technical platform and a coordinating cross-bureau advisory committee. The technical platform is the interface between city bureaus and local companies as a means to consolidate points of contact and supply and demand information exchange. Bureaus could post their O&M needs, potential projects to implement policy goals, and/or problem statements; while the firms could upload information about their company, solutions, and/or provide responses to posed problem statements. The following scope of work is required to deliver on these outcomes:

- **Convene Advisory Committee**: PDC would convene an Advisory Committee made up of city bureau staff to launch and promote the pilot phase; serve as project team for the scope of work; and make a recommendation regarding institutionalizing an early adopter program. During the pilot phase, the Advisory Committee will meet monthly to solicit and select a consultant team; share O&M and capital opportunities and challenges and best practices; coordinate with PDC on industry engagement; and provide input on platform development. Once the program is developed and operational, the Advisory Committee will meet on a quarterly basis to review company submissions.

  There would also be a set of strategic advisors to support the Advisory Committee by providing insight and expertise to the project. It is envisioned that this group would consist of both local partners such as Portland State University and OR BEST, as well as the Kauffman Foundation who has been a leader this subject area.

- **Retain consultant for design and development of tech solution (likely web-based)**: The Committee will develop a RFP to retain a consultant team to facilitate discussions and recommend tech solutions to bureau needs. The consultant team is expected to include a range of skills including engagement, user design and back-end technology development and deployment.

- **Convene industry with Advisory Committee**: Once the Advisory Committee has inventoried a joint list of opportunities and challenges, the Committee will convene a select group of tech companies to provide insight into the kind of information that would be useful in the tech solution to help them market their products and services to bureaus.

The early adopter program is a strategy to give a greater number of small companies access to working with the city bureaus. PDC will make a special effort to include minority and women-owned businesses in the industry conversation and program development. PDC will do this by integrating its existing initiatives such as inclusive entrepreneurship and connecting traded sector activities to neighborhood economic development into the program. Ultimately, this effort will reach companies that may not be aware of government partnership opportunities or have not been able to enter the market via traditional procurement channels.

- **Assemble the information for the tech platform development**: The tech platform will be an interface between city bureaus and tech companies. The Advisory Committee will determine content based on its inventory of opportunities and industry input.

- **Design and launch tech platform**: The final step of the pilot will be to develop and launch the tech platform. It will be a user-friendly product that creates a more efficient and effective way for the city and industry to connect. Near-term measures of success will be increased exchange between bureaus and industry and the progress of two or more partnerships/projects to test phase.

Advisory Committee

The success of this effort will be based largely upon collaboration among city bureaus to develop a solution that will meet their needs and improve individual bureaus' ability to deliver public services, while providing new economic development opportunities to the city's clean-tech industry. Committee members will have the following responsibilities:

- Provide input on the development of the RFP for consultant and weigh in on the ultimate selection
- Participate in industry convening
- Review technical platform solutions
- City staff act as liaison to their own bureau to ensure engagement, information gathering, and buy-in
- Post pilot phase: review and respond to company submittals (likely on quarterly basis) and

Advisory Committee Members (Proposed)

- Portland Development Commission
- Bureau of Transportation
- Bureau of Environmental Services
- Bureau of Planning & Sustainability
- Bureau of Technology
- Office of Management & Finance / Office for Community Technology
- 2 private sector representatives
- Mayor's Office

City of Portland Innovation Fund
Project Proposal: Early Adopter Program
Lead Bureau: Portland Development Commission
November 4, 2013

Strategic Advisors

The following is a short list of proposed strategic advisors who are uniquely positioned to supplement the knowledge and expertise of the Advisory Committee. The university system is a key actor in the commercialization of technology by providing laboratory space and equipment as well as gap funding to start-up companies. Entities such as Portland State and Oregon BEST would also benefit from participating in the pilot to better connect their activities with the city's opportunities and constraints. Finally, the Kauffman Foundation is a national leader in supporting the connection between entrepreneurship and resource efficiency in cities. The foundation has given accolades to Portland's budding entrepreneurship ecosystem and sees great potential in this program.

- Portland State University, Institute for Sustainable Solutions: Opportunities for involvement and practicum
- Oregon BEST: Link to the state's university system and provides gap funding to start-up clean technology companies.
- Kauffman Foundation: National leader in entrepreneurship and best practices

Potential Challenges or Obstacles

- Each of the city bureaus has its own mission and culture in which to execute projects and carry out the functions of that agency. It will be imperative for each of the participating bureaus to have a sense of ownership over this program to ensure that the information exchanged within the Advisory Committee and with the tech industry is filtered back through the agency in order to capitalize on opportunities.

- The Advisory Committee and consultant team will need to find the best manner in which to collate and communicate information on the tech solution so that it is useful to the respective bureaus.

- As project or partnership opportunities are identified during the pilot phase, close coordination with existing city policy and processes (including public procurement and permitting) will be important to flag issues or adjustments, if any, that may be needed to address an *early adopter* effort as distinct from the city's conventional approach.

City of Portland Innovation Fund
Project Proposal: Early Adopter Program
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Project timeline

FY 2013-14	
January	Advisory Committee -off meeting Devise scope of work / Post consultant RFP
February / March	Select consultant Convene industry for input Gather bureau input, opportunities and project proposals
April / May	Tech platform design and development Identify low-hanging project opportunities for early implementation
June	Complete tech platform development
FY 2014-15	
July / August	Public launch of Early Adopter program Outreach to industry Bureaus continue to populate the tech platform with project proposals
September	Convene Advisory Committee to review submittals and discuss potential uses
October / November	Identify at least two additional new project opportunities for early implementation
December	End of pilot – recommendation by Advisory Committee on early adopter program next steps

Risks to Project Timing

- The Advisory Committee members will need to determine how their respective bureaus can best use this program in a manner that will benefit their respective mission and structure and committee members will need to agree across bureaus about pilot program short term focus and prioritization. Simultaneously, the committee will need to reach consensus in a relatively short period of time to determine best way in which to exchange information with industry.

- The design and development of a tech solution can be time intensive. The consultant will need to be efficient in gleaning information from both bureaus and industry to create the solution.

Project Outcomes

The program is positioned to provide several benefits to both the city and industry in its goal of coordinating and streamlining the way in which the city interacts with the business community on new technology solutions. We will consider the **pilot phase a success** if it achieves the following:

- Provide a platform that facilitates a better exchange of ideas between government (potential purchaser) and firms
- Create a transparent technical solution that is efficient, scalable and can be readily used by both parties
- Establishes five new bureau-industry discussions that otherwise would not have occurred
- Leads to two or more projects that are progressing to test phase

Potential Cost Savings or Increased Revenues

The project will create a process and platform for bureaus to share ideas and experiences around new technology and innovation with direct input from industry. The industry perspective may illuminate new strategies to expedite ways of doing business and/or projects that will ultimately save city resources—most notably time and money. The city would begin to see these cost savings and potential new revenue streams once the solutions have been implemented. In this model, the city will be spending its dollars to support the growth of local businesses which will in turn be paying business fees and taxes that add to Portland's economy.

A recent example of a revenue-generating model stems from a partnership between Lucid Energy, a Portland-based firm and the city's water bureau. In this instance, the bureau installed a LucidPipe Power System (an in-pipe hydropower technology that generates electricity from flowing water) in tandem with a large construction project at Powell Butte. The pipe will generate 1,100 megawatt hours of energy per year—enough to power 150 homes. The $1.7 million pilot has been privately funded to demonstrate Lucid's proof of concept, while the city will share in the anticipated revenue from the sale of generated electricity estimated at $55,000 in the first year. This public private partnership demonstrates the variety of ways in which the city could structure early adopter projects.

Potential Operational Efficiencies & Beneficiaries

The key value-add of this project is increased efficiency and responsiveness. By bringing multiple bureaus and private businesses under one effort, we will establish a more formalized method for industry to begin a conversation with the city and simultaneously interface with several bureaus at one time.

City of Portland Innovation Fund
Project Proposal: Early Adopter Program
Lead Bureau: Portland Development Commission
November 4, 2013

The City of Portland, the local tech industry and the public all benefit from this project.

City of Portland Bureaus	Local Tech Industry	Public Citizens
Better information on what is currently available in the marketplace	Access to market information and exchange with bureaus that may otherwise not occur / greater civic engagement from the business leaders	Long-term challenges may be resolved with new solutions
Greater cost efficiency through testing new technologies and greater coordination between the bureaus on experiences	Locale for product demonstration and proof of concept	Increased efficiency via lower costs or more services
Opportunity to increase cost effectiveness via local purchasing	Potential for City of Portland to be "first customer"	Purchasing dollars stay in the local economy and recirculate.

Performance Metrics

On a quarterly basis this project will report the:

- Number of concepts posted by each bureau
- Number of submittals received from private business
- Number of exchanges between bureaus and industry resulting from platform
- Number of projects under way

Budget

Total General Fund Discretionary Requested
Project Budget FY 2013/14 – FY 2016/17

BUDGET	Sources of Funds			Uses of Funds				
Fiscal Year	Request	Match Dollars (PDC)	TOTAL	Site Hosting	Consultant (Technical, branding & marketing)	Reimbursable	Contingency	TOTAL
2013-14	$40,000	$40,000	**$80,000**	$2,000	$61,000	$5,000	$12,000	$80,000
2014-15	$40,000	$40,000	**$80,000**	$2,000	$61,000	$5,000	$12,000	$80,000
Total	**$80,000**	**$80,000**	**$160,000**	**$4,000**	**$122,000**	**$10,000**	**$24,000**	**$160,000**

City of Portland Innovation Fund
Project Proposal: Early Adopter Program
Lead Bureau: Portland Development Commission
November 4, 2013

Leveraged Funds

The table above shows PDC will commit a total of $80,000 over the next two fiscal years to this project, which is a 1:1 match for the project funding. PDC will use the federal Jobs, Innovation and Accelerator Challenge (JIAC) Grant as its source for match funding—which will also account for more than half of the costs in the first fiscal year.

Return on Investment Timeline

The upfront costs to establish a process that stands to generate significant sustained cost savings and potential revenue for the City of Portland are relatively low. With a small upfront investment, the pilot will create partnerships between government and industry that would likely not occur but for a catalyst program like early adopter. Ideally, the program will leverage multiple public-private partnerships between bureaus and tech firms.

Ongoing Operations and Maintenance Costs

PDC is committed to being the lead agency for the pilot and providing the staff time and match funds to develop the project. The initial costs in establishing the tech solution will be spent in the first two years of the project. After that, the maintenance costs will likely be nominal hosting fees. (Please see the projected timeline above for the proposed program as an indicator of ongoing costs.) Other incurred costs will depend upon the future of the program in terms of its expansion beyond the tech industry as well as the features made available on the tech solution. PDC proposes a review of the program at the end of year one to confirm that it is adding value for both the bureaus and industry and that it should continue. Assuming that it is successful, the Advisory Committee will agree on future participation and time commitments from participating bureaus.

Staff Requirements

This project aligns with the city's economic development strategies and the associated PDC clean tech industry strategy and staff work plans. PDC has a plan to reprioritize work, so no additional staff would be needed to execute. Partner bureaus will need to assign one staff member to be the bureau lead and participate on the advisory board for this project.

FY	PDC			Single Bureau*			Total Staff Costs
	FTE for project	Staff Time (Hours)	Est. Staff Costs	FTE for project	Staff Time (Hours)	Est. Staff Costs	
2013-14 (Jan-June)	1.00	1040	$60,320	0.035	36	$2,088	$75,400
2014-15 (July-Dec)	0.50	520	$30,160	0.035	36	$2,088	$32,248
Total	**1.50**	**1,560**	**$90,480**	**0.7**	**72**	**$4,176**	**$107,648**

*Total number of bureau hours will depend on number of bureaus participating.

cascade web//development

DATE: 10.31.13

FROM: Ben McKinley

Cascade web development supports the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program, which will facilitate greater opportunities for collaboration between the City and the local technology industry in identifying solutions for city bureaus.

This proposal presents an opportunity for local companies such as mine to connect with the City in a pioneering way, by providing a platform to exchange information and offer expertise that can leverage the City's resources. Simultaneously, cascade finds great value in the potential of a new customer such as the City who is willing to test or purchase an early stage product and provide real feedback on its performance.

Cascade is a digital strategy and development company that offers a variety of web based solutions. Our solutions include web sites, intranets, remote collaboration tools, mobile apps and digital marketing. We are strong supporters of the community with myself and members of my staff sitting on a number of boards and committees to move this city forward.

We are a part of the Portland business community and see the City of Portland as leader in supporting the local innovation economy. Cascade is interested in playing a role in the Early Adopter program and willing to meet with the Advisory Board to provide the private business perspective as well as adding information about our company, products, and services to the tech platform.

Thank you for the opportunity to show our support.

Sincerely,

Ben McKinley
cascade web//development – founder/ceo
brandlive – cofounder/board member

CITY OF PORTLAND

OFFICE OF MANAGEMENT AND FINANCE

Charlie Hales, Mayor
Jack D. Graham, Chief Administrative Officer

Ben Berry
Chief Technology Officer
Bureau of Technology Services
1120 SW Fifth Ave., Suite 450
Portland, Oregon 97204-1912
(503) 823-5198
FAX (503) 823-5194
TTY (503) 823-6868

November 4, 2013

Patrick Quinton
Executive Director
Portland Development Commission
222 NW 5th Avenue
Portland, OR 97209

Dear Mr. Quinton,

The Bureau of Technology Services (BTS) supports the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program. We believe this pilot and program will help facilitate greater opportunities for the City and local businesses to interact, create a platform for exchange, and identify new ideas and solutions for our City's operational and capital project needs.

We see the potential for the Early Adopter program to support us in our mission to provide cost effective and quality services to the public. The program is structured to create a streamlined approach to provide bureaus with current and new solutions that are in the local marketplace. By testing and even purchasing from local companies, city bureaus will realize cost savings and/or increase their service to the Portland community. In the process this will support the next generation of Portland-based companies.

BTS is committed to working with the Portland Development Commission and fellow bureaus to identify ways in which the City as a whole can maximize its financial and capital resources through stronger cross-bureau coordination and private industry partnerships. We believe the Early Adopter program is well positioned to achieve these goals. We are prepared to participate on the proposed Advisory Committee that will meet regularly throughout the next calendar year to further develop and implement the program.

Thank you for the opportunity to show our support.

Sincerely,

Ben Berry
Chief Technology Officer
Bureau of Technology Services
City of Portland

CoPatient

October 30, 2013

FROM: Katie Vahle

CoPatient enthusiastically supports the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program which will facilitate greater opportunities for collaboration between the City and the local technology industry in identifying solutions for city bureaus' O&M and capital project needs.

This proposal presents an opportunity for local companies such as mine to connect with the City in a pioneering way, by providing a platform to exchange information and offer expertise that can leverage the City's resources. Simultaneously, CoPatient finds great value in the potential of a new customer such as the City who is willing test or purchase an early stage product and provide real feedback on its performance.

CoPatient helps consumers manage their healthcare expenses and identify opportunities to save money. We distribute these technology-enabled services through employers who offer health insurance benefits to their employees. In particular, ~2/3 of employers choose to self-fund their health insurance benefits. Therefore, when CoPatient finds medical billing errors, overcharges or even fraud and abuse, we wind up saving money for both the employee and the employer.

We are a part of the Portland business community and see the City of Portland as leader in supporting the local innovation economy. CoPatient is interested in playing a role in the Early Adopter program and willing to meet with the Advisory Board to provide the private business perspective as well as adding information about our company, products, and services to the tech platform.

Thank you for the opportunity to show our support.

Sincerely,

Katie Vahle
Co-Founder
CoPatient, Inc

CoPatient, Inc
101 SW Madison #8518 Portland OR 97207 (mailing address)
1220 SE Grand Ave Portland OR 97214 (physical address)
www.copatient.com

November 4, 2013

Nat Parker
GlobeSherpa
2025 NW Overton Street
Portland, OR 97209

GlobeSherpa supports the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program which will facilitate greater opportunities for collaboration between the City and the local technology industry in identifying solutions for city bureaus.

This proposal presents an opportunity for local companies such as mine to connect with the City in a pioneering way, by providing a platform to exchange information and offer expertise that can leverage the City's resources. Simultaneously, GlobeSherpa finds great value in the potential of a new customer such as the City who is willing test or purchase an early stage product and provide real feedback on its performance.

GlobeSherpa is a Portland, Oregon-based software company that specializes in mobile application development for transit and parking agencies. We strive to be the most innovative provider of mobile software and services that enable our clients to improve operations and better serve their customers.

We are a part of the Portland business community and see the City of Portland as leader in supporting the local innovation economy. GlobeSherpa is interested in playing a role in the Early Adopter program and willing to meet with the Advisory Board to provide the private business perspective as well as adding information about our company, products, and services to the tech platform.

Thank you for the opportunity to show our support.

Sincerely,

Nat Parker

Indow® windows

Keep the warmth inside

November 1, 2013

Patrick Quinton
Executive Director
Portland Development Commission
222 NW 5th Avenue
Portland, OR 97209

Dear Mr. Quinton,

Indow Windows supports the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program. It will facilitate greater opportunities for collaboration between the city and the local technology and clean tech industries in identifying solutions for city bureaus' operations and maintenance and capital project needs.

This proposal presents an opportunity for local companies such as Indow Windows to connect with the city in a pioneering way, by providing a platform to exchange information and offer expertise that can leverage the City's resources. We are a nimble and innovative company by nature and would find great value in the city as a new customer, who is willing to test or purchase an early stage product and provide real-time feedback on its performance.

Indow Windows produces custom thermal window inserts for the residential and commercial markets. Our product creates a double paned window with a patented compression tube resulting in 94% of the thermal insulation of standard double pane replacement windows and overall energy savings that often exceed replacement windows.

We are a part of the Portland business community and see the City of Portland as a leader in supporting the local innovation economy. Indow Windows is interested in playing a role in the Early Adopter program and is prepared to meet with the Advisory Board to provide the private business perspective as well as adding information about our company, products, and services to the tech platform.

Thank you for the opportunity to show our support.

Sincerely,

Sam Pardue
CEO, Founder

2267 N. Interstate Ave. Portland, OR 97227 p. (503) 284-2260 **indowwindows.com**

Institute for Sustainable Solutions

Post Office Box 751 - SUST
Portland, Oregon 97207-0751
Market Center Building
Suite 110, 1600 SW 4th Ave.
Portland, OR 97201

sustainability@pdx.edu
www.pdx.edu/sustainability

November 3, 2013

Patrick Quinton
Executive Director
Portland Development Commission
222 NW 5th Avenue
Portland, OR 97209

Dear Mr. Quinton,

The Institute for Sustainable Solutions at Portland State University (ISS) supports the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program. The pilot is an opportunity for greater collaboration amongst the city, technology industry, and academic partners to build upon the city as a living laboratory.

As an academic institution and the hub for sustainability at Portland State University, ISS sees the potential for the Early Adopter program to support our mission in developing sustainable practices via multi-disciplinary approaches. We recently launched the *Clean Challenge* in partnership with Wells Fargo to support campus clean tech innovators and entrepreneurs. The competition was a great success and an indicator that there is much more to be done to elevate our entrepreneurial potential. There is a tremendous amount of synergy amongst the innovation activities occurring throughout the city. The Early Adopter program is the nexus to capture and leverage the work that has been done to date to prepare tomorrow's workforce, support the growth of the entrepreneur tech community, while benefiting city projects.

ISS is committed to working with the Portland Development Commission to identify ways in which the City as a whole can maximize its financial and capital resources through stronger partnerships with academia and industry. We believe the Early Adopter program is well positioned to help us achieve these goals. We are prepared to be a strategic advisor to the project throughout the next calendar year to further develop and implement the program.

Thank you for the opportunity to show our support.

Sincerely,

Jennifer H. Allen

Jennifer H. Allen, Ph.D.
Director, Institute for Sustainable Solutions and Associate Professor, Public Administration

best™
Oregon Built Environment & Sustainable Technologies Center
503.725.9849
P.O. Box 212
Portland, OR 97207
oregonbest.org

DATE: 11/1/2013

FROM: Ken Vaughn
Director of Commercialization Programs
Oregon BEST

Oregon BEST wishes to express support for the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program to support commercialization of locally-developed clean technology ("cleantech") products by leveraging the purchasing power of city bureaus.

The City of Portland can play a key role in stimulating the adoption of new products developed by Oregon innovators and research scientists in Oregon Universities. By serving as a test customer or early adopter, the company can receive valuable validation and feedback to accelerate the commercialization of their products. The City can gain benefit of the utilization of cutting-edge technologies focused on energy efficiency, sustainable buildings, renewable energy, water management and other areas of the cleantech cluster of technologies.

Oregon BEST is one of Oregon's Signature Research Centers funded primarily by the Oregon Innovation Council. We work with startup companies and university researchers to grow new businesses, new products and high value jobs in the cleantech sector. We are able to provide valuable assistance in supporting the company's research and development to help them get their product ready for the market. However, one of the critical success factors for further commercialization is the acquisition of one or more "lead customers" who can demonstrate the viability of the product to a wider market. Serving as a "lead customer", the City of Portland could put an important stamp of approval on the product and could provide valuable feedback to the company as they ramp up their marketing and sales activities to a wider market.

We are a part of the Portland community and see the City of Portland as leader in supporting the local innovation economy. Furthermore, Oregon BEST is interested in playing a role in the Early Adopter program and willing to meet with the Advisory Board to share our experiences of working with early stage businesses and how this effort could be most beneficial.

Thank you for the opportunity to show our support.

Sincerely,

CITY OF PORTLAND BUREAU OF TRANSPORTATION

Steve Novick
Commissioner

Leah Treat
Director

October 31, 2013

Patrick Quinton
Executive Director
Portland Development Commission
222 NW 5th Avenue
Portland, OR 97209

Dear Mr. Quinton,

The Bureau of Transportation supports the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program. We believe this pilot and program will help facilitate greater opportunities for collaboration between the City and the local technology industry, create a platform for exchange, and identify new ideas and solutions for our bureau's operational and capital project needs.

We see the potential for the Early Adopter program to support us in our mission to provide cost effective and quality services to the public. The program is structured to create a streamlined approach to provide bureaus with current and accessible information about new technologies that are in the local marketplace. By testing and even purchasing from local technology companies, city bureaus will benefit from increasing efficiency through expertise, support the next generation of Portland-based companies, and realize cost savings associated with local purchasing practices.

PBOT is committed to working with the Portland Development Commission and fellow bureaus to identify ways in which the City as a whole can maximize its financial and capital resources through stronger cross-bureau coordination and private industry partnerships. We believe the Early Adopter program is well positioned to help us achieve these goals. We are prepared to participate on the proposed Advisory Committee that will meet regularly throughout the next calendar year to further develop and implement the program.

Thank you for the opportunity to show our support.

Sincerely,

Leah Treat
Director

1120 SW Fifth Avenue, Suite 800 • Portland, OR 97204 • 503-823-5185
FAX 503-823-7576 • TTY 503-823-6868 • www.portlandoregon.gov/transportation

An Equal Opportunity Employer

To ensure equal access, the Portland Bureau of Transportation will make accommodations in full compliance with Title VI of the Civil Rights Act of 1964, the ADA Title II, and related statutes and regulations in all programs and activities. For accommodations and additional information, and complaints, contact the Title II and Title VI Coordinator at Room 1204, 1120 SW Fifth Ave., Portland, OR 97204, or by telephone 503-823-5185, City TTY 503-823-6868, or use Oregon Relay Service: 711.

DATE: 11/01/13
FROM: Kristofer Beem of RapidMade Inc.

RapidMade Inc supports the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program which will facilitate greater opportunities for collaboration between the City and the local technology industry in identifying solutions for city bureaus' O&M and capital project needs.

This proposal presents an opportunity for local companies such as mine to connect with the City in a pioneering way, by providing a platform to exchange information and offer expertise that can leverage the City's resources. Simultaneously, RapidMade Inc finds great value in the potential of a new customer such as the City who is willing to test or purchase an early stage product and provide real-time feedback on its performance.

RapidMade provides advanced design, materials and manufacturing solutions that help clients create new products, accelerate development, improve quality, and lower cost. Early stage and up & coming is where we excel.

We are a part of the Portland business community and see the City of Portland as a leader in supporting the local innovation economy. RapidMade Inc is interested in playing a role in the Early Adopter program and willing to meet with the Advisory Board to provide the private business perspective as well as adding information about our company, products, and services to the tech platform.

Thank you for the opportunity to show our support.

Sincerely,

Kristofer Beem

October 29, 2013

FROM: Walker Tracker

Walker Tracker supports the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program which will facilitate greater opportunities for collaboration between the City and the local technology industry in identifying solutions for city bureaus' O&M and capital project needs.

This proposal presents an opportunity for local companies such as mine to connect with the City in a pioneering way, by providing a platform to exchange information and offer expertise that can leverage the City's resources. Simultaneously, Walker Tracker finds great value in the potential of a new customer such as the City who is willing to test or purchase an early stage product and provide real feedback on its performance.

Walker Tracker creates and administers private, activity-based wellness portals for organizations. We provide the tools, communications structure, and expert guidance to integrate wellness into your organizational culture, engaging employees in fun challenge events that promote exercise and well-being.

We are a part of the Portland business community and see the City of Portland as leader in supporting the local innovation economy. Walker Tracker is interested in playing a role in the Early Adopter program and willing to meet with the Advisory Board to provide the private business perspective as well as adding information about our company, products, and services to the tech platform.

Thank you for the opportunity to show our support.

Sincerely,

David Mays
President
Walker Tracker

CITY OF PORTLAND
ENVIRONMENTAL SERVICES

1120 SW Fifth Avenue, Room 1000, Portland, Oregon 97204 ▪ Nick Fish, Commissioner ▪ Dean Marriott, Director

October 31, 2013

Patrick Quinton
Executive Director
Portland Development Commission
222 NW 5th Avenue
Portland, OR 97209

Dear Mr. Quinton, Patrick

The Bureau of Environmental Services (BES) supports the Portland Development Commission's proposal to the City of Portland Innovation Fund for an Early Adopter program. Like all government, BES is under pressure to accomplish more with fewer resources. We would welcome greater opportunities for collaboration between the City and the local technology industry to identify new ideas and solutions for our bureau's operational and capital project needs. Our understanding is that the Early Adopter program would create a platform for exchanging ideas and solutions between the public and private sectors.

Our core mission requires that we provide cost effective and quality services to the public. Our experience is that information about new technologies that are available in the local marketplace is the key to innovation in our business practices that can help us drive down costs of operations and maximize the effectiveness of our capital improvement program. The ability for BES employees to discuss problems directly with local technology companies allows for rapid development of new ideas, products and services that are beneficial to all parties.

Currently, we meet with companies seeking the kind of feedback and communication that is proposed in the Early Adopter program. We also share best practices with other bureaus. An inter-bureau Advisory Committee that brings focus to these interactions for the benefit of the City and our local technology industry could make the process even more effective.

BES is prepared to work with the Portland Development Commission and other bureaus to identify ways in which the City as a whole can maximize its financial and capital resources through stronger cross-bureau coordination and private industry partnerships. The Early Adopter program should position us to help achieve these goals. We would be pleased to participate on the proposed Advisory Committee to further develop and implement the program.

Thank you for providing leadership on this issue.

Sincerely,

Dean

Dean Marriott

Bureau of Planning and Sustainability
Innovation. Collaboration. Practical Solutions.

MEMO

DATE: November 4, 2013

TO: Innovation Fund Task Force

FROM: Susan Anderson, Director

CC: Andrew Scott, City Budget Office
Patrick Quinton, PDC
Leah Treat, PBOT
Mike Abbaté, Parks and Recreation

SUBJECT: Support for three Innovation Fund proposals

In addition to the two proposals that BPS has submitted, I would like to express support for three other proposals to the Innovation Fund.

1. PDC: Early Adopter Program
This program will help facilitate opportunities for collaboration between the City and the local technology industry, accelerating the adoption of innovative technologies by bureaus and supporting emerging products and services developed by Portland businesses.

The Early Adopter program has the potential to advance BPS's mission to provide creative and practical solutions to community challenges. By testing and in some cases purchasing innovative products and services from local technology companies, bureaus can benefit from increased efficiency while supporting the next generation of Portland-based companies.

This program aligns with existing BPS activities, including assisting new companies with identifying demonstration opportunities throughout the City of Portland. In addition, we are currently updating the Climate Action Plan and have identified business partnerships as a strategy to accelerate carbon-reduction solutions. Improved information exchange with industry will strengthen our ability to recognize and support emerging innovations at local firms.

2. PBOT: Old Town Chinatown Neighborhood Energy Efficient Transportation Mobility Hub
PBOT's proposal to improve both the energy efficiency and functionality of the lighting in the Entertainment District exemplifies the work of the City Energy Challenge, which seeks to cut

City energy bills, reduce carbon pollution, and improve City services. LED lighting offers both energy savings and increased public safety. LED lighting has the dual advantage of using substantially less energy than the technologies it replaces—often savings of 50 percent or more—while also adding the ability to dim or brighten lighting levels as needed. PBOT's proposal also includes transportation surveillance cameras for monitoring performance of the traffic signal system, expanding the City's capabilities to manage its transportation system in real-time.

3. Parks: Aquatic Center Water Heating Efficiencies and Replacement of Walker Direct Digital Control System

Parks is proposing to upgrade boilers at six of its aquatic facilities and replace the aging control system for its heating and ventilation system at the Dishman Community Center. Like the PBOT LED project, these projects advance the City's long-standing City Energy Challenge, in this case by improving the efficiency of building systems to save energy and improve the comfort and customer experience of the facilities. Both of these projects are reliable investments in demonstrated technologies that will produce a return to the General Fund while advancing the City's energy and carbon goals.

BPS is prepared to provide technical assistance and otherwise support PDC, PBOT and Parks in implementing their proposals, including serving on PDC's proposed Advisory Committee and assisting in any remaining processes and paperwork to secure Energy Trust rebates.

Please let me know if you have questions about our interest in any of these proposals. Thank you for the opportunity to convey my support.

Bureau of Planning and Sustainability
Innovation. Collaboration. Practical Solutions.

MEMO

DATE: November 4, 2013

TO: **Innovation Fund Task Force**

FROM: Susan Anderson, Director

CC: Andrew Scott, Budget Director

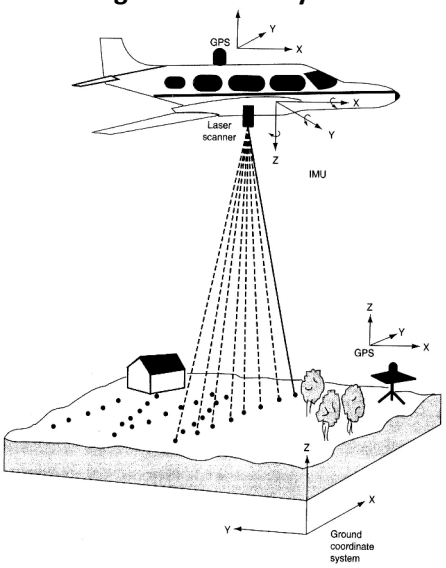
SUBJECT: Innovation Fund Proposal: Updated LiDAR Data for Portland

Introduction

This proposal helps fund a new, summer 2014 regional LiDAR (Light Detection and Ranging) flight to update the City's current LiDAR data which dates from 2004, 2005, and 2007. While the City has used LiDAR for a wide range of innovative analysis to date, as described below, Portland's data sets are drawn from three, non-overlapping LiDAR flights from different years, of varying quality, and therefore of varying utility. The updated data will both capture current development conditions, which have changed substantially since 2004, and provide much higher quality information, giving bureaus vastly improved power to map, analyze, and act on development issues.

LiDAR is a plane-based sensor that sends a pulse of infrared laser light toward the ground, collects the reflections of that pulse back at the sensor, and precisely measures the travel time of the laser from all objects from which it is reflected. This travel time is measured against the known location of the sensor—calculated using GPS and other equipment that measures the orientation of the plane—to establish the elevation of each reflecting location. These pulses are sent in rapid succession, such that a laser pulse hits every 6 to 12 square inches of surface and objects that sit on that surface (buildings, vegetation, power lines, signs, etc.). Figure 1 shows a basic LiDAR system.

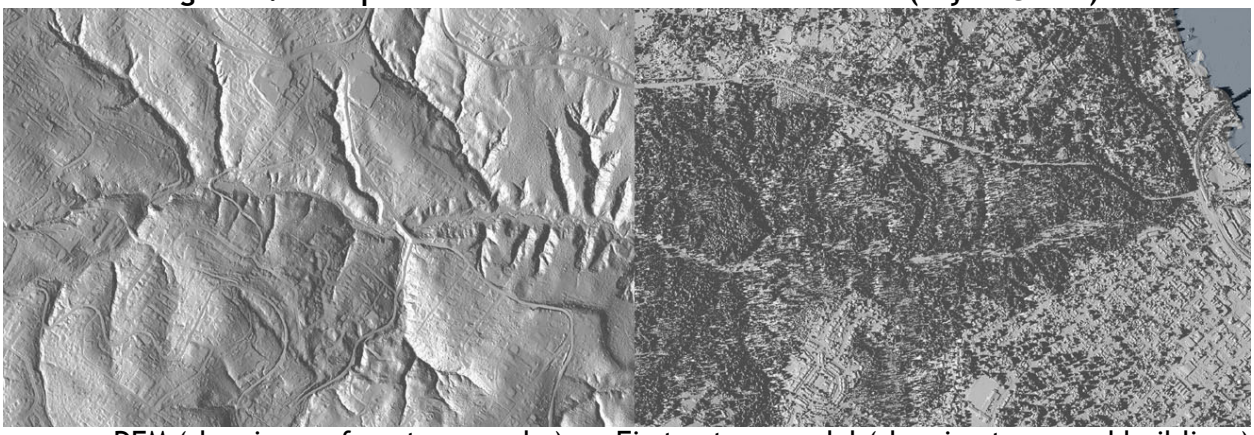
Figure 1: LiDAR system



Source: USGS

Through post processing of the data, precise models of both the surface topography (the ground, known as a "digital elevation model") and the tops of things on that ground (the "first return" model) can be derived. These models are extremely accurate: current sensors can locate objects in three-dimensional space with an average error of three inches or less. Figure 2 below shows an example of these LiDAR-derived models.

Figure 2: Examples of LiDAR-derived elevation models (Tryon Creek)



DEM (showing surface topography) First-return model (showing trees and buildings)

Source: City of Portland, Bureau of Planning and Sustainability

LiDAR is extremely effective at surveying large areas quickly and accurately. A single flight covering the City of Portland urban service boundary could be done in less than one day. It would entail roughly 6 billion laser pulses, with an average of four reflections received from each pulse. This would result in approximately 24 billion individual survey measurements of the surface and all that sits on it. The scale of this measurement is what makes LiDAR so valuable, so cost effective (compared to traditional methods of survey), and so revolutionary in terms of our ability to collect and create geographic data.

The City of Portland has used LiDAR is a variety of ways, some very innovative, including the following:

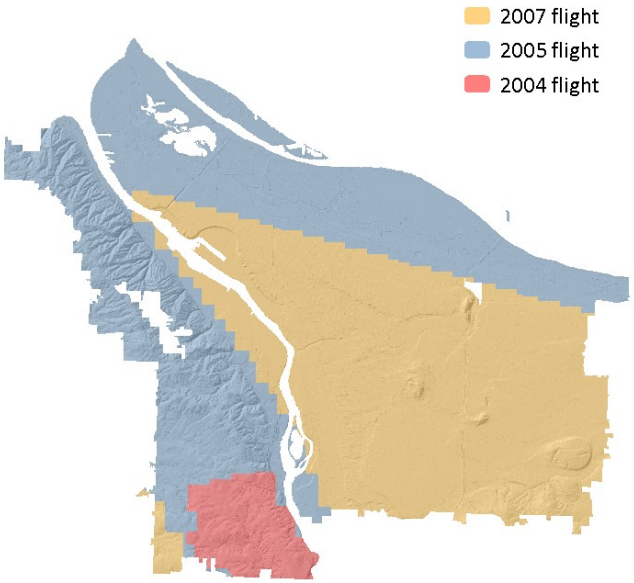
1. Building mapping:
    - Until LiDAR data first became available throughout Portland in 2007, the City had a relatively poor understanding of where buildings were located, how tall they were, and their square footage.
    - A 2007 LIDAR flight allowed us to automate the mapping of all buildings in the Portland metropolitan area (~600,000 structures); it also allowed us to better identify where there were no buildings, improving the accuracy of our inventory of vacant land.
    - LiDAR-derived buildings are one of the primary inputs into the City's land use and development forecasting models. An accurate map of buildings allows us to compare what exists on the ground with what is allowed to be built, thus identifying buildings likely to be redeveloped because they greatly underutilize their allowed development capacity; these locations will accommodate most of Portland's growth over the next 30 years.
    - Portland was one of the first cities in the nation to create a detailed 3D model of buildings for the entire metropolitan region, a model which is widely used for planning purposes both inside and outside the City.

2. River, stream and wetland mapping:
    - When LiDAR became available throughout the City in 2007, BPS mapped over 300 miles of streams in the City using automated mapping techniques, including 130 miles of streams that were unknown before LiDAR identified them.
    - LiDAR has been the main reference for wetland delineation when a field survey is not possible or practical. LiDAR is also used to supplement field delineation.
    - BPS used LiDAR data and U.S. Army Corps of Engineers surveys to map "Ordinary High Water" for both the Willamette and Columbia Rivers. This has been a critical dataset for the West Hayden Island project.
3. Hydrologic modeling:
    - BES's Asset Systems Management team developed a tool, the Basin Delineator, to help create high-quality surface water basin boundaries for stormwater system planning. Previously, most basin delineation had been done using manual methods across a variety of programs and projects, which was time consuming and produced relatively low-quality delineations. This tool would not have been possible without the availability of LiDAR.
4. Automated image classification (vegetation and impervious surfaces mapping):
    - LiDAR has allowed for more accurate mapping of vegetation—most notably tree canopy—throughout the City.
    - BPS is working on automated methods of tree canopy mapping that would use future LiDAR flights, with simultaneously collected high-resolution digital aerial images, to map tree canopy in the City with a very high level of accuracy. Portland would be one of the first jurisdictions in the nation to use this approach, especially at the image resolution from a new combined aerial/LiDAR flight (three inches);
    - BPS is also developing a methodology for using new, more accurate and consistent LiDAR data to automatically map impervious surfaces at the same three-inch resolution.
5. Infrastructure planning:
    - LiDAR has been used by BES to identify micro-basins that could negatively impact the performance of green street facilities, and is used extensively in the design of these facilities.
    - LiDAR is used extensively by BES, PBOT and Water in the pre-design of facilities and system changes. Recent examples include the Tryon Creek sewer line replacement, Luther Road Johnson Creek restoration, Glenwood/Bybee culvert replacement, and the Powell Butte and Kelly Butte reservoir projects. LiDAR is also used to augment field surveys, which are expensive and difficult to conduct over large areas.
6. Hazard mapping:
    - City LiDAR data has been used by FEMA to improve the precision of floodplain maps, including the Special Flood Hazard Area (100-year floodplain).
    - BES has used LiDAR data to model potential flood events in the Columbia Slough.
    - LiDAR has been used by Oregon's Department of Geology and Mineral Industries (DOGAMI) to map earthquake faults in the Portland area.
    - LiDAR has been used extensively for landslide hazard mapping. BPS, PBEM, and BES are currently working with DOGAMI to find funding to produce high-quality, detailed maps of landslide risk areas from LiDAR-derived elevation models to improve the City's ability to prepare for landslides. (BPS is also submitting a proposal to the Innovation Fund to support the landslide mapping project.) Newer LiDAR data would improve the accuracy of this mapping.

Background

The Portland region was one of the first urban areas in the U.S. to use LiDAR. The City of Portland flew a small LiDAR pilot in the Tryon Creek watershed in 2004. We partnered with DOGAMI and several federal agencies to fly the Columbia Slough and Portland's West Hills in 2005. In 2007, Portland partnered with Metro and 30 or so other local, state, and federal organizations to fly the remaining areas of the Portland metropolitan area that were not flown in 2004 and 2005. Figure 3 below shows the extent of the three Portland LiDAR flights.

Figure 3: Portland LiDAR flights



Source: City of Portland, Bureau of Planning and Sustainability

The technology has improved dramatically in the last decade. The 2004 and 2005 systems in particular were fairly immature, with much less precise measurement compared to the 2007 flight—approximately one measurement per square meter, as opposed to the eight measurements per square meter in 2007. The accuracy of the measurement in 2004/2005 was also significantly lower—12 to 18 inches versus the six to eight inches of the 2007 flight. The result is a significant portion of the City—a portion with some of the most variable terrain and surface cover—is mapped much less accurately than the areas covered in 2007. Consequently, all products derived from the older LiDAR data—buildings, streams, vegetation—and the infrastructure and planning work that relies on LiDAR-derived elevation models for an accurate elevation model is less accurate as well. A new LiDAR flight would be more accurate than the 2007 flight and significantly more accurate than the 2004/2005 flights. Table 1 on the following page summarizes the changes in data quality since 2004.

Table 1: Summary of Portland LiDAR flights

Flight year	Precision	Average Accuracy
2004	1 pulse/square meter	8-12"
2005	1 pulse/square meter	6-12"
2007	8 pulses/square meter	6-8"
2014 (proposed)	12 pulse/square meter	2-6"

Source: TerraPoint (2004/2005), Watershed Sciences (2007), DOGAMI (2014)

The inconsistency in LiDAR data is the basis for this proposal. Portland is currently covered by three outdated, non-overlapping LiDAR flights of varying quality and, therefore, of varying utility.

Project planning is currently underway for a summer 2014 LiDAR flight that would re-fly the entire Portland metropolitan area (as well as collect three-inch resolution aerial photos). The project is being organized by Metro under the umbrella of the "Regional Aerial Consortium," an organization comprised of all jurisdictions within the urban growth boundary that funds yearly aerial photo flights. The City of Portland belongs to this consortium, and agencies within the City contribute to a budget of approximately $30,000 per year dedicated to purchasing yearly six-inch resolution photos (this budget is managed by the Bureau of Technology Services Corporate GIS team). Because a combined LiDAR/aerial photo flight and post-processing is significantly more expensive than aerial photos alone, the anticipated cost to the City for the 2014 flight is estimated to be $120,000 to $180,000 (of a total project cost to the Metro consortium of approximately $700,000). Given the wide range of expected innovative applications of these data sets, we are seeking up to $150,000 from the Mayor's Innovation Fund to make up some or all of that difference.

Project Description

1. Scope of work: Partner with Metro to contract and fund a summer 2014 LiDAR/aerial photo flight for the Portland metropolitan area; all resulting products will be delivered as Geographic Information System (GIS) files; files and all resulting products will readily accessible to all City bureaus via the City of Portland's central GIS "hub."
2. Type of project: Use latest LiDAR technology to improve the mapping of surface topography and objects on the surface in the City of Portland.
3. Potential challenges or obstacles: The project would be contingent on other jurisdictions in the Metro consortium increasingly their yearly funding for aerials to include LiDAR as well. This is not a certainty, but Portland's commitment would strongly convey the value to other jurisdictions of participating. Funding LiDAR on our own is probably not feasible at this time, as the cost to Portland would double or triple. There is no financial risk. The City would only commit funding if the project moves forward as planned.
4. Lead bureau and other groups impacted:
    - Metro is the lead agency for managing and administrating the LiDAR flight and contracting with the consultant.

- BPS has historically served as the lead organization in the City for managing and processing LiDAR data and anticipates continuing to do so. All products will be made available to all City bureaus as they become available.
- BPS will work with the BTS Corporate GIS team on the specifics of the project budget and administration of any Innovation Fund resources.
- BPS, BTS Corporate GIS, and BES will continue to participate in the Metro aerial consortium that is planning the 2014 flight.

5. Project timeline: Planning is currently underway for the 2014 flight, targeted for either summer or early fall. The current priority is securing enough funding from all participating jurisdictions. About 20 local jurisdictions have committed to the project, with the condition that most of the 30 or so participating agencies join the project.

Project Outcomes

6. Cost Savings: LiDAR generates in a variety of cost savings across multiple bureaus. It reduces the need for field survey, which is time consuming and requires cooperation of property owners. Manual mapping of features like streams and buildings is also time consuming and, without LiDAR, not possible in many areas due to a lack of consistent data. LiDAR also prevents costly mistakes in the design of systems like green streets and stormwater facilities by accurately mapping surface topography, drainage basins, and allowing for better predictions of overland water flow.
7. Benefits: Current, seamless, consistent LiDAR coverage of the entire City.
8. Operational Efficiencies: This project will make detailed and accurate topographic, building, hydrologic, and vegetation data readily available to City planners, engineers and designers. Efficiencies will be achieved through avoiding staff time and costs associated with field survey. Additional operational efficiencies will be gained from reducing risks from natural hazards like floods, landslides, and earthquakes by better mapping the location of those hazards.
9. Performance Metrics: New LiDAR data and derived elevation models made available to all City agencies by the end of 2014.

Budget

10. Funding Request:
    Contractor: TBD (Contract will be administered by Metro)
    Estimated Total Budget: ~$700,000
    Estimated City of Portland contribution: $120,000 to $180,000
    City of Portland currently budgeted: $30,000
    Requested funding for City of Portland shortfall: $90,000 to $150,000

    **the exact shortfall will depend on how many jurisdictions contribute to the project; $150,000 is estimated to be the maximum potential shortfall*

Fiscal Year	Budget
FY 13-14	$0
FY 14-15	$90,000 to 150,000
FY 15-16	$0

11. Leveraged Funds: Total cost of a regional LiDAR flight is approximately $700,000, of which the City will pay a maximum of $180,000. Metro will also pay $180,000. The rest of the cost will be paid by other regional jurisdictions such as Washington County, Multnomah County, City of Gresham, Oregon City, Lake Oswego, etc. A complete list or jurisdictions and their potential contribution to the project will be provided when it is finalized in early 2014.
12. Return on Investment: A new LiDAR flight will mean more accurate topographic information for the City as a whole at a relatively low cost. It will mean more efficient use of field survey crews, more comprehensive and more accurate GIS data (buildings, streams, wetlands, etc), more efficient and accurate infrastructure design and planning, and better knowledge of potential hazards (floods, landslides, earthquake) in the Portland area.
13. Ongoing Operations and Maintenance Costs: None
14. Staff Requirements: Staff requirements include project oversight, coordination with Metro and other local jurisdictions, coordination with Metro on the Request for Proposals, and data processing and distribution by the Bureau of Planning and Sustainability and the Bureau of Technology Services Corporate GIS program. BPS is prepared to fulfill these responsibilities within its existing staff and budget.
15. Project Contacts:
    - Project Coordinator: Kevin Martin, Technical Services Manager, Bureau of Planning and Sustainability, 503-823-7710, kevin.martin@portlandoregon.gov
    - Budget Lead: Mitch Vanderperren, Corporate GIS Solutions Architect, Bureau of Technology Services, 503-823-5632, Mitch.Vanderperren@portlandoregon.gov
    - Technical Support: Mark Liebe, Bureau of Environmental Services – Asset Systems Management, 503-823-7607, mark.liebe@portlandoregon.gov

Innovation Fund Proposal
Capital Improvement, Utility, Maintenance, & Construction Coordination

Overview
PBOT is the lead bureau in charge of preserving one of the City's largest assets, our streets, and providing a platform to work and coordinate work in the public right of way. Consolidated coordination will allow the bureau to share basic information to identify and resolve potential conflicts on projects and in-street construction before they result in costly pavement cuts, trench patching or paving, and avoid multiple and conflicting traffic disruptions for the public that we have seen repeatedly over the past few years.

This funding request is for a web-based application system for tracking and mapping agencies' capital improvement (CIP) and maintenance plans, plus management systems to enable coordinated decisions for both immediate and long term work in the public right of way at the most comprehensive level. For optimum performance access of both internal (other City bureaus and agencies) and external stakeholders (other jurisdictions and private utilities and developers) is essential. Participation is required from all public agencies and utilities with assets (pavement, traffic signals, water lines, and sanitary sewer systems, in addition to those owning conduit, vaults and cabinets, poles, transformers, etc.) in the public right of way. The bureau will utilize off-the-shelf systems that interface with electronic data without a need for significant detailed customization. These systems exist in the market currently and can provide broad benefit for managing the City's assets.

Currently CIP and capital maintenance planning and coordination for public right of way work is done through a number of separate and disparate systems. Problems with the current business practices exist: lack of central data and decision making; lack of a lead bureau; several failed attempts to overhaul the process with internal solutions; data on City corporate systems is not current and not well maintained; isolation of various systems creates data error, rework and duplicative data entry; employing technical staff unfamiliar with projects to look for and manage errors and omissions; and, CIP data that does publish to Portland Maps and creates liability for the City due to the inaccuracies. In addition, mapping and reporting is not standardized for the coordination process.

Project Description
The proposed solution is technology plus management and process improvements, with funding requested for testing viability and start-up of the system.

Through the technology, effectiveness will be achieved by public right of way utilities and asset managers mapping planned work in one controlled city-wide system. The system outcomes include at the most basic level, identifying overlapping and potentially conflicting work areas and defining resolution for construction activities. Identified overlaps will inform decision making across the city for planning capital and maintenance work. An agency making self-

motivated bottom-line business decisions today would use this system to decide where to invest in capital expansion/capital maintenance by considering others' pavement cuts, temporary lane or street closures, and pavement work. For PBOT, as asset manager of the pavement system, less pavement cuts and temporary right of way work sites simply equate to longer pavement life and better flowing traffic and safety during construction.

Benefits of technology coupled with process improvements will allow:

- leveraging technology to reduce manual processes or increase performance
- streamlining business processes
- implementing lean process improvement
- improving customer service
- collaborating with other governments and the private sector to reduce costs
- consolidating services currently provided by multiple entities to enhance service delivery and reduce costs.

Work Scope

Project Type: technology; consolidation of services; process improvement; and redesigning business processes

Technology Elements:

- Map-based CIP coordination system
- Allow the sharing of project data with other outside parties involved in construction management in the Portland Metro area.
- Project conflict identification, reporting and resolution.
- Comprehensive CIP Coordination: internal City and external stakeholders
- Data Input: Upload/Project Creation
- Status: Reports and notifications
- Contains historic data
- Watch Flags and Dashboard to monitor conflicts
- Map and Filtering to provide details on locations and projects
- Reporting and querying
- Public Access (with filters and access controls on permission)
- Interface with parcel-based permitting software underway with ITAP Project
- Coordination and Conflict Resolution: Results to inform comprehensive CIP coordination
- Off the shelf technology without the need for special customization
- Work with any standard web browser

Greatest Challenge: For success, this technology must be accompanied by organizational transformation and process improvements; these are key components. This will build upon similar coordination that has occurred with the City's permitting functions. Lack of a coordinated capital expansion and maintenance planning across the city is a long standing problem. The Bureaus of Environmental Services and Transportation, and the private utility Northwest Natural Gas explored a technology solution together in 2009. Barriers that prevented a more coordinated system change included: (a) a lack of City bureau controls on reporting CIP data from inconsistent platforms and inconsistent reporting; (b) cost to implement; and, (c) the need for all asset owners to use the system but lack of sufficient mandates to a broad based use. With this grant, the cost barrier of "(b)" is significantly reduced. The new technology coupled with a project management/process improvements will address "(a)".

Bureaus, agencies, and utilities each use individual separate systems for planning and tracking capital work and this requires a consolidated system. With this new system, the City would require all agencies with assets in the right of way needing maintenance and upkeep (virtually all) to either convert to the city's system, or maintain two systems. Due to the significance of this issue, a feasibility phase is requested to allow for options to be considered in more detail and depth.

The implementation would also be significant enough to merit review by the Council directed Technology Oversight Committee.

Budget Request

The project includes three phases:

(1) feasibility-scoping including impacts analysis and recommended implementation

(2) implement technology and business practices including feedback and adjustments

(3) monitor and manage

A grant is requested for phases (1) and (2):

Start-up costs plus ongoing management and software maintenance costs are anticipated.

Staff requirements: In addition to each bureau's current CIP coordinators, bureaus' maintenance staff need to be involved. IT staff need to be involved for planning, compatibility analysis, procurement and deployment. A new FTE assigned to manage the project during all project phases (planning, development, procurement, etc. and implementation) is anticipated; this would either be an expanded role for an existing PBOT staff-person involved in CIP coordination or a new position.

Program Management: 1.0 FTE in year 1; ½ FTE for year 2 and 3

Each effected bureau is assumed to covered costs and resources with current staffing plans and revenue. Assumption assumes the technology provider converts data at start up and is included in the purchase price.

Technology Procurement and Implementation: Cost depends on data conversion required and customization. Estimate $250k - $750k (very low confidence level to be refined during scoping period of the project)

Ongoing Technology Maintenance: $50-100k annually (low confidence level – to be refined based upon actual off-the-shelf technology selected)

Return on investment timeline: immediately after project implementation for conflict and coordination; 2-4 years estimated to see better asset management results

Stakeholders and Other Bureau Support

Bureau support will come from BTS as this is envisioned to interface with city CGIS and Portland Online systems. It must have the Council directed commitment of other bureaus and outside agencies. By bureaus included in addition to PBOT, PWB and BES, and likely POEM and Community Technology/Cable and Franchise. Other government agency buy-in includes ODOT, TriMet, the Port of Portland, and Multnomah County. Support is essential from franchise/tariff-based Utilities including Gas, Telecom, Electric, etc. Support from these entities would probably be by mandate from the City, however this requires investigation in the initial phase of the project. If a private utility chooses to participate by their choice, it would likely based on a benefit/cost study for holding down rates.

If awarded:

Upon award of the grant PBOT as lead agency will:

- Assign a lead project manager
- Prepare a three-phase plan, including scope, estimates and target milestones:

  (1) feasibility-scoping (a) impacts analysis (b) recommended implementation (including financing strategies for the ongoing maintenance and management of the system)

  (2) implement technology and business practices (a) feedback and adjust

  (3) monitor and manage
- Develop an input strategy including right of way utility/asset managers, technical advisors, legal counsel
- Prepare and submit periodic project reports including status, updates to timeline, progress on meeting stated milestones, expenditures to date, action plans and success factors.
- Be available to meet with project sponsors to share findings, discuss solutions, and problem solve roadblocks to success for each of the projects.
- Upon conclusion of steps (1) and (2) of the project, PBOT will submit a close-out report documenting the actual budget used for the project, actual savings or benefits obtained

(one-time or ongoing), and actual impacts, including any unintended consequences. The report will also highlight the lessons learned and the applicability of the project outcomes to other areas of the City.

Contacts:
This proposal and project funding request is supported by PBOT Director Leah Treat.

Application prepared by Christine Leon, PBOT Development/Street Systems Management Division Manager.

Information sources: Susan Aldrich, Mark Liebe - BES, Kevin York, Alex Bejarano – PBOT