

DRAFT

Portland Bureau of Housing and the Portland Development Commission

2009 Green and Healthy Affordable Housing Policy

**Drafted in Coordination with the
The Green and Healthy Affordable Housing Coalition**

May 18, 2009



Morrison Apartments Affordable Housing
LEED for New Construction Gold Certified



Watershed at Hillsdale - Senior Affordable Housing
LEED for New Construction Silver Certified

Green & Healthy Affordable Housing Policy

— Introduction —

Healthy, durable and affordable housing is central to accomplishing many of the City of Portland's goals. Green affordable housing increases the number of individuals in the community, including low-income seniors, people with disabilities and low-income working families that have a safe home and the opportunity to succeed. Affordable housing enhances the livability of Portland's neighborhoods, supports a vibrant central city and maximizes investments in our transportation system. Providing stable housing for children of all income levels is absolutely essential to the success and stability of schools throughout the region.

Green building improves the environmental performance of multifamily residential buildings and indoor environmental quality, stimulates the local economy and reduces the long-term costs of operations and maintenance. For nearly a decade Portland housing developers have been gaining and improving their expertise in green building design and construction. Especially in recent years, net gains in stormwater diversion, energy and water efficiencies, carbon emissions reductions and improvements in indoor air quality have been achieved. Yet, green building is not yet standard practice for affordable housing development in the City of Portland.

The U.S. building stock is predicted to nearly double by the year 2030, creating an enormous opportunity for Portland and the country to use smart, innovative and sustainable design to significantly reduce the negative impacts that buildings have on the environment and on the health of those who live, play and work in them.

— Background —

Since 2002, the City of Portland and the Portland Development Commission have provided the *Greening Portland's Affordable Housing* guidelines as a resource for developers to make affordable housing more energy efficient and sustainable. That policy is now seven years old and out of date for a city that is a leader in sustainable living. In keeping with current market trends, in 2008 the Oregon Housing and Community Services Department, and in 2009, the U.S. Department of Housing and Urban Development added green criteria and green financial incentives to their affordable housing programs.

On April 27, 2005, the Portland City Council passed a resolution to:

Implement a comprehensive update to the City of Portland's Green Building Policy to reflect advances in green building knowledge and practices.

That resolution included the following:

NOW THEREFORE, BE IT RESOLVED that the Portland City Council amends the City of Portland's Green Building Policy to direct all City Bureaus and the Portland Development Commission to . . . Update the City of Portland's Affordable Housing green building thresholds and voluntary guidelines.

Additionally, in March 2007, the Portland City Council adopted Resolution No. 36488, directing the Office of Sustainable Development, now the Bureau of Planning and Sustainability, to create policy options that would reduce electricity and fossil fuel use in the city by 50 percent by 2030.

In response to that direction, in September 2007, the Portland Development Commission convened a **Green & Healthy Affordable Housing Coalition** (Coalition¹) consisting of affordable housing developers, representatives from Portland bureaus and offices, and Oregon's Housing and Community Services Department. The Coalition's mission was:

Update Portland's Green Affordable Housing standard² in coordination with related initiatives in Portland and the State of Oregon. The new policy should reflect industry best practices and specifically address climate change, social equity, tenant health, durability and funding.

The Coalition discussed affordable housing development challenges including funding gaps; trade-offs between green construction premiums and lifecycle savings; absence of a state health-based ventilation code; need for market data to validate green investments; durability and asset management; streamlining multiple funding standards, applications and reports; and addressing the impacts of value engineering that can override specifications designed to promote durability, energy efficiency and other performance-based design metrics.

This paper captures the general consensus that emerged after a year of deliberations by the Coalition and addresses most of the identified concerns. When complete, this policy will be submitted to the Portland City Council and the Development Commission Board (and the Housing Commission?) for approval. This paper also summarizes the business case in support of this policy. See Appendix I.

Funding Challenges

Affordable housing developers are eager to construct the most energy efficient, durable and healthiest buildings possible; however they operate on a slim funding margin that often requires ten to fifteen separate funding sources in order to finance a project. Many of the green building investments identified in this paper have reasonably short payback periods of one to five years, but others, primarily those associated with energy efficiency and healthier living spaces also have long-term social and financial benefits that warrant public investments to defray higher initial costs. This paper includes specific funding recommendations that support the City's goals of seeking to achieve greater social equity and supporting affordable and healthy housing for the greatest number of citizens possible. See Appendix II.

¹ See Appendix III for a list of participants.

² Portland's *Green Affordable Housing Guidelines* are referenced in PDC's *Green Building Policy Program Guidelines*, last updated in 2005, http://www.pdc.us/pdf/dev_serv/green-building-guidelines.pdf.

— Policy Intent —

The goals of this policy are to take the next logical steps toward attaining the City of Portland's sustainability objectives.³

1. Improve energy efficiency and reduce greenhouse gas emissions.

The energy efficiency requirements in this policy will reduce the energy use and carbon releases in affordable housing, an objective that is consistent with the City Council's commitment to reduce greenhouse gas emissions 80 percent from 1990 levels by 2050.

2. Improve community equity and access to healthy, affordable housing.

The implementation of the Green & Healthy Affordable Housing Policy would directly improve social equity in at least two ways. First, meeting the ASHRAE (American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc.) standard for indoor air quality helps assure that the city's most needy families, individuals and children, many of whom lack health insurance, live in housing that meets a minimum standard for air quality. Unhealthy indoor environmental exposures exacerbate asthma and other respiratory diseases, which result in significant human and monetary costs.

Second, improving energy efficiency reduces tenant utility bills for families and Community Development Corporations, which are among the least able to afford rising energy costs (predominantly natural gas and electricity). For example, achieving energy efficiency that is 15 percent above state code will reduce a tenant's annual energy bill by about 15 percent annually. According to the U.S. Government Accountability Office,

“When used in affordable housing projects, green building practices can result in long-term financial and health benefits for residents.”⁴

3. Protect and conserve natural resources.

Green building design and construction achieve documented improvements in water conservation, stormwater management, construction and solid waste generation, and the use of safe, local building materials.

4. Increasing the number of regional green jobs.

When energy and water utility bills are reduced households can spend more of their income on local goods and services, multiplying the impact on the local economy and supporting businesses that generate new jobs. The expansion of green building

³ See the Bureau of Planning and Sustainability website.
<http://www.portlandonline.com/osd/index.cfm?&c=eegcd&a=bfgiaa>

⁴ *Green Affordable Housing: HUD Has Made Progress in Promoting Green Building, but Expanding Efforts Could Help Reduce Energy Costs and Benefit Tenants.* GAO-09-46, October 2008.

construction supports existing local businesses and generates new firms in business sectors such as sustainable design, lighting, native landscaping, architecture, green construction, salvage operations, renewable energy producers and installers, vendors of green building products, commissioning agents and many other related professions.

— Policy —

A. Applicability. The requirements of the Green and Healthy Affordable Housing Policy apply to,

1. New construction and major rehabilitation of multi-family rental housing projects in the City of Portland in which at least 40 percent of the housing units will be occupied by those earning zero to 60 percent of the median family income (MFI), AND,
2. A multi-family rental housing project receiving public financial assistance from the City of Portland of at least \$500,000 in loans and/or grants.
3. For the purposes of this policy, major remodels are defined as permitted alterations and additions in which:

The Project Permit Valuation of Work exceeds \$250,000; AND at least one of the following is true:

- At the time of application, the Permit Valuation is greater than or equal to the Real Market Value of the property as determined by the County Tax Assessor; OR
- A change of occupancy affects more than one-third of the building gross square footage; OR
- An addition of building gross square footage greater than or equal to the gross square footage of the existing building.

B. Green Building Certification. To document the achievement of this policy's specified environmental and human health thresholds, a third-party shall verify that the required green design specifications of a market-based green building rating system were met.

It is required that at least one of the following third-party verified green building certifications be achieved, as determined by the size of the project.

1. Enterprise Foundation's Green Communities.

The Green Communities standard for affordable housing has been broadly and successfully used in Oregon and throughout the United States. It is not strictly a third-party certification program; however, this system requires that the project architect must verify that the certification requirements were achieved.

2. Earth Advantage.

Earth Advantage is a residential green building rating system that began about a decade ago and has certified thousands of homes. It is an Oregon nonprofit organization that has branched out and is now available in other states and it is a successful, standard for improving the environmental performance of residential buildings.

3. U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED).

LEED is a green building rating system that has become the defacto world standard for green buildings. As of April 2009, over 22,000 buildings around the world had registered to become LEED certified. Several well-documented studies published since 2007 have shown that on average commercial LEED certified buildings have lower operating costs, improved indoor environmental quality and higher market value.

Project Size	Certification Requirement
Townhomes, Duplexes, Triplexes and Rowhouses of 4 or fewer detached units	Enterprise Green Communities
New construction and major rehabilitation < 60,000 sf in size	Earth Advantage Silver
New construction and major rehabilitation ≥ 60,000 sf in size	LEED v.3 for New Construction Silver

Table 1.

Certified Green Building Financial Incentives. The City of Portland’s draft High Performance Green Building Policy proposes a financial incentive for affordable housing buildings that are certified by Earth Advantage or by the U.S. Green Building Council at the Silver level, or above. The city estimates its incentive will provide between \$0.50 and \$1.00 per square foot for certified buildings. For a 60,000 square foot building, developers would receive between \$30,000 and \$60,000.

Oregon’s Business Energy Tax Credits Program (BETC) offers incentives based on a building’s LEED certification level. For example, if a 60,000 square foot building achieved LEED Silver certification for new construction, the owner would be eligible to receive \$420,000 in incentives from Oregon’s BETC program, and would still be eligible for incentives from other sources. For instance, during 2008-2009 Community Partners for Affordable Housing received \$800,000 in green incentives from a variety of city, regional, state and federal incentive programs for their work on the Watershed at Hillsdale, a senior affordable housing

project. Those incentives paid for all of that project's hard and soft green design and development costs.

The State of Oregon and the U.S. Federal Government offer an array of grants, cash and tax incentives to promote energy efficiency and renewable energy. Incentives are provided for purchasing Energy Star appliances, achieving energy efficiency that exceeds code requirements, and installing highly efficient equipment and lighting.

- C. Indoor Environmental Quality.** Frequent fresh air exchanges and other ventilation factors are vital to protecting tenant health, especially in living spaces that allow tobacco smoking, which compounds and exacerbates the impact of other indoor pollutants. The American Lung Association warns that the most vulnerable populations include children under 18 and adults over 65 years of age; individuals with chronic lung disease, such as asthma, chronic bronchitis, or emphysema; cardiovascular disease, such as high blood pressure, coronary artery disease, congestive heart failure; and diabetes.⁵

To protect the health of vulnerable populations and other building occupants, **At a minimum, projects must,**

- 1. Install only composite wood products that do not contain synthetic urea formaldehyde. The wood products include hardwood plywood, particleboard, medium density medium density fiberboard and thin medium density fiberboard.**
- 2. Comply with the engineering standard, ASHRAE 62.2-2007, Ventilation for Acceptable Indoor Air Quality, a minimum ventilation standard to limit the chemical, physical, and biological indoor contaminants for buildings of three stories or less, OR ASHRAE 62.1-2007, Ventilation for Acceptable Air Quality for Low-rise Residential Buildings.**

All three of the green building certification systems identified above require compliance with ASHRAE 62.1 or 62.2.

Explanation: The Centers for Disease Control and Prevention reports that building ventilation is one of the top eight public health concerns in the United States, and the U.S. Environmental Protection Agency lists indoor air quality as one of its top five urgent environmental health concerns. Certain construction materials harm the quality of indoor air and may off-gas toxic volatile organic compounds for years.

Public investments in healthier building materials and fresh air ventilation will be more than offset off-set over time by the societal savings from a reduction in hospital and emergency room visits by families, many of whom lack health insurance. Prevention

⁵ American Lung Association, *Facts about Particle Pollution*, April 2008.

is less expensive than treatment. According to an article in the National Institutes of Health journal, *Environmental Health Perspectives*,⁶

By producing the science to identify and control hazards, by building the consensus to end the *false tradeoff between affordability and health*, by accurately describing the costs and hidden benefits, by implementing primary prevention in the indoor environment . . . [governments] can systematically create living environments that will not harm, but actively promote the well-being of their citizens. (Italics added.)

D. Energy Efficiency. To reduce energy use, carbon dioxide emissions, and residential energy costs, **At a minimum, projects must attain the following,**

- 1. An energy efficiency level that is higher than the current adopted version of the State Building Code. For Townhomes, Duplexes, Triplexes, Rowhouses, and buildings that are below 60,000 square feet, the required level of energy efficiency is identified in the applicable green building certification program.**
- 2. For projects that are 60,000 square feet or more in size, projects must earn at least five Energy and Atmosphere points in the U.S. Green Building Council's LEED rating system; which for new construction is 28 percent more efficient than ASHRAE 90.1-2007, and for major renovations is 24 percent more efficient than ASHRAE 90.1-2007.**

Explanation: As energy rates and costs continue increasing, the dividends of energy efficiency investments will also increase. The most cost-effective energy efficiency investments are generally in building orientation, a tight building envelope and energy efficient lighting. These and other energy efficiency technologies typically have a short return on investment of one to five years.

E. Monitoring. The development and implementation of the third-party standards required in Section B., and the compliance assurance stipulated in those systems will be monitored by the Bureau of Housing, consistent with other housing program monitoring processes, and will be incorporated into regulatory agreements that assure accountability.

F. Reporting Requirements. Recipients of financial assistance must submit to the Bureau of Housing, environmental performance data for their projects, as stipulated by the Bureau. These data include, at a minimum, the reductions achieved in energy and water use, stormwater diverted, construction waste diverted from the landfill, and the volatile organic compound content of interior building materials. For five years after occupancy of the building, the owner shall provide to the Bureau data that verifies the actually annual energy and water use performance. These data will provide useful information to the city and other developers regarding the most effective, inexpensive and efficient choices in green building design.

⁶Jacobs, David E., et al, "Linking Public Health, Housing, and Indoor Environmental Policy: Successes and Challenges at Local and Federal Agencies in the United States," Vol. 115, No. 6, June 2007.

G. Phase-In Period. The final Green & Healthy Affordable Housing policy will be sent to the Portland City Council for approval. If approved, it will be submitted to PDC's Board of Commissioners for approval, after which a Policy phase-in period will commence and the Policy requirements will be implemented on a voluntary basis. For projects less than 60,000 gross square feet in size these requirements will become mandatory on July 1, 2010. For projects equal to or greater than 60,000 gross square feet, the voluntary phase-in period will end on July 1, 2011. Until the implementation of this Policy commences, the *Greening Portland's Affordable Housing* guidelines will remain in effect.

Appendix I

Business Case for Green Affordable Housing

Since 2001, the City of Portland and the Portland Development Commission have used the *Greening Portland's Affordable Housing* guidelines as a tool for making affordable housing healthier and more sustainable. Since that time, industry standards and the region's collective green building knowledge and development expertise have broadened and deepened. Today, green building materials are far easier to find and some are relatively inexpensive, bringing green building development within reach for all developers.

Financial Incentives

The Bureau of Planning and Sustainability's draft High Performance Green Building Policy proposes to provide affordable housing with a special financial incentive for buildings that are certified by Earth Advantage or by the U.S. Green Building Council at the Silver level. That bureau estimates the city's incentive will be between \$0.50 and \$1.00 per square foot, which added to the incentives already available, will

Oregon's Business Energy Tax Credits Program (BETC) offers incentives based on a building's LEED certification level. For example, if a 60,000 square foot building achieved LEED Silver certification for new construction, the owner would be eligible to receive \$420,000 in incentives from Oregon's BETC program, and would still be eligible for incentives from other sources. For instance, during 2008-2009 Community Partners for Affordable Housing received \$800,000 in green incentives from a variety of city, regional, state and federal incentive programs for their work on Watershed at Hillsdale, a senior affordable housing project, which more than covered that project's hard and soft green development costs.

The State of Oregon and the U.S. Federal Government offer an array of grants, cash and tax incentives to promote energy efficiency and renewable energy. Incentives are given for purchasing Energy Star appliances, achieving energy efficiency that exceeds the code requirements, and installing highly efficient equipment and lighting.

True Cost of Green

It is now known that one common view about the cost of building green does not align with reality. A 2007 study on this question by the *World Council for Sustainable Development* found that the worldwide perception of the average cost of certified green buildings is 17 percent, but in reality the average green premium is 0-5 percent and falling.⁷

The U.S. Government Accountability Office concludes that, "Green building practices tend to increase up-front construction costs but typically provide long-term benefits that offset these increases."⁸

⁷ *Energy Efficiency in buildings: Business realities and opportunities*, Summary Report, August 21, 2007.

⁸ *Ibid*, GAO.

Increased Valuation

The business case for constructing more sustainable buildings continues to strengthen as green buildings achieve deeper commercial market penetration; data-based analysis now demonstrates actual building performance and the market response. Though additional data are needed to verify similar benefits in the residential sector, the market demand for green residential buildings is growing, as shown by the inclusion of this selection criterion in the Regional Multiple Listing Service.

According to *Green Value*, an independent research study that looked at green buildings in Canada, the USA and the UK, green building often increases asset value by being quicker to secure tenants and command higher rents, reducing turnover, lowering operating costs, attracting subsidies and grants and increasing tenant comfort.⁹

The Market

Some insurance companies, such as Fireman's Insurance Fund out of California, provide up to five percent discounts on LEED certified buildings, due to its calculation that such buildings represent a lower risk. High quality design and construction, and attention to tenant comfort can also reduce investor risk for because tenants are more likely to take care of comfortable and appealing living or working spaces.

A growing number of studies are showing that green buildings are a good investment. That is why the world's commercial largest real estate firm, CBRE, and corporations that include Citigroup, Goldman Sachs, Kennedy Associates and others, which collectively account for billions of square feet in commercial property globally, are investing billions of dollars to upgrade their holdings to meet green building standards. These actions are not due to altruism, but to prevent their buildings from become obsolete in a market that now recognizes the value of high performance buildings. Universities and governments are also following this lead so as to maintain their asset value.

Energy Efficiency and Durability Benefits

Given continuously rising energy prices and the demonstrated consequences of climate change, a strong case can be made for investing in greater building energy efficiency. *The immediate benefit to community development corporations and for-profit developers is lower net operating expenses due to the lower energy and maintenance costs.*

A number of studies report that the average LEED Silver building is 25-30 percent more energy efficient than its non-LEED counterpart. According to the National Buildings Institute's March 4, 2008 report, *Energy Performance of LEED® for New Construction Buildings*,

"On average, LEED buildings are delivering anticipated savings. The three views of building performance consistently show average LEED building energy use 25–30% better than national average, a level similar to that anticipated by LEED modeling.

⁹ <http://www.rics.org/NR/rdonlyres/D0090E2A-86A1-40F6-B3B0-97D298B14F56/0/GreenValueAtGreenBuild2005.pdf>

Average savings increase as performance goals increase with higher LEED certification levels. Gold and platinum buildings average [energy use intensities] are 45% better than non-LEED buildings. This approaches the interim goals of Architecture 2030.” (Page 31)

Developing green buildings at a reasonable cost is in part dependent on the extent of the integrated design process used by the developer and the design team. For instance, an integrated design approach will promote the installation of right-sized, less expensive heating and cooling systems due to factors such as proper building orientation, appropriate window selection for the north, south, east and west building faces, tighter envelope and other factors that affect the demands on the HVAC system.

Over 90 percent of a building’s lifecycle costs are in operations and maintenance, thus smaller and more efficient HVAC systems, simpler design and the use of durable materials and construction techniques lower ongoing and lifecycle costs. Constructing durable buildings can reduce the risk of expensive loan restructuring and unbudgeted investments that are necessary when a building prematurely degrades.

Healthier Indoor Air

Today, the average person spends more than 90 percent of their time indoors; hence, indoor environmental quality has a significant impact on public health. In terms of building materials, volatile organic compounds, formaldehyde and plasticizers that off-gas from polyvinyl chloride (PVC) are generally viewed as the greatest and most avoidable threats. The National Institutes of Health journal, *Environmental Health Perspectives*, acknowledged,

The weight of evidence suggests that indoor environmental contaminants pose significant public health risks, particularly among children and the poor, and the societal costs of illnesses related to indoor environments are considerable.¹⁰

With regard to the health hazards this article also warned,

Chemical hazards include environmental tobacco smoke, nitrogen and sulfur oxides, ozone, particulate matter, volatile organic compounds, pesticides, [urea] formaldehyde, and plasticizers. Exposures to these agents are influenced by chemicals used in building materials, furniture, and other household items.

The Center for Disease Control and Prevention reports that two of the top eight public health factors are *ventilation and building maintenance*. Numerous studies show that providing fresh air ventilation in housing units reduces the incidence of respiratory and other diseases, and trips to the hospital or emergency room.

For example, in 2007 the Seattle Housing Authority’s HOPE VI *High Point Breathe Easy* experiment recorded a 30 percent drop in asthmatic symptoms and hospital visits for 35 families, after fresh air ventilation was installed in their affordable housing units. The pain,

¹⁰Wu, Felicia, et al, “Improving Indoor Environmental Quality for Public Health: Impediments and Policy Recommendations,” Vol. 115, No. 6, June 2007.

duress and expense of respiratory and related illnesses were significantly diminished by the continuous introduction of fresh air.¹¹

In the *The Price of Pollution: Cost Estimates of Environmentally Related Disease in Oregon* study (Oregon Environmental Council, 2008), researchers estimated that Oregon spends about \$1.57 billion annually on health care related to diseases associated with environmental exposures. This study examined just six health outcomes: asthma, cancer, lead exposure, birth defects, and neurobehavioral disorders. Childhood diseases account for the largest proportion of those costs, about \$1.1 billion. These diseases are all linked to the toxic chemicals found in certain building materials that off-gas and in other ways leach toxic chemicals, and to tobacco smoke and a lack of fresh air ventilation.

EPA studies indicate that indoor air pollution may be two to five times higher—and occasionally more than 100 times higher—than outdoor levels. As a result, the EPA has identified indoor air pollution as one of the top five urgent environmental risks to public health. Exposure to indoor air pollutants—such as smoke, dust, pet dander, radon, mold and other pollutants—can pose serious health risks and contribute to respiratory disease, asthma and lung cancer. The good news is that steps can be taken to significantly reduce, and even eliminate, many causes of indoor air pollution.

High Quality Construction

One example of how quality construction can reduce initial costs was highlighted in a March 2008 article, *Labor and Resource-Efficient Construction Techniques Allow You to Stay in the Black While Going Green*, which appeared in a paper in HUD's Partnership for Advancing Technology in Housing journal.

Citing advanced framing research, the report stated that using 19.2 or 24-inch on-center framing, rather than conventional framing, not only saves wood and takes less time to install, but also leaves more room for insulation, reduces the number of thermal breaks, produces a tighter envelope and improved energy efficiency. In a two-story, 1,100 square foot residence, this approach reduced the studs needed by 35, saving about \$500. There was also an estimated three to five percent savings in the framing labor costs. This is just one example of short-term savings from sustainable design.

Conclusion

The business case for constructing high performing buildings with healthier indoor air is compelling and demonstrates the higher value and lower operating expenses produced in comparison to traditionally built structures. Both nonprofits and government bureaus responsible for making investment decisions in affordable housing projects should incorporate these considerations into their budget development and project approval process.

See also the 2007 paper, *A Green Building Primer and the Business Case for Constructing LEED Certified Building* (PDC).

<http://www.pdc.us/pdf/sustainability/2007-business-case-to-building-green.pdf>

¹¹ See <http://www.seattlehousing.org/redevelopment/high-point/>

Appendix II

FUNDING RECOMMENDATION ONE

Indoor Air Quality

To support this Policy's Indoor Air Quality requirement and advance the goal of social equity and family healthy, up to four percent of the appropriate project costs should be provided to help defray the higher costs of assuring adequate indoor air quality. The level of funding should be commensurate with verified incremental costs and based upon the recommendation of the project manager.

FUNDING RECOMMENDATION TWO

Green Building Certification

Where funding and incentives are not elsewhere available, the city should fund a percentage of the incremental soft costs directly related to third-party certification. Soft costs are defined as registration and certification fees, green building consulting, and basic building commissioning. For those costs not funded by another incentive program, a cost-sharing program should be instituted in which the city **contributes 40 percent of the incremental soft costs**—and the developer contributes the remaining 60 percent.

FUNDING RECOMMENDATION THREE

Energy Modeling

Energy modeling is a relatively inexpensive upfront investment that can produce a quick return in terms of reducing building operating costs. Through modeling, a developer can identify the most efficient and least costly design to achieve a given level of energy efficiency. Where funding is not elsewhere available, the city should **fund up to 70 percent of the energy model** used by developers. For \$5,000-\$10,000, the cost of a basic energy model, developers can assess the lifecycle cost savings that often justify specific investments because of the reduced operating costs.

Bridge Loans

Bridge loans would assist developers to close project funding gaps since the financial incentives offered by the Oregon Department of Energy's Residential Energy Tax Credits (RETC) or Business Energy Tax Credits (BETC) cannot be accessed until after project completion. Bridge loans would balance the pro forma and would be paid back after occupancy when the developer receives the state incentives.

The city offers eighteen month bridge loans of up to \$100,000 to provide gap funding. This option should explicitly be offered to developers as a means to access financial incentives. Due to administrative and other transaction costs, some developers choose not to access PDC bridge loans. To make this process simpler, the city should **convene a task force** to develop detailed recommendations for streamlining bridge loan applications, transactions, reporting and other business processes, which will save the city and developers both time and money.

Appendix III**Green & Healthy Affordable Housing Coalition****Affordable Housing Developers**

Ben Gates	Central City Concern
Sheila Greenlaw-Fink	Community Partners for Affordable Housing
Jeffrey Jewel	Human Solutions
Craig Kelley	Housing Development Center
Catherine Kes	Hacienda
Ed McNamara	Turtle Island Development, LLC
Melissa Peterson	Enterprise Community Partners
Riad Sahli	REACH
Reed Sweeney	Enterprise Community Partners
Jonathan Trutt	Northwest Housing Alternatives

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Cindy Bethell	Portland Development Commission
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Bob Gillespie	Oregon Housing and Community Services
Beth Kaye	Bureau of Housing and Community Development
Julie Livingston	Housing Authority of Portland
Kim McCarty	Portland Development Commission
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