BetterBuiltNW

NORTHWEST ENERGY EFFICIENCY ALLIANCE

Guide to Certification Program and Local Government Partnerships

Prepared by TRC Energy Services, on behalf of the Northwest Energy Efficiency Alliance (NEEA)
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Contents

Executive Summary

On behalf of the Northwest Energy Efficiency Alliance (NEEA), TRC Energy Services (TRC) researched opportunities to accelerate adoption of energy efficiency in the Northwest's new homes sector. TRC research efforts provided NEEA with an understanding of the available programs via a *Program Map* and actionable recommendations for program coordination via a *Program Enhancement Plan.* Through these two documents, TRC identified strong potential for partnerships between home certification programs and local governments to serve as mechanisms to accelerate energy efficient building practices.

This *Best Practices Guide: Certification Program-Local Government Partnerships* examines the role of partnerships between local government and green building programs and the use of incentives as tools to stimulate green building and energy efficiency. This guide also lays out a step-by-step method that local governments and home certification programs can use to establish collaborative partnerships. The Best Practices Guide includes three chapters:

- In Chapter 1 of this report, TRC presents a Nationwide Partnership Database and identifies existing models and trends in home certification programs-local government partnerships and incentive mechanisms used by the partnerships to stimulate the market. TRC examines 104 US local governments—each of which has collaborated with home certification programs to offer more than 190 incentive options to promote energy efficient buildings.
- In Chapter 2 of this report, TRC presents three in-depth case studies of successful partnerships between programs and local governments, identifying how the partnerships were established as well as partnership benefits and lessons learned. The case studies include:
    - Case Study 1. Financial Incentive: Passive House and Pennsylvania Housing Finance Agency, PA.
    - Case Study 2. Bonus Density Incentive: Earth Advantage and City of Ashland, OR.
    - Case Study 3. Expedited Permitting Incentive: Built Green Program and City of Seattle, King County, WA.
- In Chapter 3 of this report, TRC lays out a step-by-step process for local governments and home certification programs to identify and establish successful partnerships. TRC developed the process based on a review of available examples of successful partnerships and incentive structures in various parts of the US, including analysis of data and information collected through literature reviews, case studies, and interviews with relevant stakeholders. Below is a diagram of the proposed step-by-step process, also shown in full size on Page 30.

Nationwide Partnerships

On behalf of the Northwest Energy Efficiency Alliance (NEEA), TRC Energy Services (TRC) conducted research on northwest home certification programs with a goal to identify tools and partnership models for increasing the adoption of energy efficient practices in the residential sector.

There is a large and diverse number of home certification programs available in the marketplace, and programs often deliver their offerings in close collaboration with other entities such as local governments, utilities, non-profits, and private sector companies. While this guide focuses on partnerships between local governments and home certification programs only, Appendix B of this guide outlines a more comprehensive list of partnerships that TRC developed during the research process.

The following chapter presents a summary of identified models and trends of successful partnerships and the types of incentive mechanisms used by the partnerships to stimulate the market. From these findings, TRC identifies strategies that governments and programs can apply to establish successful home certification partnerships that:

- Contribute to shared energy efficiency, environment, and climate resiliency goals
- Combine resources and efforts to optimize planning, engagement, and impact
- Catalyze local private sector support for green building and drive market acceleration

SCOPE OF NATIONWIDE BEST PRACTICES RESEARCH

To inform the Best Practices Guide, TRC examined 104 US local governments and their partnerships with a range of certification programs. In total, the partnerships incorporated more than 190 incentive options to promote energy efficient practices. (Refer to Appendix B for the comprehensive list).

Our research approach focuses on the following partnership types.

- **Local US government partnerships** – Our focus is limited to local government partnerships (e.g., cities, counties, districts, municipal utilities, etc.), although a variety of other entities (e.g., state agencies, investor-owned utilities, etc.) could also consider and apply these practices to their partnerships.
- **Representative sample of partnerships** – Our focus is to examine a fair, representative sample of partnerships from which to draw findings and recommendations. To do so, we: 1) developed a high-level database for 104 local governments informed by TRC research and a Columbia Law School research project1, and 2) conducted 8 in-depth interviews with local governments, home certification programs, and market stakeholders (Appendix C). The result was strong diversity in partnership scope, region, building sectors, incentive structures, and building standards.
- **Partnerships incorporating incentives** – Our focus is to examine partnerships that leverage some form of incentive (development, financial, or other incentives) from local governments, which has consistently proven to be a strong driver for home certification program participation.

[1] Jessica Wentz (2010). *Summary of Findings in Local Green Building Incentives Spreadsheet*. Center for Climate Change Law. Columbia Law School.

EXISTING NATIONWIDE PARTNERSHIPS

Home certification programs and local governments share many interests when it comes to private development and green building—from better resource management to improved indoor air quality, lower building operating costs, reduced infrastructure strain, job creation, and local economic development.

Local governments are also taking an increasingly active role in shaping and driving the next generation of community-based sustainability initiatives. For example, nearly 130 U.S. cities have committed to the sustainability-oriented Compact of Mayors[2] (formed by Michael Bloomberg, C40 Cities, and ICLEI, among others) and its series of climate action and reporting requirements. And many more local governments nationwide, including hundreds in California alone, are adopting their own climate change action plans and initiatives[3].

To actualize these goals, and do so efficiently, certification programs and local governments are forming partnerships and best practices for working together. The design of each partnership is closely aligned with the particular jurisdiction and addresses local factors such as:

- Climate, sustainability, energy objectives
- Current and projected economic outlook
- Development activity and building stock
- Scope of desired program
- Budget, resources, stakeholders
- Realm of prospective partners

TRC examined a representative sample of certification program-local government partnerships across 104 US local governments. In combination, these partnerships offer over 190 incentives as show on a state basis in Figure 1. The 190 incentive options evaluated apply to a wide variety of building types, and 87% include applications for residential buildings.

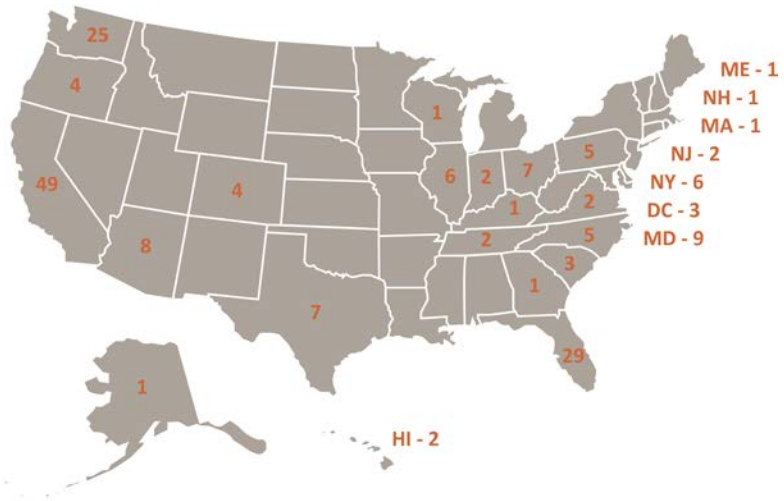

Figure 1: Number of Green Building Incentives Examined, By State

[2] https://www.compactofmayors.org/cities/
[3] https://www.opr.ca.gov/docs/2016_California_Jurisdictions_Addressing_Climate_Change_Summary.pdf

TYPES OF LOCAL GOVERNMENT INCENTIVES

Complementary needs and capabilities make certification programs and local governments excellent partners. While independent certification programs offer robust technical standards and certification infrastructure, the programs are not resourced to fully incentivize market participation. In contrast, local governments often have the capacity to provide some level of incentives for green and energy efficient building, but rely on certification programs for the deep technical expertise and processes necessary to facilitate credentials.

Governments can choose the appropriate incentive(s) from many options available in the marketplace, including financial and non-financial benefits. Because local government funding for financial incentives is typically limited, it becomes critical to consider all incentive options (and combinations thereof) and carefully prioritize the scope and scale of any financial investment. The certification program-local government partnerships TRC analyzed leveraged eight key incentive structures[4] (Figure 2) to deliver the total 190+ incentive options.

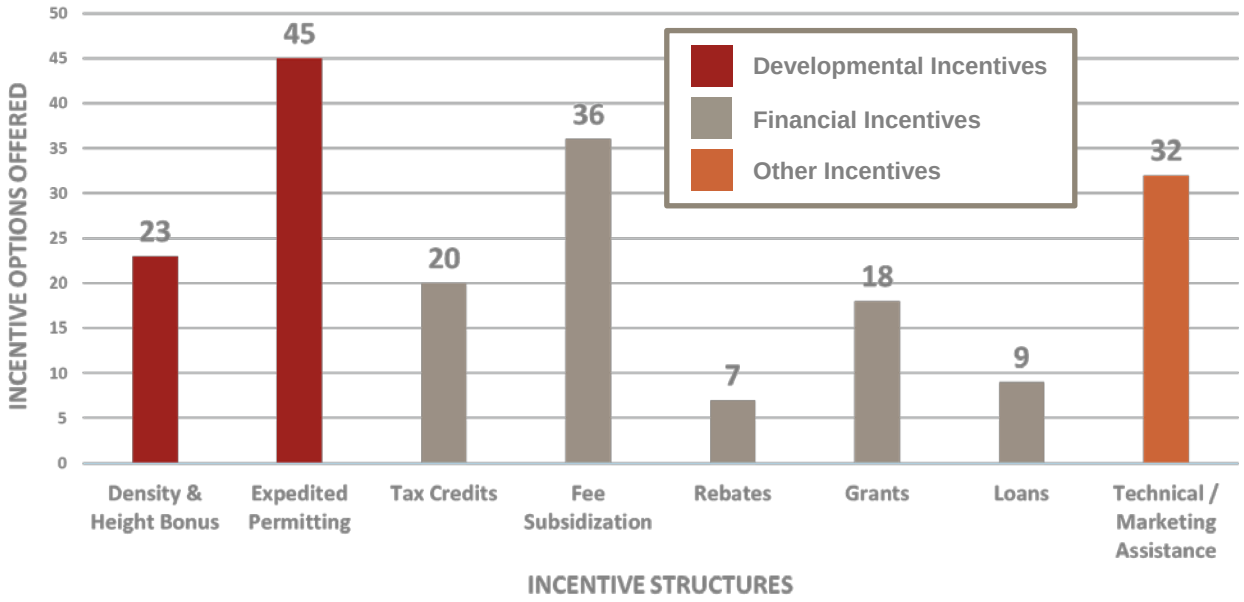

Figure 2: Number of Incentives Offered Through Partnerships, By Incentive Type

TRC classifies the types of available incentives in three major categories as described below.

1.1.1 Developmental Incentives

Developmental incentives are those that provide building developers an advantage to their development timeline and/or value if they leverage green building practices. Following are examples of developmental incentives.

[4] http://www.usgbc.org/articles/good-know-green-building-incentive-strategies-0

1.1.1.1 Density & Height Bonuses

Local governments can offer land zoning allowances so developers can build more housing units, taller buildings, or more floor space (higher floor-area-ratio or FAR) than typically allowed, in exchange for builder adoption of green building practices.

Advantage: Additional developmental allowances directly increases owner, developer, and builder profits and can translate into incentives for the buyer. This option is highly attractive to developers, especially in jurisdictions that have capacity shortfalls. Further, this approach requires little to no financial investment by local governments. Local governments can also benefit from increased revenue from the increased development and residents within their jurisdictions.

Challenge: Local governments must design and pass new bonus allowances to zoning policy wherein the sustainability benefits from a green building must typically outweigh the climate and energy impacts of the additional space. Local governments must also be prepared to offer additional infrastructure and public services to adequately serve the high-density developments.

Sample Partnership: The County of Arlington, Virginia[5] offers height and density bonuses for new Leadership in Energy and Environmental Design-certified (LEED) residential and commercial office development projects. Projects earn greater bonuses for each LEED status achieved, starting at LEED Silver, and additional certifications including Arlington priority credits and Net Zero Energy Building certification. Office projects must also agree to earn ENERGY STAR® building certification within four years. Affordable housing projects may alternately earn bonuses using the Earthcraft green building rating system (Gold+). The County's bonus is offered in conjunction with an additional technical assistance incentive.

1.1.1.2 Expedited Permitting

Local governments can expedite review and permitting processes for developers and projects which incorporate green building practices.

Advantage: Depending on the jurisdiction, permitting can be a lengthy process (e.g., up to 6 months), so reducing the duration of this process provides developers and builders with significant cost savings. Further, this approach is little to no-cost for the local government and can be incorporated within existing business practices within the permitting department.

Challenge: Minimal effort from local government is necessary to restructure existing permitting processes and provide building permitting officials the needed training and education to verify green building requirements in projects. Local governments might also need additional staff to continue to ensure the "expedited" nature of green permitting as the participation in this incentive increases over time.

Sample Partnership: The City of Seattle, Washington[6] offers two tiers of accelerated permitting for green building projects, including:

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[5] https://environment.arlingtonva.us/energy/green-building/green-building-bonus-density-program/
[6] http://www.seattle.gov/dpd/permits/greenbuildingincentives/

- Priority Green Expedited: Available for all new construction projects with expedited building permit review and processing—typically shortening initial review of construction permits by 2-4 weeks. Projects must achieve: 1) Built Green 4-star+, LEED Gold+, Living Building Challenge Petal or Net Zero Energy, OR Passive House Institute US+2015, and 2) Seattle Priority Green requirements for energy and water conservation, waste reduction, stormwater management, and indoor air quality.
- Priority Green Facilitated: Available for innovative projects with priority review and processing for master use permits—typically shortening the permit process by up to 25% (e.g., 60 days). Projects must achieve 10+ points on Seattle Priority Green Facilitated Building Matrix, Living Building Challenge, Seattle 2030 District Architecture Challenge for Planning, LEED Platinum, OR Built Green 5-star.

The City's expedited permitting is offered in conjunction with additional technical assistance and product rebate incentives.

1.1.2 Financial Incentives

Financial incentives offer an economic reward to developers for adopting green building practices. These incentives can include tax credits, loans, grants, rebates, and other forms.

1.1.2.1 Tax Credits or Abatements

Local governments can approve a number of tax abatements or tax credits (e.g., income tax, property tax/ad valorem tax, or local tax) for approved green performance measures. Abatements work by exempting property owners from paying taxes for a period of time. Credits work by crediting specific tax liabilities back to owners of these properties. Some federal tax credits are also available to offset additional costs associated with building green. The Energy Policy Act of 2005 (Public Law 109-58) created a new tax incentive for constructing energy efficient commercial buildings. Specifically, Section 1331, the Commercial Building Tax Deduction[7], establishes a tax deduction for expenses related to the design and installation of energy efficient commercial building systems.

Advantage: Tax credits/abatements are very attractive to building owners and developers and can help offset any real or perceived premiums for green building. These are also attractive to governments as they are flexible options that local governments can allocate to any tax jurisdiction according to their policy agendas. Further, the potential increase in assessed property value due to green building practices can often provide a long-term tax gain for the jurisdiction.

Challenge: Local governments must design and pass tax exemption allowances to tax policy. Tax credits can also negatively impact revenue for local governments and need to be carefully designed and evaluated within the context of the jurisdiction's overall economic plans.

Sample Partnership: The County of Baltimore, Maryland[8] offers a property tax credit for new construction and retrofit residential and commercial projects. The tax credit runs with the property regardless of ownership. The tax

[7] http://www.efficientbuildings.org/about_the_provision.html

[8] http://www.baltimorecountymd.gov/Agencies/budfin/customerservice/taxpayerservices/taxcredits/performancehomes.html

credit is provided on a percentage basis depending on the level of green building credentials achieved. Residential projects must achieve 1) LEED Silver+, 2) NGBS Silver+, OR 3) 30% efficiency increase as certified by a HERS professional or passive house consultant. Commercial projects must achieve: 1) LEED-NC/CS/EB Silver+, OR 2) NGBS Silver+.

1.1.2.2 Grants & Fee Subsidization

Local governments can also offer financial incentives in the form of: a) Grants, which may cover the cost of certifications or are awarded in a single, monetary contribution towards the total cost of the development, and b) Fee subsidies, which are waivers or reductions to normally incurred fees – e.g., Impact Fees, Certification Fees etc.

Advantage: Grants and fee subsidies help offset the real or perceived green premium for developers/builders. *Challenge:* Local governments must design the grant/subsidy, secure capital, and receive approval or pass policy. Grants and fee subsidies can also have a negative impact on a local government's revenue stream and jurisdictions can find it challenging to offer these incentives on a long-term basis.

Sample Partnership: The Town of Babylon, New York[9] offers refunds for LEED certification fees regarding new construction projects. Applicable projects include commercial, office, industrial, and multifamily projects over 4,000 square feet.

1.1.2.3 Loans

Local governments can establish green loan funds to be used specifically for green developments or improvements. Loans often include a) low-interest options, b) repayment at a rate lower than operational cost savings, and c) a revolving fund structure wherein new loans are issued as the fund is replenished via borrower repayment.

Advantage: Local government loans overcome a major green building barrier: up-front project costs. Loans also enable developers/buildings to access better financing terms than are typically available via private lending. Plus, revolving loan structures offer ongoing community-wide benefits.

Challenge: Local governments must design loan program, secure capital, and receive approval.

Sample Partnership: The City of San Francisco, California[10] offers Property Assessed Clean Energy (PACE) financing for commercial and residential energy and water efficiency projects. The financing runs with the property regardless of ownership. Financing can cover 100% of projects cost with repayment spread over decades. Projects might include HVAC systems, building shell, solar water heaters, photovoltaic solar, among others.

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http://www.baltimorecountymd.gov/Agencies/budfin/customerservice/taxpayerservices/taxcredits/performancebuildings.html

[9] http://www.usgbc.org/Docs/Archive/General/Docs2164.pdf

[10] http://sfenvironment.org/article/financing/greenfinancesf-commercial-pace-program

1.1.2.4 Rebates & Discounts

Often, manufacturers of energy efficient and environmental products can offer rebates and discounts to preferred customers who have bulk-purchasing power. Local governments can purchase energy efficient and environmentally friendly products at bulk purchasing prices and pass on the savings to citizens who buy these items from the local government. They can also offer other financing assistance or rebates for preferred products.

Advantage: Rebates and discounts help offset the cost of green building measures for developers/builders.

Challenge: Local governments need to allocate staff and resources to identify and leverage rebates and discounts.

Sample Partnership: The City of Sunset Valley, Texas[11] offers a solar water heater rebate to local homeowners, which supplements an additional rebate provided through municipal utility Austin Energy. Sunset Valley's program is offered at 30% of the system cost purchase and installation up to $2000.

1.1.3 Other Incentives

Other incentives empower developers in overcoming barriers to and validating action taken towards green building practices. This might include:

1.1.3.1 Technical Assistance

Local governments can integrate technical education and assistance—around green building design and green certifications—as a key component of its incentive options. This assistance can be made available to private sector stakeholders as well as government planners, building inspectors, and other local officials who interface with building owners/developers and green building program staff.

Advantage: Local governments can leverage a program's established brand and market presence to encourage citizens to a help local parties overcome knowledge barriers while earning revenue for consulting support. Fostering a culture of sustainable design throughout the community can be even more effective than formal policy.

Challenge: Modest effort from the local government is necessary to facilitate and/or provide experts for technical assistance.

Sample Partnership: The City of Scottsdale, Arizona[12] offers technical assistance to help their Green Building Program participants apply elements of the Program to local residential projects. The City also offers a monthly green building lecture series featuring national and local building experts.

1.1.3.2 Marketing Assistance

Local governments can offer free marketing assistance and outreach for developers/builders to help them sell or rent green building developments. Promotional tactics include awards, press, websites and publications, and

[11] http://www.sunsetvalley.org/index.asp?Type=B_BASIC&SEC=%7B01DB9430-9349-4D76-B751-A29D675AF038%7D
[12] http://www.scottsdaleaz.gov/green-building-program/incentives

other methods. Local governments could also help Programs develop their brand through design and development of marketing collateral such as logos, tag lines, sales brochures, banners and other sales materials for use by builders.

Advantage: Developers and builders can better capitalize on the marketability of their developments, while local governments assist in cultivating community sustainability awareness.

Challenge: Modest effort from the local government is necessary to facilitate and/or provide experts for assistance.

Sample Partnership: The County of Sarasota, Florida[13] offers marketing assistance for commercial new construction and residential new construction or retrofit projects. Marketing can include "Green Building Awards," signage and website coverage, press releases, and other promotional efforts. Projects must be LEED- or Florida Green Building Coalition-certified. The County's marketing assistance is offered in conjunction with additional expedited permitting and fee subsidization incentives.

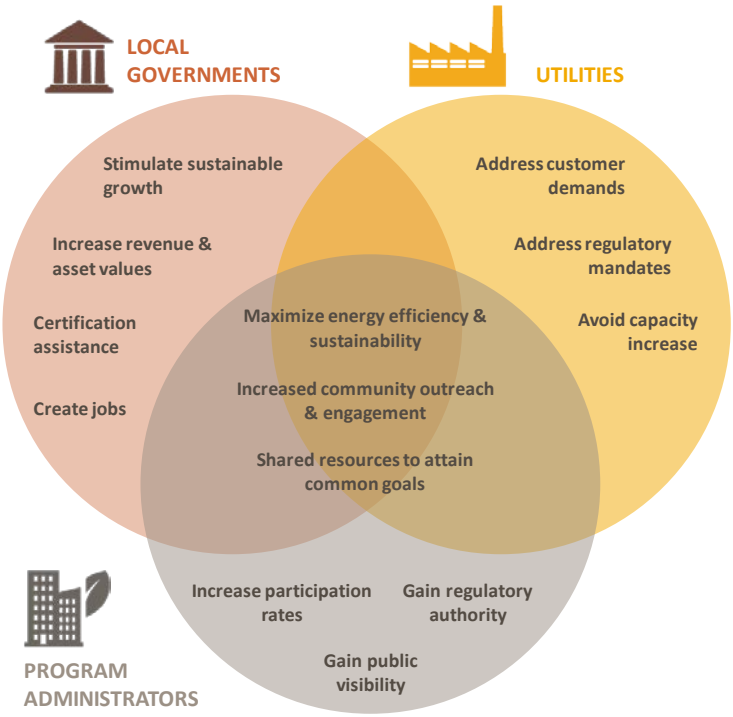
BENEFITS OF PARTNERSHIPS

1.1.4 Benefits for Local Governments

Local governments are committed to the interests of their communities, including safety, health, and prosperity of residents and businesses. Further, local governments now have a variety of compelling factors such as: a) climate action, sustainability, or urban development plans, b) mayoral or local leadership "green community" commitments, c) aggressive building codes and requirements, d) municipal utility energy efficiency targets, among others. For these and other reasons, green building is often of great interest to and a priority for jurictions, and program partnerships can directly contribute to these local objectives:

[13] https://www.scgov.net/Sustainability/County%20Does/Green%20Building%20Resolution%202005-048.pdf

- **Certification assistance, experts, and tools**, through independent green building programs. Certification programs offer a turnkey system and recognized standard for quantifying building performance and facilitating project certification. Local governments can rely on the technical depth, experience, and credibility that programs provide as a framework for local green building efforts.
- **Acceleration of jurisdiction-specific sustainability goals**, by designing partnerships and incentives structures that align with particular features or areas of greatest interest to the jurisdiction (e.g., HVAC, solar PV, water systems, etc.) and as fits local development activity and budgets. Further, certain incentives or combinations thereof can be offered by local governments with little or no cost impact to their budgets.



- **Increased property or asset value** (average of 7%)[14], with correlation to greater demand and higher prices around sales, re-sales, and rentals[15]. Not only is this good for local builders/developers (shown above), but higher property values also generate greater property tax revenue for local government.
- **Job creation**, including numerous and diverse green building professions/trades**.** Between 2015 and 2018, the national green construction industry is predicted to provide a total benefit of 3.9 million jobs and $268.4 billion in labor earnings[16] nationwide. Further, local job growth also translates into increased individual and corporate income tax.
- **Attraction and retention of businesses and residents**, who are committed to investing in green buildings or sustainability-oriented communities. There has been tremendous growth in the awareness and demand for lease and ownership for green buildings, and this growth in clients and market demand have become dominant forces in the growth of green building.[17] Developers are responding to this increased demand, with nearly half of surveyed US green building industry respondents indicating that more than 30% of their projects are green and 58% reporting that they will be building green at that level by 2018.[18]
- **Contribution to infrastructure resilience**, including helping to mitigate climate impact risks. Standard building practices use and waste massive amounts of resources and materials annually; improving these

[14] http://programs.construction.com/WorldGreenBuildingTrends2016?utm_campaign=insightlibrary&utm_medium=web&utm_content=worldgreen&utm_source=resources

[15] http://reep.oxfordjournals.org/content/early/2016/08/23/reep.rew009.full.pdf

[16] http://go.usgbc.org/2015-Green-Building-Economic-Impact-Study.html

[17] http://naturalleader.com/wp-content/uploads/2016/04/McGrawHillGBStudy.pdf

[18] http://programs.construction.com/WorldGreenBuildingTrends2016?utm_campaign=insightlibrary&utm_medium=web&utm_content=worldgreen&utm_source=resources

practices enables local government to help avert major infrastructure upgrades, reduce greenhouse gas emissions, and foster a sustainable community. Furthermore, green buildings are shown to be more durable and resilient in the face of weather emergencies or power-loss which can lead to reduced emergency services costs.

- **Assistance for residents and businesses to save money** with regard to energy and water bill, waste disposal, operations, and maintenance costs. From 2015 to 2018, the green construction market is expected to generate $2.4 billion in energy savings, $99.2 million in trash savings, $256.5 million in water, and $1.5 billion in maintenance cost savings.[19] And green building investments typically exceed any design or construction cost premiums within an appropriate payback period.
- **Support for a healthier community**, as research shows that green buildings and indoor environments can have health, productivity, overall well-being, and even business profitability benefits for occupants. Further, in an evaluation of General Services Administration[20] green buildings, occupants reported 27% higher satisfaction with their building environment than the national average.

1.1.5 Benefits for Program Administrators

The success of certification programs is largely defined by the scale at which they are able to drive green building progress. This includes a) administrative metrics like jurisdictions served; scale of certified building space and building criteria met by participants; and program approach innovation, as well as b) performance metrics like depth of resource and material conservation achieved by participants; program accessibility and engagement levels; and quality of expertise provided.

High program achievement in all of these areas has the potential to be greatly enhanced through partnership with jurisdictions. Local governments are in a unique position to offer key benefits that contribute to program administrator goals, including:

- **Accelerated program adoption** stems from developmental, financial, and other incentives**.** Providing special privileges and advantages to developers/builders in exchange for participation in certain certification programs is crucial for programs which do not have the funding to support such incentives directly. Further, it enables program administrators to share the burden of “program promotion” with the jurisdictions that will reap direct benefits (as detailed in Section 1.3.1) as their communities participate in the program.
- **Regulatory authority and public visibility** to enable certain incentives and influence community action. A number of compelling incentive options depend on legislative action and new policies, which the local governments are able to facilitate. The local governments also have a unique position of authority within the community to bring attention to green building, guide the local conversation, and lend credibility to promoted certification programs and practices.
- **Local data and insights**, to inform community engagement strategies. Local governments largely understand their community’s development activity, potential, needs, limitations, local stakeholders, and private funding. Further, jurisdictions maintain detailed building permit, census, tax assessor, tax credit, and other relevant data points. All of this information can be helpful to program administrators in identifying and engaging program participants.
- **Existing channels and public touchpoints** to serve as a framework for community participation. Local governments already work with developers/builders and other community members on a regular basis through established relationships and processes. By leveraging existing interactions (e.g., existing

[19] http://go.usgbc.org/2015-Green-Building-Economic-Impact-Study.html
[20] https://www.gsa.gov/graphics/pbs/Green_Building_Performance.pdf

marketing/outreach or building permitting approval) to encourage green building, program administrators can more cost-effectively drive program adoption.

BARRIERS TO PARTNERSHIPS

Local governments or certification program administrators may encounter barriers that need to be identified and overcome for successful partnership. Challenges commonly include:

- **Making case for local green building**, and in particular, addressing perceived high green premium or additional cost associated with green building practices. Local government and community leaders may need additional information or expert testimony on the economic and societal benefits of local green building to advocate certain programs, policies, and positions. This is particularly true in jurisdictions with politically unfriendly or disinterested leadership and/or severe budgetary or resource limitations.
- **Aligning stakeholders for lasting partnerships**. A comprehensive understanding of the divergent needs and capabilities of all parties must be identified so the benefits of participation can be attractive enough to entice each. Local governments and program administrators must be able to align goals, decision-makers, and resources in support of a mutually beneficial partnership. Further, in reaching local developers/builders/owners, the parties can face difficulties in creating incentives which speak to the range of priorities and are appropriate for the specific size of investment, terms of investment, ownership situation, etc.
- **Resource allocation**, from program administrators and local governments. Program administrators will need to be able to dedicate staff and tools to support jurisdictions, which is often easily attainable. More challenging is the local government's ability to align resources and time for:
    - Financial incentives (e.g., grants, loans, etc.)
    - New and revised processes (e.g., expedited permitting incentive)
    - Additional or reallocated staff (e.g., technical design assistance incentive)
    - Staff training (e.g., permitting/zoning staff and green rating systems utilized locally)
    - External partner cultivation (e.g., local developer green building case studies)

  Further, local governments are responsible for the cost-efficacy of their approach, ensuring not only feasibility but total value of the partnership and incentive design for the jurisdiction.

While these barriers are complex, they are far from insurmountable – as evidenced by the numerous successful certification program-local government partnerships across the US today. Below, a summary of partnership findings and recommendations offer solutions for overcoming these challenges.

SUMMARY OF FINDINGS

TRC's research has surfaced meaningful findings and lessons learned for consideration by certification programs and local governments interested in new and effective partnerships. Highlights include:

- **Identifiable trends in green building standards.** TRC identified 11 certification programs commonly used across the partnerships (and their 190 incentive options) to qualify projects for receipt of incentive benefits. As shown in Figure 3, these standards have varying degrees of market penetration across local government partnerships and incentives. The U.S. Green Building Council (USGBC) LEED program is clearly the leader in terms of adoption across diverse incentive options.

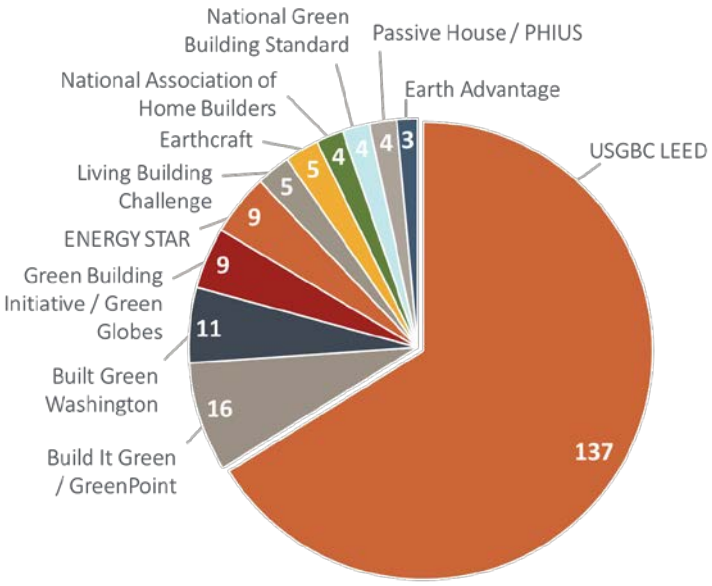


Figure 3: Number of Incentive Options Incorporating Green Building Standards

  - In addition to these certification programs, many local governments use other state or local standards or custom criteria to evaluate and incentivize projects. For example, 29 of the 190 incentive options in the database did not use any certification programs to allocate incentives, but rather chose to focus on incentivizing the adoption of specific technologies or green building practices not adequately represented by any of the programs.

- **Partnerships typically take 'broadest reach' approach.** Of the partnerships TRC analyzed, most sought to be broadly inclusive in terms of attracting and motivating participants. If jurisdictions invest time and resources to develop partnerships, it stands to reason that they would want to get the most 'green building value' for their investment. As examples:
  - The majority of partnerships leverage multiple types of incentives options to attract different participants based on builder/owner needs, interests, and budgets
  - 84% of analyzed partnerships accepted projects from more than one building sector (residential, commercial, industrial, affordable housing, etc.); many partnerships also accept both new construction and renovation building projects
  - The majority of analyzed partnerships, which use certification program standards (e.g., LEED, Built Green, etc.), accept more than one type of standard
- **Customization of partnership design.** Each jurisdiction benefits from designing and implementing partnerships which are optimum for local sustainability and economic development objectives and available resources. It is important to identify potential incentive levels, target green building standards, design implementation processes, allocate funding, and engage stakeholders and staff—all within the local context. As examples, factors for local governments to consider include:
  - *Building sector/stock or neighborhood eligibility* based on local development needs and market barriers. For example, jurisdictions might only provide density/height bonuses in high retail value markets such as downtown urban districts or design programs around specific building types (e.g., multifamily, schools, affordable housing etc.) or locations where the adoption of green building is lower than other parts of the jurisdiction.
  - *Tiers or combinations of incentives* to drive engagement and maximize partnership cost-effectiveness; for example, jurisdictions design incentive packages which combine low-cost incentives, like expedited permitting, with higher incentives, like tax credits.
  - *Type of incentives and building standards* which align most closely with local sustainability goals; for example, jurisdictions might incentivize high impact whole-building solutions or innovative solar/renewable projects.

  - *Existing utility/state/other incentives, funding, or resources* available for green building initiatives; for example; jurisdictions might 'fill the gaps' where other local incentives fall short or 'piggy-back' on existing local incentives for measures.
  - *Local third-party/private partners* potential to support partnership and through what means; for example, jurisdictions might have non-profit organizations interested in co-facilitating green building education programs.
- **Importance of legislation to enact certain incentives.** A significant number of incentives, financial and non-financial, were facilitated via legislative means. This includes a variety of new and amended jurisdiction bills, ordinances, resolutions, rule setting, and codes which must be passed by the relevant jurisdiction bodies. In designing the partnership, local governments benefit from consideration of incentive options and legislative dependencies and probabilities. This approach will enable jurisdictions to facilitate legislation (if desired) through the channels with greatest efficiency and with the highest chance of success.
- **Local government champions critical to partnerships.** While one might assume local politics, regulations, or locale are the key predictor (and driver) of jurisdiction green building partnerships, in fact, partnership success is most directly connected to the initiation and follow-through of local individual champions and the coalitions they build. Most commonly, this includes Mayors and City Council, legislative, and industry leaders. It is these individuals and coalitions that have authority and influence to overcome common barriers and guide stakeholders through the partnership development process. This is further evidenced by the wide range of jurisdictions—of all scales, locations, and political environments—which have adopted partnerships and appreciate green building benefits.

Case Studies

TRC conducted research on three case studies of successful partnerships between home certification programs and governments to understand how the partnerships were established, partnership design and implementation models, benefits of the partnerships, and other lessons learned. The TRC team examined the following three case studies:

- **Case Study 1:** Passive House and Pennsylvania Housing Finance Agency (PHFA). This is an example of a partnership offering financial incentives to encourage the design and construction of energy-efficient, sustainable, and zero net energy (ZNE) buildings in the affordable building sector.
- **Case Study 2:** Earth Advantage Program and the City of Ashland, OR. This is an example of a local government offering a developmental incentive (bonus density) to encourage adoption of residential green building practice.
- **Case Study 3:** Built Green Program and City of Seattle, King County, WA. This is an example of a local government offering a developmental incentive (expedited permitting) to encourage adoption of residential green building practice.

CASE STUDY 1. FINANCIAL INCENTIVE: PASSIVE HOUSE – PENNSYLVANIA HOUSING FINANCE AGENCY

Program Details

Passive House (German: Passivhaus) is a rigorous, voluntary building energy efficiency standard that focuses on development of buildings with high-performance envelopes and passive design features that require little energy for space heating or cooling. Passive House is implemented by two organizations: Passive House Institute US (PHIUS) and the Germany-based Passive House Institute (PHI); building owners and developers can get their project certified by either organization. Passive House prioritizes highly efficient building envelopes, advocating that homeowners can easily retrofit mechanical systems and appliances as new technology becomes available, whereas they cannot easily replace the building envelope. Buildings must also meet minimum use requirements by end use and air-tightness criteria. These criteria apply for all climate zones worldwide.

CERTIFICATION	ENERGY [kWh/(m²a)]	
	DEMAND	GENERATION
PHI Low Energy Building Standard	≤ 75	≥ 0
Passive House Classic Standard	≤ 60	≥ 0
Passive House Plus Standard	≤ 45	≥ 60
Passive House Premium Standard	≤ 30	≥ 120

Figure 4: Passive House Institute's Primary Energy Demand Requirements

Passive House implementation in the US is rapidly gaining momentum as shown below in Figure 5, and PHI has collaborated with many local governments for the promotion of the program. Examples include the City of Eugene, OR, City of Seattle, WA, and with its partnership with the PHFA being the most significant partnership so far.

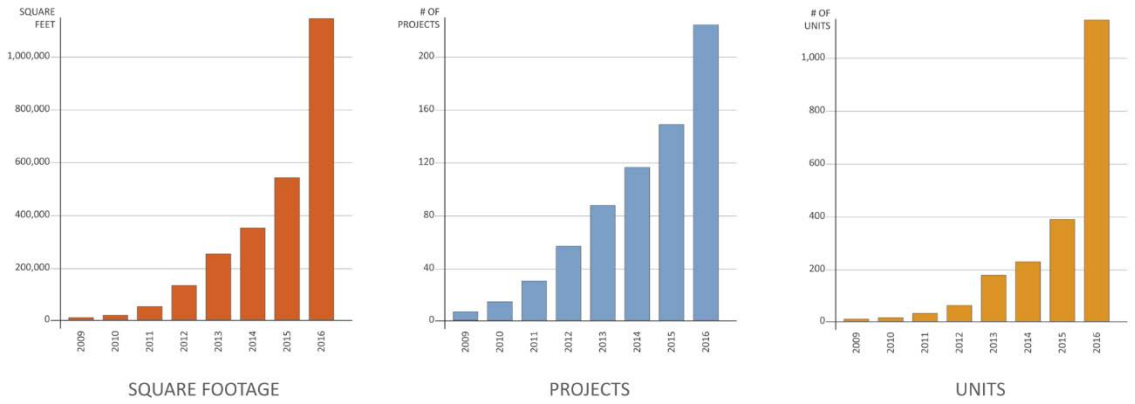


Figure 5: Passive House Growth in the U.S.

Data provided by Zack Semke: Passive House Northwest

1.1.7 Partnership Details

In 2015, Pennsylvania became the first state in the US to offer tax credits to buildings adopting the Passive House certification. Passive House was promoted by PHFA for all projects applying for the 9% Low Income Housing Tax Credit (LIHTC) funding available for construction of affordable housing projects. The LIHTC application is an extremely competitive, point-based system that allocates millions of dollars of federal funding for the design and construction of affordable housing in the state. The application process is in high demand, and only 25% of all applications are funded each year in Pennsylvania.

In 2015, the PHFA started offering an additional 10 points for all developments that met the Passive House certification requirements (national or international). This provided all Passive House projects an extra competitive edge to qualify for the LIHTC funds. To qualify for the points, the projects were required to demonstrate through third-party verifications that the project was Passive House "certifiable." In 2015, the PHFA received 85 project applications and 32 of those projects applied as Passive House projects (~ 38%) and eight Passive House projects (422 units) were funded. In July, 2016 PHFA funded a total 38 projects and 10 projects (500 units) were Passive House projects. These over 900 new affordable housing units will be the largest concentration of Passive House/Net-Zero Energy-Capable dwelling units in the country.

1.1.8 History of the Partnership

In spring 2014, a coalition of approximately 25 stakeholders—with leadership from Tim McDonald (president of Onion Flats and professor at Temple University)—met in Harrisburg, PA to propose to PHFA the design and development of a ZNE capable affordable housing community built to Passive House standards. The proposal was initiated by Tim McDonald who worked with diverse stakeholders and representatives of affordable housing developer sustainability advocates, Passive House architects, designers and builders, members of the Housing Authority, and Mayors' offices of Philadelphia and Pittsburgh to develop the proposal and present it to the PHFA.

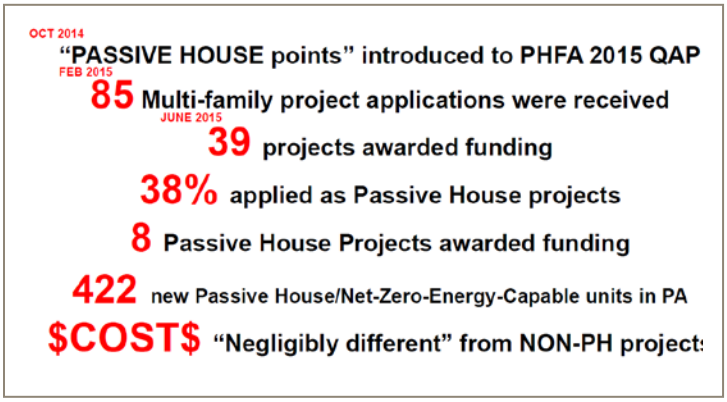


Figure 6: Partnership Development Timeline

The PHFA was already looking to "raise the bar" with respect to energy efficiency as developers had been surpassing their standards for years. PHFA welcomed the challenge and within 4 months put the project in motion by introducing language into their 2015 Qualified Allocation Plan (QAP), which incentivizes developers interested in 9% LIHTC funding to design/construct their projects to meet the rigorous Passive House Standard.

To do this, they created a new category, worth 10 points (out of its 120-point QAP) for "Passive House Certification." The LIHTC application is a point-based system and extremely competitive. Because PHFA funds only 25% of all project applications each year (based primarily on highest point scores), the interest from developers was enormous. 85 multifamily project applications were received in the 2015 round of funding. 32 of those projects applied as Passive House projects.

1.1.9 Partnership Benefits

Although the partnership is in its early stages, it has been collaborative and mutually beneficial for all. The PHFA was able to adopt Passive House as its new tool of choice to advance its energy efficiency goals and was encouraged by the high number of Passive House project applications submitted during the 2015 funding cycle. This partnership has resulted in the highest concentration of Passive House residential units in any particular state, and this partnership has been instrumental in establishing similar partnerships in other parts of the US.

Today, eleven other housing finance agencies (New York, D.C., Rhode Island, Massachusetts, Connecticut, New Jersey, New Hampshire, Idaho, Ohio, Illinois, and South Dakota are including Passive House certification as a basis for earning points in their state's funding mechanisms. Several other states (Maine, Vermont, Delaware, Maryland, Kentucky, Indiana, Michigan, Missouri, Oklahoma, Wisconsin, Minnesota, Iowa, Montana, Utah, Washington, Oregon, Nevada, California, and Alaska) are now actively engaging with the initiative and evaluating ways to adopt Passive House principals within their own building industries. The state of New York's initiative was noticed by the White House and incorporated into the President's comprehensive plan to bring renewable energy and energy efficiency to households across the US[21].

1.1.10 Barriers

There were some barriers and challenges, which Tim McDonald and his coalition of stakeholders had to overcome during this partnership development effort. These included:

- The PHFA staff had to be trained and educated in the Passive House requirements and be able to verify that the project applicants met the requirements of the standard. This was achieved by organizing training sessions focused on the technical requirements of Passive House. Tim McDonald and the stakeholder group, in collaboration with PHIUS, organized the training sessions for the PHFA staff.
- There were perceptions of increased project costs and stringency of the Passive House buildings requirements if affordable building projects were mandated to adopt the Passive House requirements. The PHFA instead opted to provide the additional 10 points as "voluntary" points and the criteria required the projects to be Passive House "certifiable." Additionally, the construction cost premium calculated between the 2015 funded Passive House projects and non-Passive House projects across the State of

[21] http://nypassivehouse.org/white-house-announces-passive-house-initiative/

Pennsylvania was less than 2%, and there was virtually no cost premium for the Passive House projects funded in the 2016 cycle.

- There are some market barriers to be overcome during implementation of the Passive House buildings, such as the air-tightness required in the envelope (<0.5 ACH/hr) and the installation of triple pane windows that were typically imported from Europe. However, as the Passive House adoption rates continue to increase in the US, the market will respond accordingly with innovative solutions such as the Structural Insulated Panels (SIP) wall assemblies by Built Smart[22] that provide wall assemblies with fenestrations prefabricated to Passive House requirements.

1.1.11 Lessons Learned

The successful establishment of this partnership demonstrates the need for a strong champion for the facilitation of these kinds of partnerships (Tim McDonald, in this case). This case study also demonstrates that knowledge, education, or information barriers can be overcome with adequate communication and training. This partnership highlights the fact that Passive House has been able to penetrate the affordable market faster than the market rate residential market largely due to the provision of financial incentives available through the various state housing finance agencies. The private residential market may also benefit with similar incentive structures or legislative mandates in favor of Passive House implementation. Local governments may also consider providing incentives for the promotion of Passive House ready products such as the Built Green SIP products as ways to stimulate the market.

1.1.12 Way Forward

This partnership development effort has established a strong stakeholder group and large pipeline of Passive House projects in Pennsylvania. Tim McDonald is personally committed on expanding the Passive House adoption in other states with the LIHTC financing mechanisms or other means. The growth of the number of Passive House buildings and project shown in 4 demonstrates that this program is poised for momentous adoption in other parts of the country.

1.1.13 Recommendations for NEEA

TRC recommends that NEEA examines viability of Passive House as an affordable method for moving the residential building sector towards ZNE and explores partnering with Passive House stakeholders and the PHIUS for promotion of this program within its territory.

CASE STUDY 2. BONUS DENSITY INCENTIVE: EARTH ADVANTAGE PROGRAM AND CITY OF ASHLAND, OR

1.1.14 Program Details

The Earth Advantage New Home Certification[23] is an Oregon-based program that relies on a rigorous set of standards and thorough inspections to ensure that homes are built to last, work efficiently, provide a healthy

[22] https://www.buildsmartna.com/
[23] http://www.earthadvantage.org/

indoor environment, and offer retail value. Earth Advantage offers five tiers of certification; Silver, Gold, Platinum, as well as Net Zero Ready and Net Zero labels. Participating buildings must fulfill a series of prerequisites and earn at least 60 points for the lowest tier of certification. The points must be spread across the five categories of the Earth Advantage Program, while also meeting minimum points per category; Energy (15), Health (10), Land (10), Materials (15), and Water (10).

The Oregon-based nonprofit organization Earth Advantage administers the program with an overall mission to accelerate the creation of better buildings. Earth Advantage mostly works directly with builders and developers in the states of Washington and Oregon to promote green building partnerships. Its association with the City of Ashland is one example of the program's partnership with local governments.

1.1.15 Partnership Details

The City of Ashland has been offering a 15% bonus density incentive to residential communities for the adoption of conservation measures such as the Earth Advantage program since 2003. From 2003 to 2006, the incentive was available for all developments where at least 85% of the homes adopted Earth Advantage certification. In 2006, the City of Ashland approved an amendment to the City land Use Ordinance[24] which now requires 100% of the homes in any development to adopt Earth Advantage to qualify for the density bonus. The City's Land Use Ordinance utilizes a simple table, which lists measures and points associated with the measures. All homes (100%) in the proposed development must earn a total of 15 points from the table in order to be eligible for the 15% maximum bonus density incentive.

In 2003, the City of Ashland staff was responsible for all the program certifications and the site inspections, but as the volume of Earth Advantage homes grew in the jurisdiction, the City found it challenging to provide verification and certification services. The Earth Advantage program then staffed the City with one of its own employees to conduct the program certification activities, but that model was later replaced by third-party certification services by a private contractor.

1.1.16 History of the Partnership

The City of Ashland is served by the Bonville Power Administration (BPA) utility and needs to meet conservation goals get forth by the BPA. The BPA allocates funding each year to the city to be able to meet its conservation goals, and thus Ashland has a long history of offering programs and incentives that result in energy efficiency and resource conservation efforts. Prior to the City's adoption of the Earth Advantage program (1985-2002), the City's conservation staff relied heavily on the regional Super Good Cents Program (SGC) to advance new residential construction. The SGC-Ashland partnership was so successful that after a few years of operation, virtually every new home was built to the SGC standards and the State of Oregon's building code was eventually improved to SGC standards.

As the market matured, the City began searching for a new program to replace the Super Good Cents Program. They evaluated a number of options and decided to adopt the Earth Advantage Program, as it focused on more

[24] https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/14175/CITY_2007_Ashland_003-05_.pdf?sequence=1

than just energy efficiency, was fuel blind, and was flexible enough to allow builders many more options to meet the program standards. The City's Conservation staff made presentations with the details of the Earth Advantage Program to the City Council and Planning Commission before adopting and implementing the program.

1.1.17 Partnership Benefits

The City of Ashland's partnership with Earth Advantage was at the behest of the City conservation staff, after careful consideration of the potential benefits the program would bring to the City.

- In the past, the City of Ashland had witnessed the successful implementation of the Super Good Cents Program, which eventually led to the adoption of energy conservation measures in Oregon's statewide building code. Similarly, the implementation of the Earth Advantage program is expected to see the widespread adoption of energy efficiency, water, and environmental conservation. Local residential home development has recovered since the 2008 recession, and the 3 recently developed Earth Advantage communities that have benefited from the Ashland bonus density incentive include Helmen Springs, Snowberry Brook (low-income multifamily) and Verde Village - a Zero Net Energy community.
- The City's internal assessment demonstrated that homes not built to Earth Advantage standards consumed more energy and had higher operating costs over their lifetime. The additional energy demand would have resulted in higher overall resource costs for the City. Thus, implementation of the bonus density program was a cost-effective solution to the region's and individual homeowner's energy needs.
- The incentive is aligned with the minimum 15% energy saving requirement of an Earth Advantage home to minimize any overall resource impact to the City. If the City did not provide the bonus density incentive, and none of the homes were built to Earth Advantage standards, the overall municipal resource usage would be at least 15% higher to meet the demand of the non-Earth Advantage homes that would have to be built to satisfy the housing need for the City.
- The City estimates that this bonus density incentive helped to increase the prevalence of Earth Advantage homes to 40% (from 15% without the incentive) of new construction – i.e., an additional 68 homes. The new owners collectively will save about $19,040 annually or $1,332,800 over 70 years at current rates. [25]
- According to NW Power Planning Council numbers, an Earth Advantage home with electric heating is expected to save about 3,860 kWh and $280 annually. Over the 70-year expected lifespan of a home, this amounts to savings of $19,600, assuming no increase in energy costs.[26]

1.1.18 Barriers

The City Council and the Mayor's office raised some concerns during discussions related to the proposed ordinance. There were concerns regarding the lack of studies to quantify the cost to the community of building more densely than the comprehensive plan calls for. In addition, there were concerns regarding the cost implications of homes built to Earth Advantage standards and issues over lack of control over the adequate alignment of a third-party program and the City's long-term planning objectives. The City was able to address these concerns as it had conducted rigorous background research into the program, conducted cost-effectiveness analysis, and was able to demonstrate the lack of evidence of any negative impact to the City's growth plans or to residential homeowners or developers.

[25] http://www.ashland.or.us/Page.asp?NavID=9139
[26] http://www.ashland.or.us/Page.asp?NavID=9139

1.1.19 Lessons Learned

This partnership demonstrates the importance for local jurisdictions to review and change policies and programs periodically and take active steps to ensure that internal goals and objectives continue to be well-aligned with its program partners. The City of Ashland proactively sought to replace the Super Good Cents Program with Earth Advantage as it offered better alignment with the City's building industry and its overall goals for resource conservation. This partnership also demonstrates the added advantage municipal utilities can offer via funding, staffing, or other resources in the successful implementation of conservation efforts and program partnerships.

1.1.20 Way Forward

Ashland continues to look for ways to raise the performance requirements for its buildings. Its Smart Build[27] incentive packages offer financial incentives for platinum-rated Earth Advantage homes and also other benefits for the adoption of high-efficiency appliances, water conservation measures, and electric transportation. The City of Ashland may change the incentive type or the program offered according to market needs, but is committed to providing incentives to promote sustainable growth in its jurisdiction.

The Earth Advantage team believes that incentives can contribute significantly in the promotion of green building practices. The team is focused facilitating multiple partnerships with green building developments and local governments on a case-by-case basis. Examples of some recent successful partnerships where local governments have offered incentives to green building developers include the Northwest Crossing project in Bend, Oregon, and the South Hillsboro Development in the Portland suburbs that will span 1,400 acres and provide 20,000 homes (Figure 6).

1.1.21 Recommendations for NEEA

The TRC team recommends that NEEA examine the possibility of building a coalition of prominent private sector residential developers, local governments, and available residential green building certification programs to generate market competition and provide the best available incentive package for sustainable projects in the future. TRC also recommends identification of partnerships with local governments that have their own utilities to combine resources to achieve a larger societal impact.

[27] http://www.ashland.or.us/Page.asp?NavID=14041

Building Better at SoHi

The High Performance Building Partnership

The South Hillsboro Opportunity
South Hillsboro represents an unprecedented opportunity in Oregon – and perhaps the Pacific Northwest – to build a forward-thinking, sustainable community. A sustainably constructed South Hillsboro - one that is Complete, Connected, and Green - will reduce community greenhouse gas emissions, reduce the use of non-renewable energy resources, and expand the use of renewable energy. Creating these environmental advantages will result in homeowner utility costs savings that exceed $2.5M and directly benefit the local businesses that would provide the necessary products and services.

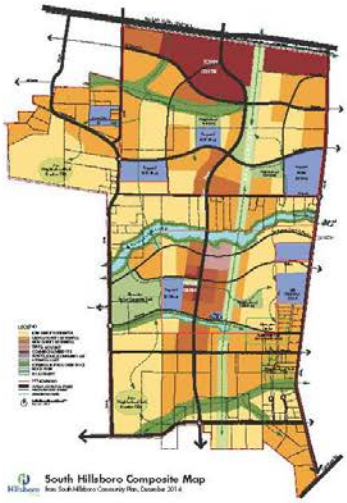
The SoHi High Performance Building Partnership
To support, encourage, and promote a sustainable South Hillsboro, several key local partners have joined together to form the South Hillsboro High Performance Building Partnership. These local companies and organizations include the Energy Trust of Oregon, SolarWorld, Oregon Department of Energy, Earth Advantage, and Portland General Electric. This High Performance Building Partnership has been formed to provide South Hillsboro development teams with the tools and resources they need to accomplish community sustainable development goals.

Providing Incentives for Development Teams
The South Hillsboro High Performance Building Partnership has created a comprehensive package of benefits for developers who incorporate high performance building elements in their designs. The Partnership is offering South Hillsboro development teams unique, pre-development financial incentives, marketing funding, and technical assistance for making a binding commitment to designing and constructing sustainable, energy efficient homes and buildings. Based on these commitments to sustainability performance levels, the city of Hillsboro has agreed to then provide the development teams with potential relief and/or bonuses in the approval of each development team's community plans.

The Outcome
The South Hillsboro High Performance Building Partnership is working together to support the South Hillsboro development teams and the city of Hillsboro in order to produce a community that meets both the needs of the housing market and achieves forward-thinking sustainable development outcomes. The ultimate beneficiaries of these efforts will be the new residents of South Hillsboro, who will be living in homes and apartments that are healthier, more comfortable, and less expensive to operate and maintain.

For more information on the South Hillsboro High Performance Building Partnership - Contact:

Anthony Roy, *Director of Policy & Partnerships,* Earth Advantage
aroy@earthadvantage.org



Hillsboro OREGON

OREGON DEPARTMENT OF ENERGY

SOLARWORLD REAL VALUE

Portland General Electric

EnergyTrust of Oregon

earthadvantage.

Figure 7: Earth Advantage Partnership with the South Hillsboro Development

CASE STUDY 3. EXPEDITED PERMITTING INCENTIVE: BUILT GREEN PROGRAM AND CITY OF SEATTLE, KING COUNTY, WA

1.1.22 Program Details

The Built Green program encourages environmentally responsible building practices by certifying homes that meet the specified performance criteria of its multi-tier rating system that includes energy efficiency, site and water conservation, health and indoor air quality, materials efficiency, and building operations and maintenance. An Excel spreadsheet checklist is used to track points and prerequisites within each category to determine which level of certification is attainable – 1 through 5-Star or Emerald. The spreadsheet assigns points for modeled energy performance and for individual energy saving action items. Verifiers confirm checklist measures and document results before the program awards certification.

Built Green homes are designed to be comfortable, durable, environmentally friendly, and cost-effective to own and operate. The Built Green implementation team consists of 11 Builders Associations across Washington State, summarized in Table 2 below. Each association implements its own regional program, with one builder and one staff member representing their program at statewide board meetings. The Built Green Program of King and Snohomish Counties is the most active, certifying approximately 80% of Built Green homes in the state.

BUILT GREEN PROGRAM	BUILDERS ASSOCIATION AFFILIATE
Central Washington	Central Washington HBA
Clallam County	North Peninsula BA
Inland Northwest	North Central HBA
Jefferson County	Jefferson County HBA
King & Snohomish Counties	MBA of King and Snohomish Counties
Kitsap	HBA of Kitsap County
Olympia	Olympia Master Builders
SICBA	Skagit/Island Counties BA
Tahoma-Pierce County	MBA of Pierce County
Tri-Cities & Walla Walla	HBA of Tri Cities
Whatcom	BIA of Whatcom County

Figure 8: Built Green Implementation Team

Built Green of King and Snohomish County's partnership with the City of Seattle is featured through this case study.

1.1.23 Partnership Details

The City of Seattle offers faster construction permit processing in exchange for building green through its Priority Green Expedited Incentive Program[28]. Projects need to be designed and constructed to achieve Built Green 4-

[28] http://www.seattle.gov/dpd/permits/greenbuildingincentives/prioritygreenexpedited/default.htm

Star, 5-Star, or Emerald Star to be eligible to apply for the expedited permitting incentive. Other green building programs such as LEED Gold or Platinum, Living Building Challenge (LBC), Petal or Net Zero Energy Building, Passive House Institute US +2015, and Seattle DCI Alternative Path are other eligible green building programs; but most residential projects choose the Built Green program. The Priority Green Expedited program shortens the time for projects to get a new construction permit and provides additional privileges such as a personal point of contact within the city, priority in scheduling the intake appointment, faster initial review of the plans, and faster routing of the plans. Typically, projects can receive an advantage of getting their construction permit four weeks earlier for single-family and other small residential projects, and two weeks earlier for multifamily and nonresidential projects. The City included this partnership and incentive structure as part of its regular business practices, thus avoiding the need for any legislative mandates or ordinances that could have possibly slowed down the process of partnership development.

The City of Seattle and Built Green program team have a very robust and collaborative working relationship. The City is represented on the Built Green Executive Committee and provides input on the program's policies and direction to ensure that the City's goals remain well-aligned with the program. The two partners work collaboratively through external communication platforms (websites, newsletters, etc.) to promote each other's efforts and program successes.

The Built Green program team conducts all project verifications and inspections and provides a monthly report for all project enrollment and certifications under the program. The monthly report provides the City unique Built Green project identification numbers for the City to be able to verify the project and expedite the permitting process accordingly. The City completely relies on the Built Green program team for the project verifications, and thus is able to save duplicative effort and make the expedited permitting process efficient for its customers. Built Green also actively engaged with the City and works hard to maintain open communication channels and its working relationship with the City staff.

1.1.24 History of the Partnership

The Priority Green Expedited Permitting Program is one of many green building incentives available in the City to help meet Seattle's Climate Action Plan and move towards a carbon-neutral community by 2050. The Priority Green Expedited program was initiated in April 2009 by Mayor Nickels who announced Seattle's plans to increase energy efficiency requirements for new buildings by 30% and to offer new expedited permitting process for innovative projects that meet energy performance standards.

Mayor Nickels initiated the partnership building process by convening a committee to explore how to incentivize green building projects. The committee's research efforts showed that the Built Green program was popular in many local jurisdictions in Washington State. The Built Green 4-star certification level aligned well with the City's own internal goals of designing buildings that are at least better 15% better than minimum energy performance required by the Seattle Residential Code (SRC). There were other alignments between Seattle's priorities and the Built Green program structure such as water reduction, improvement of indoor air quality, and material waste recycling. The City committee members initiated discussions with the Built Green program administrators who were eager to collaborate with the City and participate in the incentive scheme; the program was active by the third quarter of 2009.

1.1.25 Partnership Benefits

The City has been able to stimulate the green building market through the adoption of the expedited permitting program. Since 2009, the City has processed over 700 building permit applications and has a 20% participation

rate in green building programs.[29] The City has benefited from improved feedback from its customers and has been able to engage market stakeholder in the green building movement who would not have adopted green building design and construction without the incentives. The Built Green 3-Star certification level used to be its most popular certification level, but since 2014, the program team has seen a dramatic increase in the development of 4-Star certified projects (Figure 97). In 2014, the City of Seattle also saw a dramatic increase in the number of Priority Green permits issued (Figure 108), and the Built Green program team believes that project developers are willing to design to higher green standards to leverage the expedited permitting incentives by the City. Thus, the incentives are pushing the industry to adopt higher energy efficiency and sustainable construction practices.

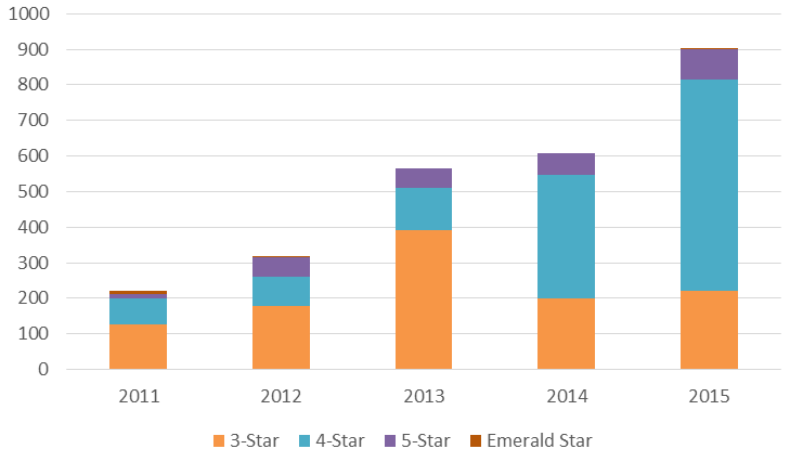


Figure 9: Number of Built Green Certifications[30]

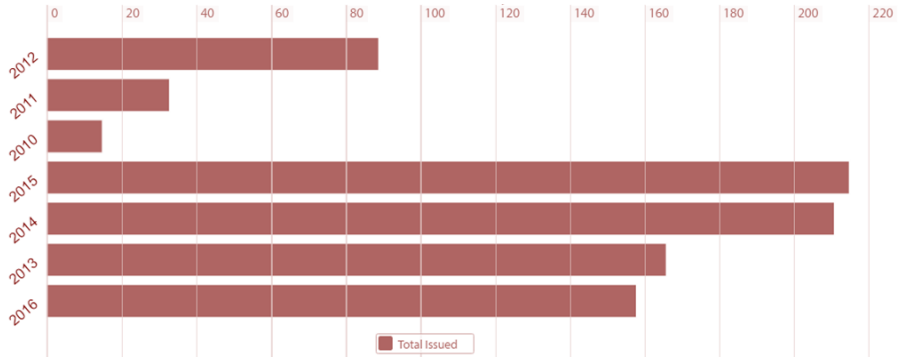


Figure 10: Number of Priority Green Permits Issued by the City of Seattle[31]

[29] http://buildingconnections.seattle.gov/2016/04/04/build-green-for-a-streamlined-permit-review/
[30] Data provided by the Built Green Program
[31] Data from https://performance.seattle.gov/stat/goals/gedg-zkgv/nv3t-f6zu/k3rb-xsch

1.1.26 Barriers

The stakeholders involved in the development of this partnership and the Priority Green Expedited Permitting Program report that there are no major barriers in this initiative. This was a top-down effort initiated by the Mayor's office, which helped to gain stakeholder consensus, align needed resources, staff members, and rapidly move towards the adoption of the partnership and incentives. The alignment of the City of Seattle's goals and objectives and the Built Green program design also helped eliminate any potential conflict or implementation barriers.

1.1.27 Lessons Learned

This partnership demonstrates that policy direction initiated by the top leadership of a local government can be a very effective approach for advancing new initiatives. Thus, TRC recommends striving for agreement and buy-in from stakeholders in decision-making positions prior to investing a significant amount of time or resources in any particular effort. This partnership also demonstrates that a simple initiative that does not impact a government's financial resources can be a very effective method to stimulate the industry, and even push the industry to strive to achieve deeper savings to be eligible for the incentives. It is also critical to identify partners with common goals and objectives as one's own organization priorities. This partnership also demonstrates the need for seeking simple and effective implementation methods and processes. For example, the lack of need of a legislative mandate or reliance on the Built Green program staff for project verification and certification data.

1.1.28 Way Forward

The City of Seattle will continue to work with Built Green and other partners to achieve higher participation rates in the green building programs. The City is also working on finding ways to make the energy performance requirements more stringent through means of the SRC and/or programs. The Built Green program team is trying to expand its local government partners by focusing on establishing new partnerships. Some of its recent successes include recently established partnerships with the City of Shoreline and the Snohomish County Public Utility District[32].

1.1.29 Recommendations for NEEA

TRC recommends that NEEA examines the scenario of building a coalition of local government leaders—Governors, Mayors, City Planning Department heads, etc.—to advance the knowledge and education of green building programs, advantages of building green, successes, lessons learned, etc. The facilitation of interaction within such a coalition could possibly motivate additional city leaders to initiate similar green building advancement policies, programs, and partnerships within their own jurisdictions.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The TRC team gained valuable insights during the process of research, data collection, interviews, and analysis for case study development. As described in Chapter 1 of this report, there are numerous models for partnerships between local government and residential green building programs. However, TRC presents a summary of key

[32] http://www.snopud.com/conservation/buildes.ashx?p=1288

findings and recommendations for local governments during the process of partnership development. These include:

- **Dedicated Partnership Lead**: TRC identifies the critical need for at least one dedicated staff person at the local government who can play the lead role during partnership development. This person needs to be a strong advocate and committed to advancing green buildings, have buy-in from senior leadership, have the needed staff and other resources to help in this effort, and be effective in stakeholder engagement efforts to communicate and collaborate as needed with internal and external stakeholders to build the partnership. Examples include Tim McDonald playing the critical role in the development of the Passive House partnership with PHFA or Mayor Nickels directing his staff to identify and collaborate with a residential green building program and use the partnership as a tool to achieve Seattle's energy goals.
- **Long-term Commitments:** The interviews conducted during the case study development research showed that a new partnership development initiative can take up to a year to yield results. The process of identifying partners, engaging stakeholders, negotiating terms and conditions, and getting approval for the partnership agreements can be a slow process and can take months. TRC recommends recognizing the time commitments needed during this process and being persistent with moving things forward. Built Green's latest partnership with the Snohomish County PUD was established after persistent efforts by the Built Green team for over a year.
- **Understand Community and Stakeholder Needs:** TRC recommends that it is imperative for local governments to understand the changing market and stakeholder needs and have the flexibility to initiate change in the partnership details or implementation processes accordingly. *G*overnments should have a comprehensive understanding of the status, direction, and needs of the building sector within its jurisdiction. This includes persistently reviewing and analyzing the status of green building program implementation, needs of the various market actors (building owners, tenants, developers, etc.), market barriers, available green building programs, technologies and other solutions, efforts of other governments in other parts of the state/country, etc. This allows local governments to monitor the implementation of the partnership and ensure change in direction or policies according to the market and stakeholder needs.
- **Find Sustainable Solutions:** TRC recommends that local governments have a long-term vision for the outcomes they would like to see in their building sector. The partnerships and any incentives put in place should be aligned with a government's long-term vision, goals, and objectives. The resource requirements (e.g., staffing, training, time, funding, etc.) for implementation of the partnership and incentives should be established on a long-term basis to ensure the sustainability and viability of the identified solutions. For example, local governments choosing to offer financial grants for the adoption of green buildings should carefully examine the long-term impacts on their budgets to ensure that funds will be available for projects as planned.
- **Shared Roles and Responsibilities:** TRC recommends that local government and program teams discuss the roles and responsibilities of everyone involved in the partnership. Governments and programs often face resource constraints (i.e. staff, time, budgets). A clear definition of roles and allocation of tasks enables both partners to allocate staff and resources efficiently to accomplish the work. A good example of clearly defined roles and shared responsibility is in the City of Seattle's partnership with Built Green, where the City relies on Built Green staff to verify project submittals and provide the City with a list of projects that are eligible to receive the expedited permitting bonus. This sharing of responsibility and communication between the partners saves the City time and duplicate effort of verifying the 4-Star or higher certification level of all projects that apply for the faster permits.

The next section of this report synthesizes the information on industry best practices into a step-by-step method which will help local government understand the different steps and activities that need to be undertaken for the development of successful partnerships with programs.

Partnership Best Practices Guide

BEST PRACTICES GUIDE SUMMARY

The TRC team developed this Best Practice Guide for local governments and home certification programs who are considering the establishment of partnerships to stimulate the marketplace. The guide lays out a step-by-step process for local governments and programs to identify and establish successful partnerships. The TRC team has developed the process based on the review of success stories of established partnerships and/or incentive structures in various parts of the US. TRC's guide is also informed by data and information collected through literature reviews, case study analyses, and interviews of relevant stakeholders.

KEY STAKEHOLDERS

The partnership key stakeholders involve any individual, groups, or organizations who affect and/or could be affected by the partnership development. TRC highly recommends identifying a strong internal stakeholder who will serve as the *Partnership Lead*. The Partnership Lead will remain the key stakeholder during the entire process of identifying and establishing this partnership. This critical stakeholder plays the role of being the main champion in favor of promoting green building construction practices. The Partnership Lead is typically someone in a City's Department of Energy, Sustainability, or Environment, and needs resources and support of senior management/decision-makers within the government.

The other stakeholders during the partnership development processes will include Local Government Representatives from various departments, Market Representatives which are stakeholders from the community and the building design industry, and other relevant partners from outside of the jurisdiction. The Partnership Lead is responsible for identifying other relevant stakeholders who will eventually share the roles and responsibilities of the partnership development process. Other stakeholders and their expected roles are summarized below:

	KEY STAKEHOLDERS	ROLES & RESPONSIBILITIES
	Partnership Lead	Responsible for serving as the overall champion for the Local Government – Home Certification Program partnership development. Partnership lead is often a representative of the local government, but could be a private citizen/advocate, or represent the program team.
Local Government	**Department of Energy**	Responsible for advocacy and ensuring adequate alignment of internal energy goals with potential program partners. Often plays the role of Partnership Development Lead and/or administration of identified incentives.
	Department of Environment/Sustainability/Conservation	Responsible for advocacy and ensuring adequate ensuring alignment of internal environmental (air & water quality), sustainability and/or climate change goals with potential program partners. Often plays the role of Partnership Development Lead and/or administration of identified incentives.
	Department of Waste Management	Responsible for advocacy and for adequate alignment of internal waste management and recycling goals with potential program partners.
	Planning/Building Department	Responsible for coordinating and collaboratively working directly with the Green Building Certification Program to verify the development of green projects. Sometimes plays the role of Partnership Development

		Lead, and often responsible for the administration of identified incentives.
	Department of Finance	Responsible for evaluating the financial impact of proposed partnerships and/or incentives, allocation of budgets and disbursement of financial incentives such as grants, rebates etc.
	Mayor /Governor's Office	As needed, signs off on the approved partnership and incentive agreements, legislation and/or mandates.
	Communication Department	Responsible for creating the channels and content for appropriately communicating the details of the partnerships and incentives to the building industry and other market stakeholders.
	City Legislative Office/ City Council	Responsible for careful development, consideration and approval of partnership and incentive agreements, legislation and/or mandates.
Market Representatives	**Building Owners and Tenants**	Responsible for engaging with the local government team and providing them information to help them understand the market's knowledge, perceptions, demand, and barriers for green buildings.
	Building Design Team	This includes building designers, engineers, contractors, construction workers and others involved during the home design and construction stages. Their responsibility is to engage and communicate with the local government team to help them understand the opportunities, benefits, and barriers of designing and constructing a green building project.
	Building Development Team	This includes building developers, financiers, real estate agents and others who might be involved with the building owners/design team in the development of the project. Their responsibility is to engage and communicate with the local government team to help them understand the perceptions, opportunities, benefits and barriers of financing, developing or buying/selling a green building project.
	Home Certification Program Administrators and Staff	Responsible for providing local government stakeholders information about the program goals, objectives, technical details, implementation process, certification criteria, program enrollment volume, program benefits, barriers, future plans and other relevant information.
	Other Local Government Partners	This includes representatives of other local governments who have successfully established partnerships and/or incentives with green building program administrators, and can provide valuable insights into lessons learned.

BEST PRACTICES GUIDE

Given below is step-by-step guidance for the Partnership Lead to facilitate the process of partnership development with relevant home certification program teams. TRC has described the objective of each step, intended outcome, and all activities for the successful completion of each step.

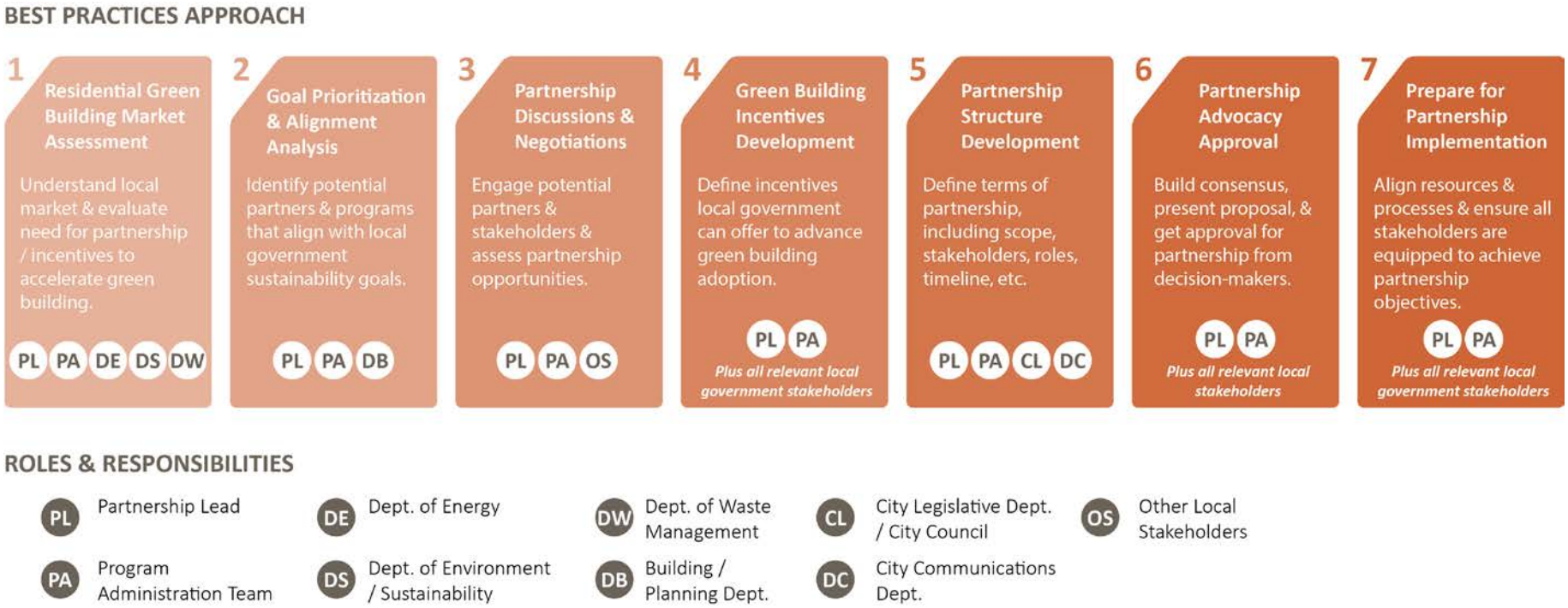


Figure 11: Partnership Development Guide: A Step-by-Step Method

1.1.30 Residential Green Building Market Assessment

- **Objective:** The focus of the market assessment step is to understand the overall market, opportunities, and barriers of the residential green building construction industry.
- **Intended Outcome:** The market assessment data helps to evaluate the vibrancy of the market and provide insight into the need for additional partnerships and incentives to accelerate the marketplace.
- **Activities**
    - *Green Building Programs Research:* This activity includes research on available residential green building certification programs and residential building codes. This activity will help identify a residential green building certification program with aligned goals and objectives and a local presence for the establishment of the partnership. The most commonly available options include LEED, ENERGY STAR, Built Green, Earth Advantage, RESNET HERS, Living Building Challenge, Energy Performance Score and National Green Building Standard, and DOE Zero Energy Ready Homes. The research should carefully examine the program goals and objectives, performance criteria, implementation process, certification criteria, and other details.
    - *Residential Green Building Construction Market Size and Impact:* This activity includes research into the residential new construction/retrofit market trends and helps to quantify the penetration of green building construction programs in the jurisdiction. This activity will involve carefully quantifying the building permits issued for residential projects/developments and comparing the green home projects to non-green construction activity. The extent of penetration of green building practices in the current marketplace will provide direction on the need for the establishment of partnerships and/or incentives to stimulate the market. The data collected for this activity could be collected and analyzed for the most current year or could be analyzed on a longitudinal basis to understand how the residential construction market has changed over time
    - *Market Stakeholder Analysis:* This activity includes stakeholder outreach and engagement to homeowners, designers, developers, green building product manufacturers and distributors, and other relevant stakeholders to understand the barriers and opportunities in the residential green building construction market. The engagement efforts should include interviewing and/or surveying the stakeholders regarding the awareness and perceptions of green building certification programs, green building goals and objectives, impact of building green on project cost, schedule and construction process, green building construction barriers, and market interventions needed for the promotion of residential green building construction.
    - *Define Partnership Needs and Parameters:* The findings of the market assessment and the understanding of the green building construction barriers and opportunities
- **Stakeholders Involved**
    - Partnership Lead: To define the scope and direction of the market assessment activities.
    - Department of Energy, Department of Environment/Sustainability and Waste Management: To provide data on goals and objectives of their individual departments.
    - Green Building Program Administration Team: To provide an understanding of the scope of their programs.

1.1.31 Goals Prioritization and Alignment Analysis

- **Objective:** The focus of this step is to conduct a comparative analysis on the design, goals, and objectives of available programs with the local jurisdiction goals for energy, water, environmental, and sustainability.
- **Intended Outcome:** This step helps to identify an appropriate partner(s) that is well-aligned with local government priorities and has the potential of being a collaborative long-term partner for the jurisdiction.
- **Activities**
    - *Summarize Internal Priorities:* During this activity, the Partnership Lead should work across multiple departments within the organization to identify and summarize all goals and objectives in areas of energy, water, waste management, air quality, renewables, transportation, and other needs to track sustainable growth. The Partnership Lead also needs to work collaboratively across the various departments to assess the relative priorities of the different goals and be able to define a partner selection criteria based on its strategic needs.
    - *Conduct Gap Assessment:* This activity includes the qualitative and quantitative comparison of local government internal goals and objectives with those of all available residential green building programs to identify potential partners with maximum alignment with internal priorities.
    - *Shortlist Program Partners:* This activity includes shortlisting any available program(s) that are well-aligned with local government high priority goals.
- **Stakeholders Involved**
    - Partnership Lead: To conduct the goals prioritization and analysis.
    - Building/Planning Department: To provide data on residential new construction and retrofit permits.
    - Green Building Program Administration Team: To provide an understanding of the scope of their programs.

1.1.32 Partnership Discussions/Negotiations

- **Objective:** The focus of this step is to engage all potential program partners identified in Step 2 to discuss the potential of a partnership. TRC recommends that the outreach efforts should ideally focus on tapping into already established professional networks and other relationships for making the initial contact with program administrators. Stakeholders from other local jurisdictions who have established similar partnerships are good candidates to engage for making the initial introductions between the Partnership Lead and the program administrations.
- **Intended Outcome:** The discussions held during this step help identify and confirm viable partners for the local government, and eliminate programs that do not seem to be viable partners due to the outcome of these discussions.
- **Activities**
    - *Identify Personal Contacts:* This activity includes identifying the names green-building program administrators and the available means through which the Partnership Lead could establish personal contact with them. This could include a stakeholder, colleague, or other business associates who could make the initial introduction and set the stage for the discussions
    - *Develop Discussion Tools:* This activity includes developing any documents, presentations, or other tools to facilitate a robust discussion. This may include a discussion agenda, presentation materials, and other documents to detail out the common goals, mutual benefits of the proposal partnership, and other discussion points.

  - *Organize Meetings and Hold Discussions:* This success of this activity relies on the clear articulation of meeting agenda, discussion topics, and the intended outcome of these discussions. The Partnership Lead should lead these negotiations and have clarity on the overall vision and roles and responsibilities of all stakeholders involved. The partnership discussions and negotiations might take multiple meetings for everyone to come to common terms of engagement.
- **Stakeholders Involved**
  - Partnership Lead: To conduct engagement efforts and plan and lead the discussions.
  - Program Administration Team Leads: To participate in the partnership discussions.
  - Representatives of other Local Jurisdictions or Market Stakeholders: To help identify and make the personal connections for the Participation Lead.

1.1.33 Green Building Incentives Development

- **Objective:** The focus of this step is to have open communication with the identified program partner(s) to discuss the need for incentives to stimulate the green building industry. TRC recommends that the data and information on residential green building market barriers gathered through Step 1 should be used to help evaluate the details of the incentives needed by the industry.
- **Intended Outcome:** This step helps define if the partnership agreement will include the provision of incentives from the local government for the adoption of green building program(s) in the industry.
- **Activities**
  - *Market Assessment Results Analysis Discussions:* This activity includes the close collaboration between the Partnership Lead and the identified program partner to analyze the market assessment data and understand the opportunities and barriers for the growth of the residential green building marketplace.
  - *Identify Incentives:* This activity includes identification of incentives that are well-aligned with market needs and available resources within the local government. It is imperative that any proposal for an incentive be made after close examination of what will be effective for removing green building market barriers, and what kind of incentive can be adequately supported within the budget and resource constraints of the local government. For example, the local government should explore providing technical and design assistance as an incentive to green building projects if the market barriers include a lack of understanding of green building practices, *and* if there is technical expertise available within the local government to provide adequate support.
  - *Evaluating the Impact of Incentives:* This activity includes evaluation of the resource needs for successful implementation of the identified incentives. This will include working with the various departments within the government who will be involved in the implementation of the incentives and identifying the need for additional funding, staff, training, etc. needed for effective delivery of the incentive. This activity will be completed with the selection of an incentive type and model that is a viable solution for the local government and the market needs.
- **Stakeholders Involved**
  - *Partnership Lead:* To lead the efforts of viable incentives that the local government could offer to promote the program partner and green building practices.
  - *Program Administrator:* To provide input and information about the need for incentives and help the Partnership Lead develop the incentive package accordingly.

- *Local Government Stakeholders:* To provide input to the Partnership Lead on available resources within various departments of the local government to assess the impacts and the viability of the proposed incentive package.

1.1.34 Partnership Structure Development

- **Objective:** The focus of this step is for local government stakeholders and the home certification program administration team to work collaboratively to detail the terms and conditions of the partnership agreement. The partnership structure will include defining the level of rigor of the green building program adopted (mandatory or voluntary), timelines, roles and responsibilities of stakeholders, implementation processes, incentives offered, and other details of the partnership. This step may also require the development of legislative mandates and/or any ordinances that may need approval by the City Council and the City Mayor's office in cases where a local jurisdiction adopts a mandatory green building program.
- **Intended Outcome:** This step helps develop the partnership details and all the necessary documentation needed to formalize the partnership.
- **Activities**
  - *Partnership Details Development:* This activity includes the team working collaboratively together to document the details of the partnership and the incentives. The team will draft the partnership agreements to include the partnership scope, timelines, incentives, project eligibility criteria, implementation processes, ordinances, and other details.
  - *Partnership Operations Development:* This activity is related to work done during the partnership details development, but deserves special attention due to its critical importance. This activity defines the roles and responsibilities for the local government and program team and becomes particularly important if the local government is offering incentives for the promotion of the program. This activity allocates responsibilities for project enrollment, verification, certification, and processes for incentives delivery for the qualified project.
  - *Communication Protocols:* This activity details the communication channels and protocols to facilitate continued communication and collaboration between the different teams. This activity will identify the main points of contacts, events, meetings, and other communication methods such as media, website, and social media which will be used for marketing of the partnership and ensure that the partners have aligned messaging to the market stakeholders. This activity should also establish regular communication mechanisms between the program and the local government teams, such as monthly meetings, joint participation in decision-making, sharing of information about relevant opportunities and projects, etc.
- **Stakeholders Involved**
  - *Partnership Lead:* To lead and define the partnership structure.
  - *Program Administration Team:* To provide input and work collaboratively with the Partnership Lead to define the partnership structure.
  - *City Council/ City Legislative Department:* To provide input and help in the development of any needed legislative ordinances or mandates.
  - *Communication Department:* To provide input to the Partnership Lead in the identification of channels and protocols to facilitate effective communication between the partners, other market stakeholders and other external audiences.

1.1.35 Partnership Advocacy and Approval

- **Objective:** The objective of this step is to present the proposed partnership and incentive agreements to all relevant stakeholders, address any issues, concerns and/or questions, and get approval from all stakeholders for proceeding with the adoption of the agreements.
- **Intended Outcome:** This step helps engage all relevant stakeholders in the initiative and build consensus and support for the proposed partnership.
- **Activities**
    - *Stakeholder Engagement:* This activity involves engaging the multiple stakeholders through dialogue in public and private meetings. The Partnership Lead should develop engagement tools such as documents and presentations that detail relevant information about the partnership details and benefits for the community. This activity will solicit feedback from all stakeholders and address any questions or clarifications that the stakeholders might seek at that point. TRC recommends that all stakeholders should be allowed to submit questions, concerns, or any other feedback into the public domain.
    - *Address Comments/Concerns:* This activity focuses on addressing any concerns, questions, and other feedback received during the stakeholder engagement. This can be done by organizing additional meetings, presentations or discussion forums, or could be done through written communication channels. This activity includes making any needed changes or revisions to the partnership and/or incentive details according to the stakeholder feedback. A final partnership and incentive proposal should be presented to all stakeholders to demonstrate that all feedback received was adequately addressed.
    - *Partnership proposal approval:* This activity involves presenting the final proposal should be for approval by the decision makers in the local government (i.e., Planning Department, City Council, Mayor's office etc.).
- **Stakeholders Involved**
    - All relevant stakeholders and other members of the community.

1.1.36 Prepare for Partnership Implementation

- **Objective:** The focus of this activity is to ensure that the local government has resources, staff, and processes in place for the implementation of the partnership agreement.
- **Intended Outcome:** This step will ensure that the different stakeholders within the local government are well prepared and equipped to meet all defined roles and responsibilities as per the partnership agreement.
- **Activities**
    - *Staff Orientation:* This activity involves orienting the partnership implementation team on the requirements, goals, and objectives of green buildings, team roles and responsibilities, and how the internal project permitting, inspection, and approval processes might change to respond to the requirements of the partnership. The staff orientation will highlight needs for additional hiring, training, or other resource needs within the team.
    - *Staff Technical Training:* This activity involves providing technical training to help team members understand green building design/construction requirements and how to fulfill their new roles and responsibilities.
    - *Marketing, Outreach, and Communications:* This activity involves an external outreach and marketing and communication campaigns to advertise the partnership to all residents or potential builder/developer participants who might not have been involved during the stakeholder engagement process. This could include announcements in media channels

and dissemination of information through websites, social media, flyers, brochures, and other available channels.

- **Stakeholders Involved**
  - All local government stakeholders: To participate in green building staff orientation and training events.
  - Home Certification Program Administrators: To participate and provide input to the technical staff training events, and collaborate in the outreach, marketing and communication efforts.

SUMMARY

There is no "one size fits all" approach to partnership development and implementation strategies, because each jurisdiction, market, and stakeholders are unique in terms of characteristics and requirements. The above-identified steps in the Best Practices Guide are suggested to be completed sequentially, but in many cases, the sequence of steps and activities can be easily modified to meet the unique needs.

The overall key to a successful, long-term, and sustainable partnership is the identification of an appropriate partner based on a thorough analysis and understanding of the market and long-term goals, having a clear definition of partnership terms and conditions, and ensuring all potential barriers of partnership implementation are identified and addressed. The role of open and regular communication channels between the partners is an important relationship-building tool amongst partners and a key element of successful partnership implementation. TRC also recommends that partners remain nimble, flexible, and willing to change the partnership terms and conditions according to the rapidly changing needs and status of the building industry.

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Appendix B: Nationwide Partnership Database

LOCAL GOVERNMENT	STATE	PARTNERSHIP NAME	INCENTIVE TYPE							
			Density & Height Bonuses	Expedited Permitting	Tax Credits	Fee Subsidization	Rebates	Grants	Loans	Technical and/or Marketing Assistance
Acton	MA	East Acton Village Plan - Options for Density Increases	X							
Anchorage	AK	Permitting Fee Refunds				X				
Anne Arundel County	MD	Solar Energy Equipment Property Tax Credit			X					
Arlington County	VA	Green Building Incentive Program	X							X
Asheville	NC	Building Permit Fee Waiver; Sustainable Development Bonus; Land Use Incentive	X		X	X				
Ashland	OR	Green Building Incentive	X							
Aurora	CO	Solar Permit Offset and Energy Audit Rebate; Residential Energy Efficiency & Conservation Rebate Program; Main Street Commercial Energy Efficiency & Conservation Rebate Program				X	X			
Aventura	FL	Incentives for LEED Certified Buildings	X	X						X
Babylon	NY	LEED Certification Fees Refund; Long Island Green Homes Program				X			X	
Baltimore County	MD	High Performance Homes Tax Credit; Commercial Property Tax Credits for LEED-Certified Buildings			X					
Bar Harbor	ME	Density Bonus for LEED Buildings	X							
Bellingham	WA	Density Bonus for LEED Silver; Green Bin-Bump Up	X	X						
Berkeley	CA	Berkeley FIRST Program							X	
Big Bear Lake	CA	Green Building Incentives		X						X
Bloomington	IN	Sustainable Development Incentives	X							

Bothell	WA	Incentives for LEED Certified Commercial Projects	X	X		X				X
Boulder	CO	ClimateSmart Solar Grant Program						X		
Boulder County	CO	ClimateSmart Loan Program							X	
Brookhaven	NY	Green Building Density Incentives	X							
Buckeye	AZ	Green Building Program		X						X
Burbank	CA	Green Building Program; LEED Certification Incentive Program				X		X		
Carroll County	MD	Green Building Tax Credit			X					
Cascade Water Alliance	WA	WaterSense New Homes Incentive Program						X		
Catawba County	NC	Green Construction Permitting Incentive Plan				X				
Chandler	AZ	Green Building Program		X		X				X
Charlotte County	FL	Green Building Program		X						X
Chatham County	GA	Commercial Property Tax Credit			X					
Chicago	IL	Green Permit Program; Small Business Improvement Fund		X		X		X		
Cincinnati	OH	Community Reinvestment Area - LEED			X					
Cleveland	OH	Residential Property Tax Abatement for Green Buildings			X					
Columbia	SC	Green Buildings Incentive Program		X		X				X
Columbus	OH	Green Columbus Fund				X		X		
Costa Mesa	CA	Green Building Incentive Program		X		X				
Cranford	NJ	Green Building Density Incentive Program	X							
Cupertino	CA	Green Incentives		X		X				
Dallas	TX	Green Building Program		X						
Deltona	FL	Green Home Incentive Program		X		X				X
Doylestown Borough	PA	Green Points Building Incentives Program				X				
El Paso	TX	Green Building Grant Program						X		
Eugene	OR	Green Building Incentive Program		X						X
Gainesville	FL	Green Building Program		X		X				X
Germantown	TN	LEED Density Bonus	X							

Harford County	MD	Property Tax Credit for Solar and Geothermal Devices			X				
Harris County	TX	Partial Tax Abatement for LEED Certified Buildings			X				
Hillsborough County	FL	Residential Green Homes Policy		X					
Honolulu	HI	Solar Roofs Initiative Loan Program; Real Property Tax Exemption for LEED Certified Buildings			X			X	
Howard County	MD	Property Tax Credit for High Performing Buildings			X				
Indianapolis	IN	Green Building Incentive Program				X			
Issaquah	WA	Sustainable Building and Infrastructure Policy		X					X
Jacksonville	FL	Sustainable Building Program		X		X			X
Kearny	NJ	Density Bonuses for Private Redevelopment Projects	X						
King County	WA	Residential Grants Program; Commercial LEED Grants Program					X		
Kirkland	WA	Priority Permit Review for New Green Homes		X					
Lakewood	CO	Solar Permit Fee Rebate; DIY Attic Insulation Rebate				X	X		
Long Beach	CA	Flexible Development Standards for LEED Gold; Residential Energy Efficiency and Solar Water Heating Rebate Program	X				X		
Los Altos Hills	CA	Green Building Incentives		X					X
Los Angeles	CA	Private Sector Green Building Ordinance; Non-Residential New Construction Incentive Program		X			X		
Louisville	KY	Green Infrastructure Incentive Program					X		
Marin County	CA	Green Building Incentive Program		X		X			X
Mecklenburg County	NC	Green Permit Rebates Program				X			
Miami	FL	Green Building Incentive	X	X					
Miami Beach	FL	Voluntary LEED Building Rating System		X		X			X
Miami Lakes	FL	Green Building Program		X		X			X

Miami-Dade County	FL	Green Buildings Expedite Process; Green Corridor PACE		X					X	
Milwaukee	WI	Milwaukee Shines PACE Solar Loan Program							X	
Montgomery County	MD	Property Tax Credit for Energy and Environmental Design; Residential Energy Conservation Property Tax Credits			X					
Nashville	TN	Downtown Plan - Density Incentives	X							
New Albany	OH	Green Building Incentive Program for New Commercial Buildings				X				
Northbrook	IL	Green Building Initiative Incentive Program		X		X				X
Oakland	CA	Green Building Resource Center								X
Onondaga County	NY	Green Building PILOT Credit			X					
Palm Desert	CA	Energy Independence Program (EIP)							X	
Pasadena	CA	LEED Certification Program; High-Performance Building Program					X	X		X
Philadelphia	PA	Solar PV Projects Incentives		X	X	X				
Pittsburgh	PA	Sustainable Development Bonuses; Streamlined Building Permits for Residential Solar Systems	X	X						
Portland	OR	Streamlined Building Permits for Residential Solar Systems		X						
Portsmouth	NH	Density Bonus for Private Projects	X							
Prince George's County	MD	Solar and Geothermal Residential Property Tax Credit			X					
Redmond	WA	Green Building Incentive Program		X						
Riverhead	NY	Energy Conservation Device Permitting Fees				X				
San Antonio	TX	Incentive Scorecard System			X	X				X
San Bernardino	CA	Green Building Program								X
San Bernardino County	CA	Green Building Program		X		X				

San Diego	CA	Sustainable Building Policy		X						X
San Diego County	CA	Green Building Incentive Program		X		X				
San Francisco	CA	GreenFinanceSF; Green Priority Permitting Program		X					X	
San Rafael	CA	Green Building Program		X		X				X
Santa Cruz	CA	Green Building Program		X						X
Santa Monica	CA	Priority Plan Check Processing for LEED Certified Buildings; Green Building LEED Grant Program		X				X		
Sarasota County	FL	Green Development Incentive Resolution; Green Building Program		X		X				X
Scottsdale	AZ	Green Building Program		X						X
Seattle	WA	Seattle Green Building Incentives - Commercial Grants; Density Bonus for LEED Silver; Living Building Pilot; Green Building Innovation Advisory Committee; Priority Green Expedited; Priority Green Expedited	X	X	X		X	X		X
Seattle City Light	WA	Built Smart Program						X		
Snohomish County PUD	WA	Green Building Incentives						X		
Solana Beach	CA	Green Building Incentives		X		X				X
Sonoma County	CA	Energy Independence Program (EIP)							X	
Sunset Valley	TX	Solar Water Heating Rebate Program					X			
Syracuse	NY	LEED-Certified Residential Tax Exemption			X					
Tampa	FL	Strategic Action Plan	X							
Tucson	AZ	Solar Fee Credit Incentive				X				
Ventura	CA	Green Building Policy		X						
Washington	DC	Green Building Incentives Program; Green Building Fund		X				X		X
West Hollywood	CA	Green Building Program	X	X						X
Wilmington	OH	Green Enterprise Zone; Green Enterprise Grant Program				X		X		

Appendix C: List of Interviews Conducted

NO.	NAME	ORGANIZATION	DESIGNATION
1	Leah Missik	Built Green	Program Manager
2	Jess Harris	City of Seattle	Priority Green Program Manager
3	Zack Semke	Passive House	Northwest Board of Directors
4	Timothy McDonald	Onion Flats LLC	President
5	John Miller	Haven Consulting	Principal
6	Anthony Roy	Earth Advantage	Director, Policy & Partnerships
7	Chris van Daalen	Northwest EcoBuilding Guild	Education Coordinator
8	Larry Giardina	City of Ashland	Conservation Analyst