

BARRIERS AND OPPORTUNITIES FOR LOW IMPACT DEVELOPMENT: CASE STUDIES FROM THREE OREGON COMMUNITIES

Godwin,* D.C.¹, Chan, S.A.², Burris, F.A.³

¹Oregon State University Extension Service, Marion County, 3180 Center Street NE Room 1361, Salem, Oregon 97301. ²Oregon Sea Grant, OSU campus, Corvallis, Oregon 97331. ³Oregon State University Extension Service, Curry County, 29390 Ellensburg, Gold Beach, Oregon 97444.

Oregon is nationally known for its bountiful natural resources and conservation-minded approach to land use development. However, it is anticipated that by the year 2030 Oregon's population will grow 40 percent (U.S. Census, 2000). Recent rapid population growth has challenged the ability of many communities to keep up with development pressures (for example, meeting infrastructure needs) without jeopardizing the long-term health of their local environment. In response to this need, Oregon State University's Extension Service (OSUES) and Sea Grant Extension Program (OSG) began exploring their potential role in helping communities manage growth and land use development in ways that promote the health of their economy and natural resources. Scoping workshops were held to increase awareness and understanding of low impact development (LID) designs and to assess the barriers and opportunities of implementing these designs in local communities.

For the purpose of this project, low impact development is defined as “a stormwater management strategy that emphasizes conservation and use of existing natural site features integrated with distributed, small-scale stormwater controls to more closely mimic natural hydrologic patterns in residential, commercial, and industrial settings” (Puget Sound Action Team, 2005).

Methodology – Community Workshops

OSUES and OSG conducted needs-assessment workshops with local decision makers and residents in three Oregon communities of vastly different populations—Portland/Metro, Grants Pass, and Brookings. The communities were chosen to represent a broad range in population, local government size, land use regulations and natural resources. Portland is the state's population center, with approximately two million people – roughly 57 percent of the state's population – in the greater metropolitan area. Grants Pass has a population of 30,390 and is located in the rapidly growing Rogue River Valley in southern Oregon. Brookings is a small, somewhat isolated community on the rugged and scenic southwest Oregon coast, just north of the California border. Brookings and the surrounding areas' population is approximately 10,000.

Local, state and national partners were enlisted to help deliver workshops using a “scoping” approach. Two faculty from the Nonpoint Education for Municipal Officials (NEMO) program, based in Connecticut, delivered an overview of the impact of growth and development on stormwater and water quality based on a variety of research-based

journal articles and research projects from around the U.S. They also included specific examples of how the national NEMO network has empowered local communities nationwide to address these issues using LID practices and natural resource-based land use planning. Following these presentations, audience input was sought from local decision makers and residents by asking two primary questions:

1. What are the biggest issues and barriers confronting your ability to plan and implement future development while minimizing impacts to water resources?
2. What education, training, or additional resources would help you address these issues, and to what audience(s) should these efforts be targeted?

State and local partners helped facilitate and record input from the 79 participants attending from the three communities. One facilitator asked the two primary questions and managed the conversation and input. A second person recorded oral input on flip charts, while a third person recorded the conversations on a computer. The facilitator also gathered supplemental written input on note cards from all participants. Using a variety of methods to gather input accommodated different communication styles and resulted in both high quality and quantity of input.

Local partners identified and invited the workshop participants to ensure a broad representation of interests linked to watershed management which included city, county and regional planners; representatives from the local engineering departments; planning commission members; watershed council members; developers; major landowners; and citizens that routinely engaged in local land use decision-making processes.

What we learned from communities: barriers and opportunities

The input received from these three communities was surprisingly consistent, despite their differences in size, location, and situation. The few differences encountered were primarily reflected of their varying geographic terrain (e.g. steep slopes versus flat valleys, and coastal sites versus inland). The following barriers and opportunities represent emerging themes expressed by the participants.

Theme 1 - Barrier: Lack of basic understanding of planning and the impacts of growth.

The most significant theme emerging from the workshops was a lack of basic understanding of the connection between today's land use and development decisions and tomorrow's consequences, in terms of both costs and resource quality. Neither the public nor local officials grasp the effects that individual planning decisions will have on infrastructure capacity, stormwater management, and water quality.

Theme 1 - Opportunities: Participants suggested several ways to increase basic LID fluency and better understand the impacts of growth on a community. One way is to employ computer-generated visualization tools to show various ways a community will develop over time and the associated consequences of planning decisions on the future of a community (i.e. build-out analysis). A second way is to hold a variety of forums to raise awareness of the social and environmental consequences of conventional development versus LID practices and to present research-based LID information. A third way is to

assist communities in analyzing the costs and benefits of incorporating LID practices into ordinances.

Theme 2 - Barrier: Need for active leadership. Participants expressed a need for strong administrative support and direction to incorporate LID practices into codes or to encourage developers to try LID projects. Local government staff persons felt it was unreasonable to expect them to deviate from normal practices without significant support from superiors. They also identified the need for coordinating education and outreach across jurisdictions (such as departments and governments) and between government (for example, public safety, planning, and health) and industry (developers, contractors, real estate professionals, landscapers, suppliers, etc.).

Theme 2 - Opportunities: Participants suggested the following educational methods and assistance to foster the needed leadership and teamwork to overcome these hurdles.

- forums on natural resource issues to inform political and industry leaders
- forums on the long-term “costs” of continuing traditional development versus incorporating LID techniques
- coordination of educational efforts and communication between local government and industry groups, and encourage consistent standards and enforcement among adjacent jurisdictions
- training for developers on incorporating LID techniques into affordable housing
- leadership and technical training to empower citizen advisory committees, planning departments, and local chapters of the Home Builders Association to address LID issues
- identify local champions (e.g. developers, contractors, consultants, planners) of LID techniques and use them in seminars to familiarize builders, the public, and community officials on LID techniques and encourage demonstration projects.

Theme 3 – Barrier: Need for technical information and assistance. Technical impediments to instituting LID practices included a basic unfamiliarity with low impact techniques and designs, and a difficulty in shepherding these designs through the local government approval processes.

Theme 3 - Opportunities related to technical resources and assistance. Participants requested introductory workshops, streamlined access to LID technical assistance, funding sources, technical assistance for demonstration projects, short- and long-term cost/benefit analyses, and suggestions on how LID practices might be adapted in special environments (low-permeability soils, steep slopes). To streamline local approvals of these designs, planning department participants requested help reviewing current codes and ordinances and creating new ones to support LID. They also requested information on funding and technical consultation to help them develop standards and become proactive in implementing LID. Participants suggested establishing a regional outreach position to assist local jurisdictions in educating builders on LID techniques and existing regulations, enforcing existing regulations, identifying incentives and new rules, and coordinating education and enforcement among adjacent jurisdictions.

Theme 3 - Opportunities related to incentives and disincentives. Participants recognized the need for facilitated discussions across disciplines to identify incentives for developers to incorporate LID techniques into their designs. They stated that LID designs would be easier for developers to implement if the codes and enforcement became more consistent among adjacent jurisdictions (for example, street and highway design). They also would like to address existing “disincentives” to developers from uncertain timelines of approval by establishing a known, streamlined process for approving LID designs.

Theme 4 – Barrier: Funding, economics, and incentives. Participants from local jurisdictions stated they do not have the staff or funding to develop, revise, and enforce new codes or regulations, or to educate builders and developers on LID techniques. They must rely on other entities or develop a funding strategy to pay for these efforts. Participants had several related questions, such as, “How can local governments generate the funding required to cover the “delayed” costs of growth to taxpayers, that is, demands on infrastructure (insufficiently sized roads, stream crossings, stormwater facilities, maintaining open spaces)?”, “Can a local government afford to offer financial incentives to developers to employ alternative designs?”, and “If the local public is educated on LID techniques and benefits, will it create the economic demand and incentive for green buildings and alternative development methods?”

Theme 4 - Opportunities: Participants suggested inviting people with experience to deliver presentations in a forum on the following topics;

- funding sources used in other jurisdictions to pay for infrastructure and open space associated with new development
- real costs of not fixing problems in existing and future infrastructure (for example, reduced water quality or quantity, limitations in water/sewer hookups, building moratoriums)
- differences in property values and public infrastructure costs between the status quo and LID methods of development
- short- and long-term values of “green development” designs, in terms of natural resource quality and infrastructure needs, and marketability for developers
- techniques to save money and resources while yielding a higher-value, more marketable finished product

Summary and broad appeal to Extension

The scoping workshops identified (1) the biggest barriers to planning and implementing future development while minimizing impacts to water resources (that is, adopting LID practices); (2) needs for education, training, or other resources on these issues; and (3) the audiences to which these efforts should be directed. Responding to such complex barriers and opportunities effectively requires partnership of many organizations. Oregon Extension faculty are using these scoping workshop results to develop funding proposals, programs to assist jurisdictions with several identified LID issues, and new partnerships among local, state and national organizations. For example, since this project was completed, Extension faculty have received \$265,000 in grants, applied for an additional

\$165,000, created several new partnerships and are working to create a new Extension faculty position to work on LID education programs.

Based on discussions with the National NEMO representatives and their coordination of their national network, these barriers and opportunities are very similar to communities around the United States. With this in mind, these results provide other Extension professionals a basis for initial program planning on low impact development education. A tool that is popular with University Extension Services nationwide is the “logic model”, which facilitates education program planning and evaluation with multiple team members (University of Wisconsin Cooperative Extension, 2003; Arnold, 2002). These results provide a basis for following the five basic steps used in the Logic Model: define the situation, identify and quantify inputs, describe outputs, project outcomes and design evaluations to measure outcomes.

This project also provides ideas on how to organize and facilitate scoping workshops on LID or other topics in communities. Since Extension faculty often work with focus groups and advisory groups, the specific questions can be modified to identify barriers and opportunities for addressing other land management issues such as water quality, water supply and fish habitat.

References

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