

GCSA Fact Sheet on LID Support – October 2013

INCOG NOTE: This Fact Sheet is an update to a May 2012 GCSA News Bulletin that listed the many Low Impact Development (LID) and Green Infrastructure (GI) activities in which INCOG participated or helped plan or sponsor, including special projects that INCOG completed on behalf of its GCSA members. The Post-Construction Minimum Control Measure (MCM) in OKR04 requires that the permittee “...implement strategies which include a combination of structural and/or non-structural BMPs...” OKR04 also requires that the permittee include in their nonstructural BMPs development of “education programs for developers and the public” about LID. The revised OKR04 is expected to contain additional requirements for educating developers and the public about LID and GI. For the past 6 years, INCOG has been involved with a variety of regional LID projects and programs on behalf of its GCSA members. This Fact Sheet can be attached to your Annual Reports and used during your ODEQ or EPA program audits to specify what actions have been taken to support your Post-Construction MCM requirements for education and training. More specific information about each topic can be obtained by contacting Richard Smith at INCOG, rsmith@incog.org, (918) 579-9450.

1. Coordination with Oklahoma State University LID Programs

Dr. Jason Vogel, Assistant Professor in OSU’s Biosystems and Agricultural Engineering, began a comprehensive LID and GI program just a few years ago. In that short time, he and others at OSU have established the most comprehensive LID and GI resource program in the state. The OSU LID website that presents this compilation of information is at: <http://lid.okstate.edu/>. INCOG has maintained a close working relationship with Dr. Vogel and other OSU and OU faculty on LID issues. Dr. Vogel has spoken many times at INCOG-sponsored meetings and conferences devoted to LID on behalf of GCSA. In addition, OSU has hosted many LID training classes. The OSU outreach programs target municipal employees, consultants, developers and the public on important aspects of LID and GI.

2. Lorman Seminars on Current Issues in Stormwater and LID

In April 2008, March and July of 2012, and March 2013, INCOG participated in four Lorman Education Services 1-day conferences focusing on stormwater rules, LID and the Post-Construction MCM. A 5th Lorman conference is scheduled for March 2014 in Oklahoma City. These 1-day conferences have drawn attendance largely from engineering consulting firms and the development community. In addition to INCOG’s presentations on LID and current issues in stormwater, other topics presented by ODEQ and consultants for Lorman have addressed ODEQ rulemaking, court decisions that affect the stormwater program, and technical information about construction BMPs and preparing Stormwater Pollution Prevention Plans (SWP3s). These Lorman conferences accomplish an important education and outreach activity to the development community on behalf of all GCSA members.

3. INCOG FY-07 604(b) LID Resources Project

Up to about 5 years ago, there were essentially no LID resources in Oklahoma, few actual projects, no comprehensive education venues, and no comprehensive understanding of the potential benefits of LID among the development community. In 2007, INCOG was awarded EPA 604(b) grant funds to consolidate information about LID in the INCOG area and statewide. This effort ran parallel with other LID-focused efforts in Oklahoma, such as OSU beginning their LID program under Dr. Jason Vogel, OU's continuing outreach and technical project development with developers in the Oklahoma City area, and the increasing need for LID information among stormwater permittees. Over two years, INCOG networked with many organizations, companies and agencies to compile a comprehensive description of resources and LID practices. The final project report was completed in 2010. The report described the efficacy of individual BMPs and where additional information could be obtained for each BMP type. Since its release, there have been many new developments in LID and GI in Oklahoma. The best single source for the latest information on LID is at the OSU LID website: <http://lid.okstate.edu/>. The INCOG LID project report is part of a growing comprehensive educational outreach to developers, consultants, citizens and municipal and agency staff on behalf of INCOG's GCSA members.

4. FY-09 604(b) and FY-05 319(h) Rain Gardens

In 2009, INCOG received an EPA grant to conduct 303(d) impairment assessment studies for 11 watersheds, many in GCSA member city limits. Part of this grant required that a tangible environmental project be completed, so INCOG elected to use a portion of the grant funds to construct 4 rain gardens as demonstration BMPs. Using 319(h) funds to purchase materials, INCOG worked with Dr. Kevin Gustavson of the Oklahoma Conservation Commission (OCC) and individual stakeholders to select the locations and specifications of each rain garden. Dr. Gustavson designed and purchased all rain garden supplies and coordinated the construction of each. INCOG hosted meetings, processed funds, assisted with sign assembly and rain garden construction and the first year's maintenance, and prepared a project report that contained technical information about each rain garden. These 4 rain gardens are now prominently displayed in public access areas for educational outreach on behalf of all GCSA members. More information about the rain garden projects can be obtained by contacting INCOG.

5. Resource Management Conferences in Tulsa

Since the early 1990s, INCOG has been involved with the planning of the annual Resource Management Conference (RMC) sponsored by the Tulsa County Conservation District (TCCD). Since 2000 the RMC has been mostly devoted to stormwater related topics such as rulemaking, construction impacts and effective BMPs, urban water quality pollution, standards, permitting to protect water quality, and more recently LID and GI. The last few LID-based RMC

conferences have featured speakers from EPA and national development organizations. INCOG has frequently provided speakers at RMC events on stormwater quality topics, and has exhibited the GCSA display board with a variety of GCSA logo items and brochures about the Phase II stormwater program and LID. The most recent RMC topics have been:

2007 – “Building a Greener Green Country: A Sustainable Approach to Development”;

2008 – “Going Green With LID”;

2009 – “Green Building with LID: What’s In It For You”;

2010 – “Green For Infrastructure and Builders”;

2012 – “OKR10 Stormwater Permit For Construction”.

The purpose of INCOG’s participation has been to provide opportunities for its GCSA members to meet OKR04 employee education requirements, provide education for the consulting and development community, and to generally increase awareness about LID within the GCSA membership area.

6. Broken Arrow LID Planning Committee

Beginning in 2008, the Broken Arrow Stormwater Manager and other city officials began a multi-year effort to develop city codes that would provide incentives to developers to utilize LID and GI methods. Broken Arrow created an advisory committee to help define LID incentive concepts, develop a code strategy applicable to Broken Arrow, review draft documents, and help promote the new city codes to other cities. Broken Arrow was the first city in Oklahoma to formally develop what has become a model approach for others to encourage LID in new development and re-development. INCOG and several other GCSA cities participated in this effort. City officials have given a number of presentations to conferences about the city’s success with developing an incentive-based program to encourage LID. All GCSA members have benefited by receiving practical knowledge about developing LID incentives, making code amendments, and having the development community educated about LID.

7. INCOG Hosting Conferences and Workshops

Over the past 10 years, INCOG has co-hosted and sponsored a number of local and state conferences and workshops on various stormwater permitting and water quality issues. Within the past three years, several of these have been devoted significantly to LID and GI. On November 11, 2009 INCOG hosted a one-day GCSA employee training workshop devoted exclusively to LID. Speakers from consulting firms and agencies discussed regulatory aspects of LID in stormwater permits, City of Tulsa’s stormwater management criteria manual, LID design, Kansas City’s 10,000 rain gardens initiative, and proactive watershed planning. On March 30, 2011 and again on November 7, 2012, INCOG co-sponsored two statewide Stormwater MS4 Conferences in Oklahoma City. Topics included the latest regulatory perspectives from EPA and ODEQ, establishing stream buffers, establishing an incentive-based LID program, construction BMPs, and new requirements under the recently revised OKR10 permit. While the primary

target audience of the Oklahoma MS4 conferences has been GCSA members and other stormwater permittees in Oklahoma, the development community and engineering / design firms are also invited, and exhibitors from engineering firms and BMP suppliers attend and display a variety of methods for on-site control of pollution in runoff.

8. INCOG's GCSA News Bulletins and Communications

Since the initial efforts to support its stormwater permitted membership in 2000, INCOG has continued to provide timely information via emails, fact sheets, brochures, and more recently in formal newsletters and news bulletins. These communications frequently address the latest information about LID and GI initiatives from EPA and ODEQ as well as many technical aspects of these programs. INCOG's frequent communications include the availability of webinars on LID, results of technical studies on the effectiveness of LID-based BMPs, the status of OKR04 permit revision changes that address LID in greater depth, EPA's recent push to encourage GI and LID for new development and redevelopment in future rulemaking, university level LID programs through OSU and OU, and the availability of a variety of documents on LID implementation and inspections. All of these frequent communications support GCSA employee training and education, and they keep GCSA members up to date on the most important aspects of their permit program requirements.

9. OSU Botanical Garden LID Project

In 2004, INCOG received 104(b)(3) EPA grant funds to establish the Oklahoma Stream Team (OST), a coalition of local, state and federal agencies to provide free resources to protecting streams in lieu of hardscape. In 2005, INCOG and OSU's representatives of the Botanical gardens met to begin a project to transform OSU's Botanical Garden facility into a showcase for LID and GI. Over the next two years, INCOG and its OST partners met with OSU staff to generate over 20 LID-related BMPs that could be built on the grounds of the OSU Botanical Garden. These included pocket wetlands for polluted runoff control, a roof garden on the future Education Building, rainfall capture from the building, natural stream bank stabilization and riparian corridor management to enhance wildlife habitat, porous pavement in the parking lot, several types of bioswales, and a variety of research and education amenities for students and the public, including linking the site pathways and educational kiosks to the City of Stillwater's public hiking and biking trail system for greater public access. In 2007, the OSU faculty developed the project into the Integrated Environmental Research and Education Site (IERES). Phase I has been completed, and additional funding for future construction phases are being pursued. The goal of these combined projects is to develop a comprehensive showcase for LID options that work for similar environments in Oklahoma. Dr. Jason Vogel at OSU is actively pursuing the expansion and completion of these projects as part of his statewide LID program. INCOG's role in this LID project has been to help coordinate the initial concept development of LID options for the site, and to enhance the education and outreach amenities for the public and development community on behalf of its GCSA members.

10. INCOG Presentations on LID at Meetings and Conferences

INCOG has given a number of presentations to organizations, workshops and conferences on LID topics. The purpose of these talks has been to educate GCSA members, other stormwater permittees, agencies and the development community on the latest regulatory requirements and technical aspects of implementing LID and GI. This outreach effort is provided by INCOG on behalf of its GCSA membership to help them satisfy their requirements to educate their employees and the development community about LID. The following is a list of INCOG's presentations since 2008 that included information about LID:

DATE	VENUE	PRESENTATION TOPIC
Jan-2008	American Society of Civil engineers	Low Impact Development in stormwater permits
Apr-2008	Lorman Stormwater Conference	Post-construction current issues
Aug-2008	Downtown Tulsa Lions Club	Low Impact Development in stormwater permits
Feb-2009	Muskogee City Council	Phase II stormwater permit and local ordinances
Sep-2009	Oklahoma Floodplain Managers Association	New developments in Phase II stormwater
Oct-2009	Oklahoma Municipal League	Treating stormwater and nonpoint sources
Nov-2009	GCSA Employee Training Workshop	Phase II LID requirements and INCOG's LID projects
Mar-2010	Muddy Water Blues Conference	Regional and current issues in stormwater program
Apr-2011	Oklahoma Water Environment Association	Future changes in stormwater permitting
Oct-2011	Oklahoma Water Research Institute	Future changes in stormwater requirements
Feb-2012	OML Water Summit	Water quality and stormwater permits
Mar-2012	Lorman Stormwater Conference	Current issues in stormwater regulation
Apr-2012	Oklahoma Floodplain Administrators Conf.	General Permits for Floodplain Administrators
Jul-2012	Lorman Stormwater Conference	Current issues in stormwater regulation
Sep-2012	OFMA Annual Conference	Why water quality is part of floodplain mgmt.
Oct-2012	Resource Management Conference	New EPA stormwater rulemaking
Nov-2012	Oklahoma MS4 Conference	New EPA stormwater rulemaking
Dec-2012	Urban Streams Workshop	New EPA stormwater rulemaking
Mar-2013	Lorman Stormwater Conference	Current issues in stormwater regulation
Apr-2013	OFMA Spring Workshop	Stormwater program changes
Aug-2013	Rogers County Builders Association	OKR04 and OKR10 LID and construction changes
Sep-2013	OFMA Annual Conference	Stormwater permit requirements

11. INCOG Support for LID Design Competition

INCOG is participating in planning activities for a unique event to be held in April 2014. A coalition of private and public sector representatives have organized as the Green Country Sustainability Forum (GCSF) to develop a design competition for LID in three urban categories: streets, commercial areas and residential areas. The process will be to solicit proposals from ad hoc design teams to examine potential sites from each of the three categories, develop LID-based designs for improvements to the project areas, and demonstrate the cost-effectiveness of the particular LID-based BMPs that they design. A review committee will select the best design for each category, and the winners of the competition will be announced at the end of an April 2014 LID Symposium in Tulsa. Dr. Jason Vogel of OSU is leading this effort; INCOG is assisting the Steering Committee with reviews of various document drafts and helping to plan the LID Symposium. A significant outcome of this effort will be to enhance the awareness and knowledge of LID and demonstrate the utility of employing LID in the Tulsa area. Dr. Vogel and the GCSF team are planning a first-class event for Spring 2014. This event will also benefit GCSA members in NE Oklahoma by furthering the outreach and education about LID, and attendance at the LID Symposium will provide for employee training.