Technical Memorandum 2
Evaluating the Role of Stormwater Utility Districts in the Implementation of Low Impact Development

Partners for the Connecticut Low Impact Development and Stormwater General Permit Evaluation

Connecticut

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FUSS & O'NEILL
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1 Background and Purpose

Stormwater utility districts are used to establish a dedicated revenue stream and alleviate the need to compete for general taxation revenues with other municipal programs. A dedicated funding source, such as a utility district, can provide an important advantage for communities that are attempting to routinely maintain and upgrade their stormwater infrastructure.

Stormwater utilities provide another key advantage. Utilities allow regional (e.g., municipal, county, watershed, etc.) management of stormwater on an ongoing basis. This is an area of limitation for low impact development (LID), which provides management on a site-by-site basis. Utilities may fill an important stormwater management role in that they overcome the limitations of site-by-site management and may help to implement watershed-based planning.

This summary is the first step in providing an evaluation of the benefits and disadvantages of utilities. There has already been some work done in Connecticut involving the assessment of stormwater utility feasibility. This summary incorporates information from those efforts. This along with examples of successful stormwater utilities elsewhere in the country form the basis of our assessment of whether stormwater utility districts currently make sense in Connecticut and if not, whether they could become viable in the future.

2 The Nature of Stormwater Utilities

2.1 What is a Stormwater Utility District?

In 2004, the Connecticut Office of Legal Research (OLR) was asked to determine whether or not "changes in state law [would be] needed to create a stormwater utility" (Frisman, 2004, p.1) (see *Appendix A* for OLR report). A necessary part of such a determination was to define a stormwater utility. In their determination, OLR defined a stormwater utility as "a special assessment district that imposes a user fee to fund stormwater management" (Frisman, 2004, p. 1).

At their legal base stormwater utility districts are just as OLR defined them; however, in practice their role can be quite a bit broader. In addition to revenue generation, they may provide all the functions of a fully realized stormwater management program such as:

- Infrastructure operation and maintenance
- Capital improvements (e.g., retrofits)
- Watershed management (e.g., TMDL implementation and management of sensitive (receptors)
- Design review
- Phase 2 implementation
- Technical assistance for the regulated community
- Technology demonstrations

- Public education and outreach
- Flood protection and management

The principal difference between a stormwater utility district and a typical municipally run stormwater management program is that a utility district has the authority to charge a user fee, which becomes a dedicated source of funding for its operations. This means that the utility district can act independently of the municipal politics and administration associated with the general fund and general taxation process.

2.2 What Might Stormwater Utilities do in Connecticut?

2.2.1 Connecticut's Current Status

Currently no stormwater utility districts operate in Connecticut (Frisman, 2004); however, in June 2007, Governor Jodi Rell signed into law Public Act 7-154, also known as the Municipal Stormwater Authority Pilot Program. This law allowed for grants for up to four communities interested in examining stormwater utility districts. It also allowed for the formation of such districts by participating communities within their municipal boundaries if stormwater utility districts were desired upon completion of the grant studies.

Three communities opted to participate in this program—New Haven, Norwalk, and New London. Based on review of an interim draft report (January 2009), each community has considered a utility district to assist with implementation of Phase 2 Stormwater and other stormwater management issues such as flooding and upgrade of aging infrastructure. Of the three, New Haven is the only community that has expressed a clear interest in forming a district; however, New Haven also indicates that such a district is not fiscally practical without regionalization. As described on page 5 of the *Stormwater Pilot Program Interim Report*:

> The preliminary findings indicate that it is advantageous for the City [of New Haven] to move forward with establishing a user fee system for stormwater management under one or more of the available organizational structures. The user fee system provides an opportunity to equitably allocate costs to users, establish accountability, provide focused management for the stormwater program, develop and implement a better capital improvement program, facilitate public education and participation, and improve level of service and environmental compliance. The City, however, recognizes that the ability to provide a fiscally-responsible means to balance the goals of stormwater management and a cleaner Long Island Sound is predicated in large part on regional cooperation and participation. Management of the stormwater issues impacting the City and the Long-Island Sound is best accomplished on a water-shed basis that does not recognize municipal authority boundaries. Moreover, without participation of the upstream entities, the impact to the receiving waters may be offset by the continued introduction of contaminants from upstream regions. Thus, the issue of watershed-based authorities should be given careful consideration in order to provide maximum impact to the receiving waters.

The City is proceeding with additional analysis and stakeholder meetings to identify the best organizational structure and user fee implementation program to address the City's anticipated stormwater management program needs.

(Malcolm Pirnie (Interim Draft), 2009)

2.2.2 Implementation in Other States

Since no stormwater utility districts currently operate in Connecticut and it is uncertain how they might work here, this report looks outside Connecticut to examine stormwater utilities in other parts of the country. Some examples of activities carried out by stormwater utility districts in other parts of the country include:

- Operation and maintenance of stormwater infrastructure.
- Retrofit of stormwater infrastructure.
- Watershed management related to stormwater issues, including total maximum daily load (TMDL) implementation.
- Drainage design review for permitting purposes.
- General permit (i.e., Phase 2 Stormwater) implementation.
- Technical assistance programs for drainage design and stormwater management enhancement.

The following table was compiled based on a search of web-available information on stormwater utility districts in other states. The table shows some common uses for stormwater utility districts and the implementation focus of seven communities in seven states.

Table 1
Features of Seven Stormwater Utility Districts

	Operation & Maintenance	Capital Improvement (e.g., Retrofits)	Watershed Management & TMDLs	Design Review	Phase 2 Implementation	Technical Assistance	Demonstration Projects	Public Education	Flood Management
Alexandria, VA	•	•	•	•	•			•	•
Northeast, OH	•	•	•		•	•	•	•	•
Volusia County, FL	•	•		•					•
Peachtree City, GA	•	•							
Symrna, TN		•	•		•			•	•
Newton, MA	•	•						•	•
S. Burlington, VT	•	•		•	•	•			•

2.2.3 The Concept and Potential Benefits of Regionalization

Regionalization refers to the implementation of a single stormwater management program or stormwater utility district in a group of municipalities (e.g., county level, watershed level, etc.). Such an approach may be excluded under current Connecticut state law. However, from an efficacy and environmental standpoint, capacity to regionalize represents a key element of the stormwater utility district concept. Regionalization realizes economies of scales in program implementation and allows watershed-based implementation. Why are economies of scale and watershed-based management important?

- *Importance of economies of scale*
  Municipalities currently struggle to set aside funding for stormwater management. This is largely due to the competition for scarce tax dollars available in the general economy. While a user fee system such as a stormwater utility district eliminates this competition, it does not make the pool of funding in the general economy any less scarce. Simply put, expanding stormwater management services will increase cost and that burden will be transferred to entities in the utility service area. However, this cost burden may be reduced—or perhaps even eliminated—by improving the efficiency of the existing institutional structure under which services are provided. Regionalization is one tool for improving institutional efficiency because it allows for shared use of labor, equipment and capital resources.

- *Importance of watersheds as a unit of management*
  Because the surface water features and stormwater runoff within a watershed ultimately drain to other bodies of water, it is essential to consider these downstream impacts when developing and implementing water quality protection and restoration programs such as stormwater utility districts. Regionalizing stormwater management using watershed as the basis for identifying the service area facilitates watershed-based programs.

2.3 How Might Stormwater Utility Districts Help to Implement Low Impact Development?

LID represents a shift in the existing paradigm of stormwater management. To make this shift effectively will require that developers and other on-the-ground implementers receive significant support. Such support may need to be both technical and financial in nature.

- *Subsidies for LID demonstration*
  Initial attempts to use LID may be sidelined by the market demand for inexpensive stormwater management. However, initial costs likely reflect a learning curve rather than the real cost of using LID. A utility, set up to provide the public good of effective stormwater management, could subsidize LID demonstrations and help to overcome

the learning curve. Could this same subsidy happen through general taxation revenues? Of course it could, but such a subsidy is much less likely to occur in a financial climate that pits it against other general municipal needs (e.g., education).

- *Operation and maintenance*
  A frequent objection to the use of LID is the concern of how to maintain LID practices. Municipal public works departments often struggle to find the resources needed to maintain conventional infrastructure. Newer approaches like LID present the challenge of learning to deal with something new and different. Stormwater utility districts, which specialize in stormwater management, could fund LID operation and maintenance training to DPWs or could fund maintenance services. Also the design review process could be used to ensure appropriate design and adequate access for LID operation and maintenance. For example, in some areas where LID has been implemented, LID integrated management practices (i.e., structural best management practices (BMPs) such as bioretention) must be installed in common spaces to facilitate access.

- *Technical assistance in designing and installing LID*
  Because stormwater utilities specialize in stormwater, they could afford to fund specialty services in LID. These services could include assistance in effective LID design and installation.

- *Retrofits for water quality improvement*
  Recent focus on stormwater as a source of impairment to waters of the state has created a bourgeoning need for enhanced stormwater pollution abatement. LID is an increasingly important tool for retrofitting storm drain systems that lack effective treatment practices. Because stormwater utility districts exist to manage stormwater, they are ideally suited to efficiently implement LID retrofits.

2.4 What are the Disadvantages of Stormwater Utility Districts?

Along with their advantages, stormwater utility districts bring a number of significant disadvantages. These disadvantages may be of particular importance for established communities such as those in many areas of Southern New England where residents have become accustomed to a particular way of life and cost of living. As of 2008, the US Environmental Protection Agency found that 800 stormwater utility districts had been implemented countrywide. In New England, five such districts exist:

- Chicopee, Massachusetts
- Lewiston, Maine
- Newton, Massachusetts
- Reading, Massachusetts
- South Burlington, Vermont

(EPA, 2008)

Each of these districts formed in response to a significant environmental concern. In many cases stormwater utility districts are unable to gain political traction without the presence of an urgent water quality concern. For example:

- Chicopee, Massachusetts formed a stormwater utility district following enforcement action by EPA. EPA suggested that the city form a district to ensure revenues needed to address stormwater issues.
- Lewiston, Maine formed a stormwater utility district to address impairment to Hart Brook.
- Newton, Massachusetts formed a stormwater utility district to address impairment to the Charles River.
- Reading, Massachusetts formed a stormwater utility district to address impairment to Ipswich River, which dries out each summer as a result hydrologic impacts due to development.
- South Burlington, Vermont formed a stormwater utility district to address nutrient impairments to Lake Champlain.

Commonly cited perceptions regarding disadvantages of stormwater utility districts include the following:

- *Increased bureaucracy*
  Stormwater utilities represent new and additional government. Government presents inherent inefficiencies. If utility districts are given development review authority such reviews will add to permit review times and will add uncertainty to the land development process.

- *New fees perceived as taxes*
  Although a fee-for-service is not a tax, utility district fees are often viewed as new taxes. Those in opposition may refer to a utility district fee as a "rain tax." This concern is understandable. Implementation of a utility district fee is not typically accompanied by a commensurate decrease in general tax and thus represents an increase in the cost of landownership.

- *Basis for fees is unclear and, therefore, arbitrary*
  A common approach for establishing stormwater utility district rates is to base them on area of impervious surface; however, the general public often has difficulty understanding the concept of impervious surface and grasping the link between it and stormwater management.

- *Utilities are politically untenable*
  Whether or not deserved, the perception of utilities as increasing bureaucracy and tax burden creates a natural opposition to them in the voting public. Overcoming such opposition may be politically infeasible in many communities. Elected officials are well aware of the political risk around stormwater utilities and many times won't even entertain sponsoring or supporting them.

- *May require a significant public campaign to generate support*
  Since the concepts of stormwater management are often viewed by the general public as complex and esoteric; and since the new fees associated with a utility district are generally unpopular, establishing a stormwater utility district typically requires a public education campaign and significant patience on the part of utility district proponents.

3 When Should Stormwater Utilities be Considered?

3.1 To a Large Extent, Financing Follows Function

The multifaceted nature of most stormwater management programs may call for a diversified funding approach including grants, loans, and a revenue stream such as general taxation proceeds or revenues from a fee-for-service such as a utility district. Typical categories of stormwater management program function include:

- General administration such as clerical and personnel support functions.
- Financial management such as debt service, revenue management and accounting functions.
- Planning, which include program planning, special infrastructure studies and water quality management planning.
- Engineering including functions such as infrastructure project management, drafting and design work.
- General operations such as routine maintenance.
- Regulation including permitting and enforcement.
- Capital improvement including planning for system expansion and major retrofit initiatives.

The functions of a stormwater program determine which funding approaches make sense. For example, while grants may make sense for financing special projects, they are inappropriate for funding operation and maintenance programs or as the sole source for infrastructure improvement due to their limited and uncertain availability. Bonds make an excellent financing option for infrastructure improvement, but are typically not acceptable for staff and routine operation costs. Service fees and special taxes present strong funding mechanisms for predictable costs such as operations and labor, but work less well for funding or unanticipated costs associated with special projects.

3.2 More Than One Approach May Work

A wide variety of options exist to fund stormwater management. Treadway (2000) breaks these down into two categories—primary and secondary—which refers to the flexibility of their potential application. The methods are summarized in *Table 2*, below.

Table 2
Categories of Stormwater Financing Methods

Category	Financing Method	Typical Use
Primary—Characterized by maximal application flexibility	General fund Utility funds/fees for service	General operations, administration and finance management
Secondary—Characterized by use restrictions and conditions	Impact fees Development review fees Permitting fees In-lieu-of fees	Offset for externalities of development
	Grants Bonds Special assessments	Capital improvements and special projects

Source: Adapted from Treadway (2000).

Municipalities currently use a variety of specially designated fees to offset the municipal costs associated with reviewing development projects and their long-term impacts. The subdivision review process is a good example.

Many municipalities also access grants, bonds and may establish special assessments on an as-needed basis to fund capital improvement and special projects. Good examples of sources of funding for special projects include DEP's Nonpoint Source Management Program and the State Revolving Fund.

Connecticut communities rely heavily on general revenues to fund stormwater management operations. General funds provide a clear advantage over utilities districts and fees-for-service as the mechanisms to acquire these revenues already exist and enjoy well-established public acceptance. Notwithstanding, reliance on general funds presents a significant disadvantage in that their user-programs must compete to gain access. Funding competition typically results in constrained and somewhat unreliable budgets and can hamper compliance with regulatory requirements such as those under Phase 2.

Stormwater utility districts can be used to established a dedicated revenue stream and alleviate the need to compete for funding with other municipal programs, but does a district make practical sense? *Table 3* provides a comparison of the advantages and disadvantages of financing through general revenues and utilities.

Table 3
Practical Considerations Related to
General Taxation and Utility Fees as Sources of Revenue for
Stormwater Management

	General Fund Revenues	Stormwater Utility
Political Acceptance	Many competing programs for a resource limited by the will of the elected officials to impose taxes	Required community support and the political will to create a new funding source based on fees
Equity or Cost/Benefit	Impacts only those who pay general fund revenue sources, and is not related to the cost of services	Fee for services received and imposed on all those who contribute to need for services.
Feasibility	Political will is needed to ensure consistent funding. Funding may be subject to political cycles	Requires mechanism for billing fees and administering utility. Statutory authority plays a critical role
Administration	System must be in place to dedicate proceeds from the general fund and to ensure funding integrity	Once rate base and billing file is created, relatively easy to maintain
Legal Structure	Typically allowed and functioning already	Need to verify that authority exists, and if not, authority must be obtained
Funding Level	Must compete with other priorities of the organization for operating and capital expenditures	Dedicated source of funds for program, allowing the use of fees for debt payment, operating costs, and capital improvements

Source: Adapted from Treadway (2000).

3.3 Adequacy of Potential Funding

If the cost of managing stormwater exceeds the funding realistically available from the general fund, municipalities may need to default to the implementation of a user fee.

Studies conducted on municipal stormwater programs indicate a wide range of potential cost. USEPA's "Funding Stormwater Programs" fact sheet indicates costs from about $8.00 per single-family property per year to about $160.00 with and average cost of $44.00 depending on programmatic make-up (USEPA, 2009). This fact sheet also gives a general context for stormwater management fees in the New England area. In 2008, Newton, Massachusetts single-family homeowners are charged $25.00 per year. In Burlington, Vermont single-family homeowners are charged $56.00.

How should a municipality estimate the overall cost of managing a future stormwater management system? There are many methods. Some include estimation based on model programs, surveying other community programs, and applying cost algorithms. *Table 4* provides an alternative method of estimating stormwater management costs based on acres served by the stormwater management program.

Table 4
Typical per Acre Costs of Stormwater Management Programs
Based on Level of Implementation

Program Level	Program Cost per Acre Served per Year[b]	Typical Program Features
Incidental	$20 - $40	Reactive incidental maintenance, and regulation as part of other programs
Minimum	$40 - $80	ADD[a]: right-of-way maintenance, better regulation and inspection, more staff, and erosion control
Moderate	$80 - $120	ADD: additional maintenance programs and levels of service, better regulation and inspection, some planning, minor capital programs, and general upgrade of capabilities
Advanced	$120 - $200	ADD: maintenance (of some sort) of the whole system, master planning, regional treatment, some water quality, data collection, multi-objective planning, strong control of development and other programs, and utility funding
Highly Advanced	Over $200	ADD: Stormwater quality, advanced flood control, advanced levels of service for maintenance, aesthetics become more important, and public programs

Notes:
a "ADD" means to add on this stormwater management feature to the features shown in the above column cells.
b Adjusted from original to 2009 dollars assuming 3% per year cost increase.
Source: Adapted from Treadway (2000).

Regardless of the method used, municipalities should carefully consider that these approaches provide rough cost estimates. Though they provide a good starting point, actual costs may vary substantially from these estimates.

4 What Authority Exists in Connecticut to Implement Stormwater Utility Districts?

Although Public Act 7-154 provides the authority for three Connecticut municipalities to form stormwater utility districts, general authority for municipalities to implement stormwater utility districts may not be present in state law. In 2004, the question of whether such authority existed was posed to OLR. An excerpt from their response to this question is provided below:

> State law does not now explicitly authorize the creation of municipal stormwater districts, although the law does authorize towns to operate and maintain sewer and drainage systems, and to regulate the flow of surface water in some circumstances (CGS §7-148(c)(6)(B)). The law also permits municipalities to establish WPCAs, which also may regulate the flow of stormwater in certain instances (CGS § 7-247).
>
> To eliminate any doubt about municipal authority to create such a district, the legislature might wish to specifically authorize the formation of such a district. The legislature could authorize creation of independent stormwater utilities or permit existing

> municipal boards, such as WPCAs [Water Pollution Control Authorities] (CGS § 7-245 *et seq.*) and Municipal Flood and Erosion Control Boards (CGS § 25-84 *et seq.*) to assume the duties of a stormwater utility. It may also wish to consider authorizing several municipalities to join in a regional stormwater utility district.
>
> (Frisman, 2004, p. 2)

As discussed above in Section 2.1, the essence of a stormwater utility district rests in its ability to assess a fee-for-service for the full cost of operating a storm sewer system, allowing financial independence from municipal general funds. The State of Connecticut currently allows WPCAs to make assessments of benefits for:

> A proportionate share of the cost of any part of the sewerage system, including the cost of preliminary studies and surveys, detailed working plans and specifications, acquiring necessary land or property or any interest therein, damage awards, construction costs, interest charges during construction, legal and other fees, or any other expense incidental to the completion of the work.
>
> (CGS § 7-249)

This does not explicitly include administration or operation and maintenance. In fact, it would appear to focus on costs associated with initial system installation only. At a minimum, a specific legal opinion should be sought to clarify OLR's findings. Ideally, local authority to establish utility districts should be clarified in the Connecticut General Statutes. The authority regionalize such services should also be considered as discussed above in *Section 2.2.3*.

5 Input from Partners on Stormwater Utilities

The degree to which stormwater utilities will be implemented depends largely on the desire of local agencies to implement. The following sections discuss information that has been gathered from the partners on the use of stormwater utility districts through the use of workshops and individual interviews. This section also provides observations from the interview and workshop process. This information can be used as a starting point in determining the level of interest in stormwater utilities at the local level.

5.1 Interviews

As part of our overall study to evaluate low impact development, we have conducted 27 interviews with partners on this project. A discussion of the interviews and the interview process is provided in a document entitled "Summary of Partner Interviews."[1] These interviews addressed a wide range of topics regarding the use and implementation of low impact development. Part of the interview specifically related to stormwater utility districts and included the following question:

[1] At the time that "Summary of Partner Interviews" was developed, we had conducted 17 interviews. We have conducted an additional 10 interviews since this time. All 27 interviews will be summarized in our first technical memorandum (release pending).

> In some states stormwater utility districts charge a fee for service to oversee BMP design review, installation, operation and maintenance. What do you think of the idea of using stormwater utility districts as a regulatory device?

This question presented some challenges for use in the interview. Interviewees had varying levels of familiarity with the concept of stormwater utilities. This may have biased some responses and in at least two interviews led to responses of "unsure" or "no response." When respondents appeared unfamiliar with stormwater utilities, the interviewer explained their application. Another issue with this question, which may have led to less than clear responses, is the fact that most people, who are familiar with utilities, are familiar with them as revenue generating devices, not as a regulatory device. A number of respondents answered the question with a statement such as "I've never considered using utility districts in that way."

Table 5 presents a summary of interviewee responses to the idea of using stormwater utility districts as regulatory devices. Virtually all interviewee responses were qualified in some way. This included all the "yes" responses, all but two "maybe" responses, and all but one "no" response. One respondent noted that there was specific interest for implementation of a utility district in that respondent's region, but that actual implementation was unlikely due to political issues.

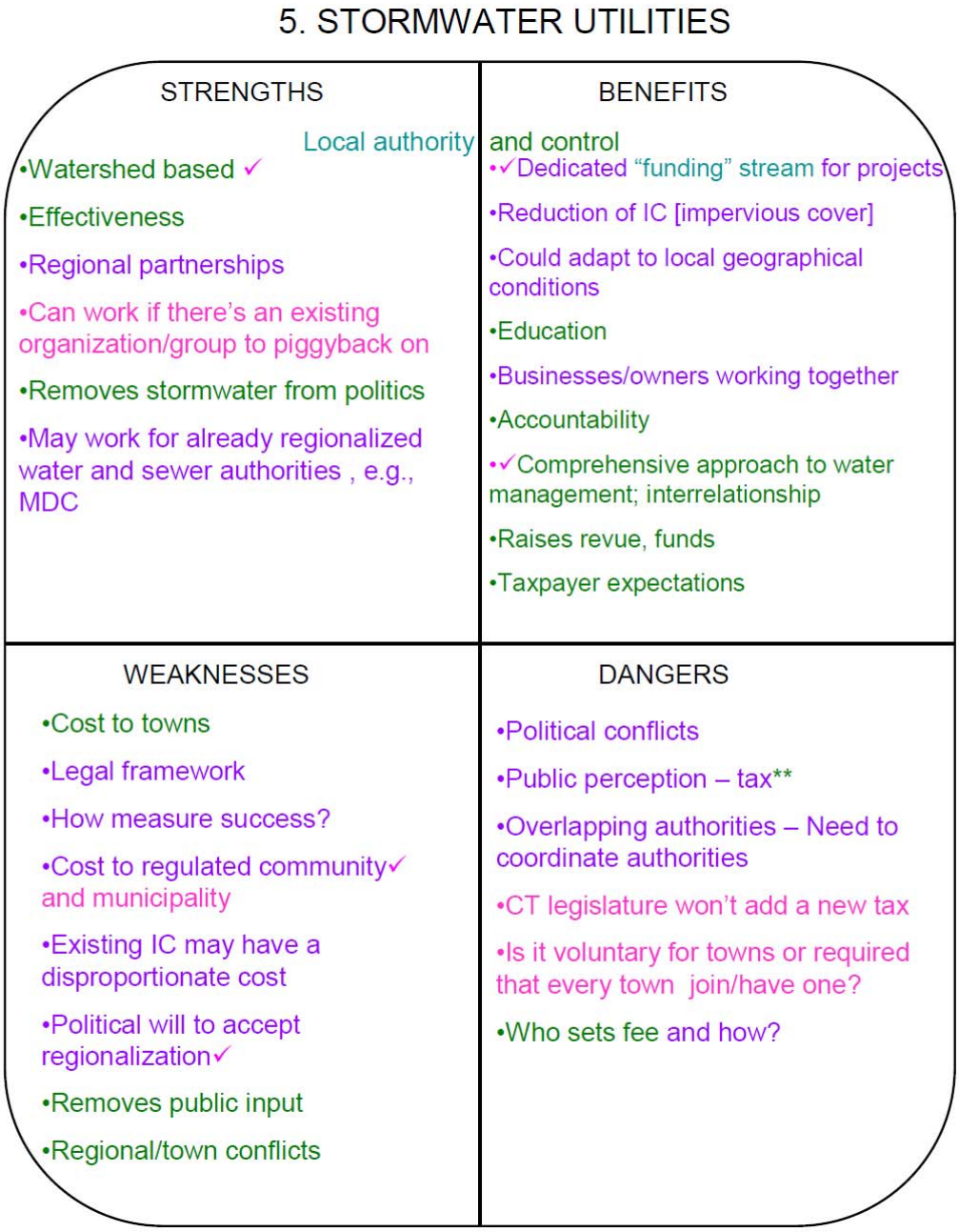
Table 5
Interviewee's Response to the Question
"Should we use Stormwater Utility Districts as a Regulatory Device?"

Should we use Utility Districts as a Regulatory Device?	Number of Responses	Percentage of Responses
Yes	5	19%
Maybe, Not Sure, etc.	5	19%
No	7	26%
Politically Unlikely	6	22%
Unnecessary Government	8	30%

5.2 Workshop 2

The Low Impact Development and Stormwater General Permit Evaluation project includes a series of workshops. Workshop 2 (July 1, 2010) focused in part on the use of stormwater utility districts to enhance LID implementation. Workshop 2 included a carousel workshop to address the strengths, weaknesses, benefits and dangers of five implementation alternatives. Stormwater utility districts were one of the five implementation alternatives. A full summary of the carousel workshop is provided in *Appendix B* of this report *Workshop 2 Meeting Summary* dated July 12, 2010.

Below is the resultant list of strengths, weaknesses, benefits and dangers for the use of stormwater utility districts. We have intentionally left the wording, use of colored text, and use of symbols that participants provided during the workshop.



5.3 Observations from Interviews and Workshop 2

This section discusses general observation from the partner interviews and Workshop 2 exercises. Generally, there appears to be a broad range of perceived positive and negative aspects associated with stormwater utility districts. We offer the following observations:

1. Based on the interviews, there is an approximately even split on whether stormwater utilities should be used as regulatory devices; however, interviewee responses lean somewhat against the idea or unsure about it.

2. A significant percentage of interviewees think stormwater utility district implementation is politically unlikely.

3. Existing regional authorities, such as the MDC, were suggested as an implementing agency. If enabling authority to implement exists in regional agencies, this would overcome the issue of uncertain enabling authority at the municipal level. It may also sidestep some of the political concerns.

4. Certain aspects of stormwater utility districts present contrarily as both strengths and weaknesses. For example:

    - "Watershed based" is listed as, a strength while "regionalization" is listed as a weakness.
    - "Removes stormwater from politics" is listed as, a strength while "political conflicts" is listed as a weakness.
    - "Raises revenue" is listed as a benefit while "public perception—tax" is listed as a danger.

5. Several yet-to-be-answered questions were raised about stormwater utility districts during the workshops:

    - How do we measure success?
    - Who sets stormwater fees and how?
    - Are they [stormwater utility districts] to be voluntary or required?

6 Next Steps

Stormwater utility districts create a dedicated funding source to carry a wide variety of stormwater related functions. Having a consistent funding source can significantly improve the efficacy of stormwater programs, particularly if the programs are carried out at the regional level, where proper focus can be applied on a watershed basis and valuable economies of scale may be realized.

Issues to Review

Despite their benefits stormwater utility districts are not viable in every political and administrative circumstance. *Table 2* in *Section 3.2* of this technical memorandum lists a series of issues to review when considering whether or not stormwater utility districts make sense. Through interviews and workshops, the partners on this project have essentially identified four of these as significant concerns:

- Political acceptance—Questions exist as to the political likelihood of being able to pass stormwater utility district ordinances at the local level.

- Legal structure—Analysis by OLR and analysis done for Public Act 7-154 grants indicates that the legal structure does not currently support regional stormwater utility districts and may not support individual municipal stormwater utility districts.

- Equity—Questions exist as to how a fee-setting structure would be implemented.

- Bureaucracy—A number of partners have expressed concern that municipal stormwater utility districts will add bureaucracy and "new layers" of government.

Possible Ways to Address These Issues

For stormwater utility districts to make sense these issues will need to be addressed.

- One possible way to address some of these concerns is to implement stormwater utility districts through existing regional authorities such as regional planning agencies or water utilities, wastewater authorities, fire districts, etc. If following this approach is desired then legal research should be conducted to determine legal feasibility. These regional entities may or may not have existing authority and capacity to implement stormwater utilities. Significant capacity building may also need to be conducted. For example, regional planning agencies would need to develop or partner to acquire the on-the-ground capacity needed to implement a stormwater utility district.

- For stormwater utility districts to work at the municipal level, they will, at a minimum, require clear enabling authority at the state level. Ideally, such authority should allow for regionalization. Municipalities would also need to establish local authority (i.e., through a municipal ordinance) as well as administrative capacity.

Concepts to be Developed

Prior to pursuing stormwater utility districts at any governmental level, fee-setting and bureaucratic structure should be addressed. It may be helpful to develop a model stormwater utility district ordinance and guidance manual for utility district development and implementation in Connecticut. Ideally, the following concepts should be developed:

- A clear and simple fee-setting structure. Will these be new fees added to existing fees and taxes already paid? Will these fees be offset by a commensurate reduction in taxes and fees already paid? How will these fees be calculated? If such a fee-setting structure is developed in the context of a statewide subcommittee, it may have a better chance of addressing the full range of issues it will be tested against. Endorsement by a statewide committee may also give it broader support.

- An agreed-upon bureaucratic and administrative structure. Will this structure be that of a wastewater authority or water commission, for example, with the necessary full-time manpower, infrastructure and equipment? Will this structure minimize the bureaucracy and be a contracted out service, much as waste hauling is for some municipalities? Will

such programs be administered through existing town governance or through a separate body? What regulatory authority will be delegated to a regional utility district from the state and municipalities in the service area? Again, if such a structure is developed in the context of a statewide subcommittee, it may gain greater support and more fully address key issues.

- A process to build public understanding and acceptance. How will municipalities know if they have the level of public acceptance necessary to establish a stormwater utility district? What is the most effective way to educate the general public about the nature and benefits of stormwater utility districts? Research for this technical memorandum identified public awareness and support as key issues in establishing successful stormwater utility districts. A statewide committee could help to develop a program of education and outreach that could be customized for local implementation.

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FUSS & O'NEILL

Appendix A

ORL Research Report
Stormwater Utilities

Storm Water Utilities
2 of 10 document(s) retrieved

OLR RESEARCH REPORT

December 8, 2004 2004-R-0895

STORM WATER UTILITIES

By: Paul Frisman, Associate Analyst

You asked about the changes in state law needed to create a storm water utility. The Office of Legal Research is not authorized to issue legal opinions and this memo should not be considered one.

SUMMARY

A storm water utility is a special assessment district that imposes a user fee to fund storm water management. According to the Department of Environmental Protection (DEP), there are no storm water utilities in Connecticut, although Stonington is researching the issue.

Municipalities have only those powers granted to them by statute. State law does not now explicitly authorize the creation of municipal storm water districts, although the law does authorize towns to operate and maintain sewer and drainage systems, and to regulate the flow of surface water in some circumstances. The law also permits municipalities to establish Water Pollution Control Authorities (WPCAs), which also may regulate the flow of storm water in certain instances.

If the legislature wishes to encourage the creation of storm water utilities, it would probably be best to specifically authorize the formation of such a district. The legislature could authorize creation of independent storm water utilities or permit existing municipal boards, such as WPCAs and Municipal Flood and Erosion Control

Boards, to assume the duties of a storm water utility. The legislature also may wish to consider permitting several municipalities to join in a regional storm water utility district.

The ability of a particular municipality to establish a storm water utility also would depend on that town's own charter or ordinances.

BACKGROUND ON THE STORM WATER PROGRAM

Polluted storm water runoff is a leading cause of impairment of the nearly 40% of surveyed water bodies that do not meet federal water quality standards, according to the U. S. Environmental Protection Agency (EPA). Polluted runoff can destroy fish, wildlife and aquatic life habitats; threaten public health; and reduce aesthetic values. The National Pollutant Discharge Elimination System (NPDES) addresses the discharge of storm water from non-agricultural sources in two phases.

NPDES Phase I

Phase I regulates medium and large municipal separate storm water systems (generally serving populations of 100,000 or more) and nearly a dozen categories of industrial activity, including construction activity that disturbs five or more acres. According to DEP, Stamford was the only Connecticut city regulated under NPDES Phase I, which took effect in 1992.

NPDES Phase II

Phase II regulates small municipal separate storm sewer systems, and construction activity disturbing between one and five acres. DEP says 113 state municipalities fall under Phase II. These municipalities have until 2009 to implement storm water management programs that contain at least the following six control measures: (1) public education and outreach; (2) public participation; (3) illicit discharge detection and elimination; (4) construction storm water management; (5) post-construction storm water management; and (6) pollution prevention (also called “good housekeeping. ”)

DEP issued a Phase II General Permit (attached) in January 2004. More information on this permit and its requirements is available at http: //www. dep. state. ct. us/wtr/stormwater/ms4index. htm

WHAT IS A STORM WATER UTILITY?

A storm water utility is a special assessment district that generates funding specifically for storm water management. It generates revenue through imposition of a user fee rather than a property tax. According to this article in the *Journal for Storm Water Quality Professionals*, the user fee can be used to support and maintain existing storm drain systems, development of drainage plans, flood control measures and water quality programs, administrative costs, and sometimes construction of major capital improvements. One advantage of a storm water utility is that its costs are borne only by people who benefit from it. Further information on storm water utilities can be found in this Natural Resources Defense Council report.

For this report we look only at state statutes that permit a municipality to raise revenue through user fees, also called benefit assessments. We do not consider special taxing districts that raise revenue through property taxes. For more information on these special taxing districts, please see OLR Reports 98-R-0335 and 2003-R-0825, attached.

STATE LAW AND THE CREATION OF STORMWATER UTILITIES

State law does not now explicitly authorize the creation of municipal storm water districts, although the law does authorize towns to operate and maintain sewer and drainage systems, and to regulate the flow of surface water in some circumstances (CGS § 7-148(c)(6)(B)). The law also permits municipalities to establish WPCAs, which also may

regulate the flow of storm water in certain instances (CGS § 7-247).

To eliminate any doubt about municipal authority to create such a district, the legislature might wish to specifically authorize the formation of such a district. The legislature could authorize creation of independent storm water utilities or permit existing municipal boards, such as WPCAs (CGS § 7-245 *et seq.*) and Municipal Flood and Erosion Control Boards (CGS § 25-84 *et seq.*) to assume the duties of a storm water utility.

It may also wish to consider authorizing several municipalities to join in a regional storm water utility district.

Water Pollution Control Authorities (WPCA)

Under CGS § 7-246(a) a municipality may designate as a WPCA a new or existing board, commission, or (except in town meeting towns) its legislative body. Among other things, a WPCA may:

- acquire, build and operate a sewer system;
- buy, condemn or otherwise acquire property it needs for a sewer system; and
- devise rules and regulations to operate and maintain the sewer system, including regulating or banning the discharge of any sewage or storm water runoff that may adversely affect it (CGS § 7-247).

State law also requires municipalities to establish WPCAs, regardless of any state law or local ordinance, when the DEP orders it to abate or control water pollution (CGS § 22a-458).

Assessment of Benefits

A WPCA may levy benefit assessments upon owners of land and buildings especially benefited by the acquisition or construction of a sewer system, regardless of whether the property abuts the system. The assessment may include a proportionate share of the cost of any part of the sewer system, including the cost of (1) preliminary studies and surveys, (2) detailed working plans and specifications, (3) acquiring land, property or any interest in them, (4) damage awards, (5) construction costs, (6) interest charges, (7) legal and other fees, and (8) any other expense incidental to the work. The WPCA may divide the territory benefited by the system into districts and levy assessments differently in each district.

In assessing benefits, the WPCA may consider the area, frontage, grand list valuation, and present or permitted use or classification of the benefited properties, and any other relevant factor. It must use assessment revenue only to acquire and build the sewer system, or for the payment of interest and principal on bonds or notes issued to finance its acquisition or construction. A WPCA may not levy an assessment for more than the benefit that accrues to the property (CGS § 7-249). OLR Report 95-R-1148, attached, contains more information on sewer assessments.

Flood and Erosion Control Boards

A municipal Flood and Erosion Control Board may plan, lay out, acquire, construct,

reconstruct, repair, maintain, supervise, or manage a flood or erosion control system. It may buy or condemn property it needs for such a system (CGS § 25-86), and finance it by issuing bonds, levying taxes, imposing special assessments, or any combination of these (CGS § 25-87).

Special Assessments

If a board elects to impose special assessments, it may divide the assessments among the owners of lands and buildings that especially benefit from its services, regardless of whether the property abuts the flood or erosion control system. The assessment may include a proportionate share of any expenses incidental to the completion of the floor or erosion control system, including fees and expenses of attorneys, engineers, and others; the costs of acquiring property; interest on securities, the cost of preparing maps and plans, and the cost of advertising or notification. It may divide the total territory to be benefited from the system into sections, and levy assessments against each section separately. The amount raised must be apportioned among the benefited properties based upon their area, street frontage, assessed valuation, present or permitted use, or any combination of these or other relevant factors. The assessment cannot be for more than the benefit to the property (CGS §§ 25-87 and 88).

STORM WATER UTILITY STUDY

DEP has awarded Stonington a grant to examine state laws and local ordinances to determine the feasibility of developing a storm water utility in that town. Nicole Burnham, an engineer at the Cheshire consulting firm of Milone & MacBroom, says she expects to have a draft report prepared by the end of this year.

PF: ro

Appendix B

Summary of Workshop 2

FUSS & O'NEILL

MEETING SUMMARY NOTES
EVALUATION OF STORMWATER GENERAL PERMIT AND LID
(Contract # PS2010-10172)
WORKSHOP 2—JULY 1, 2010; PHOENIX AUDITORIUM

DISTRIBUTION: Attendees and Other Project Partners
DATE: July 12, 2010

The following discussion summarizes the July 1, 2010 Workshop for the Evaluation of Stormwater General Permit and Low-Impact Development held at the Department of Environmental Protection Offices (79 Elm Street, Hartford, CT) in the Phoenix Auditorium.

A list of workshop attendees is provided at the end of this summary.

INTRODUCTIONS

Opening Remarks
MaryAnn Nusom Haverstock opened the meeting. During her opening, she pointed out that the issue of legal authority to require low impact development (LID) as part of the stormwater general permits had been vetted between the Environmental Protection Agency—New England (EPA) and Connecticut Department of Environmental Protection (DEP) and such authority is clearly present in existing state law. MaryAnn asked attendees to introduce themselves around the table. She then turned the agenda over to Fuss & O'Neill.

Introductions around the Table
Jim Riordan of Fuss & O'Neill gave a PowerPoint Presentation, entitled "Introductions, Meetings, and the Web Page." The presentation is available on:

http://www.ct.gov/dep/cwp/view.asp?a=2719&q=459488&depNav_GID=1654

Future Meeting Dates and Locations
Jim reconfirmed the next three meetings and meeting dates, which were set during Workshop 1 (May 26). The dates are as follows:

Project Meeting Dates

Workshop Title	Date to be Held
Partner Workshop 3	Tuesday, August 31, 2010
Partner Workshop 4	Wednesday, October 20, 2010
Partner Workshop 5	Wednesday, December 15, 2010

Note:
All meetings will be held from 9:15 a.m. – 11:45 a.m. in the Phoenix Auditorium at the Hartford, CT DEP Offices.

Web Page
Jim reintroduced the project web page on DEP's website:

http://www.ct.gov/dep/cwp/view.asp?a=2719&q=459488&depNav_GID=1654

The web page will be used to provide project partners and other interested parties with general project information, schedules, and deliverables.

IDENTIFYING ALTERNATIVES AND CRITERIA AND PARTNER INVOLVEMENT IN IMPLEMENTATION (continued)

At the May 26 workshop, a card storming and consensus-building session was facilitated. The session was partially completed. Therefore, the July 1 workshop involved a continuation of the session. Jim led meeting attendees in this continuation (see Photograph 1). Results included recombination of several of the card storming clusters formed during the May 26 workshop and naming of the resulting clusters.

Photograph 1—Results during the July 1 workshop included rearrangement of clustered cards as well as naming of the clusters.

Some of the specific changes included:

- Combining "Practical" and "Flexibility" into "Practicability-Flexibility."
- Moving "Conservation" into "Environmental Benefit."
- Placing "Legal Administrable" into the parking lot.[1]
- Moving "Regulation" into "Administrable."
- Changing "Economic Viability" to "Economic Market Viability."
- Naming the cards under the "+" symbol "Clear and Understandable."

A discussion point was raised about whether the flow management capacity of LID BMPs would be quantifiable and, therefore, could be used to achieve peak flow attenuation requirements. A card was added under the topic of "administrable":

- Quantifiable-measurable for other permit requirements that might duplicate.

During this session, a point was raised that some of cards and clusters were more closely related to implementation than the actual workshop question of "what are features of good LID policy?" Jim offered to the group that one solution would be to change the workshop

[1] The "parking lot" refers to holding further discussion for now in order to continue forward on other issues in the workshop. Some discussion occurred over the issue of whether or not DEP has legal authority to require LID. DEP has established this authority and intends to document it. DEP intends to document their legal authority. The topic of "administrable" was retained in place of "Legal Administrable."

question to include implementation. Ultimately, the group decided to leave the workshop question, cards, and clusters without change.

Results of the card storming exercise are shown in Photograph 2 and type written in Attachment 2. Six named clustered resulted:

- Economic Market Viability
- Clear and Understandable
- Practicable Flexibility
- Administrable
- Education
- Environmental Benefit

Photograph 2—Complete results of card storming conducted during May 26 and July 1 workshops.

STORMWATER UTILITY DISTRICTS

Jim gave a PowerPoint presentation regarding the potential role of stormwater utility districts in the implementation of LID. The presentation is available on:

http://www.ct.gov/dep/cwp/view.asp?a=2719&q=459488&depNav_GID=1654

CAROUSEL WORKSHOP

Jim introduced the carousel workshop with a PowerPoint presentation, which included a brief discussion of five implementation alternatives. The presentation is available on:

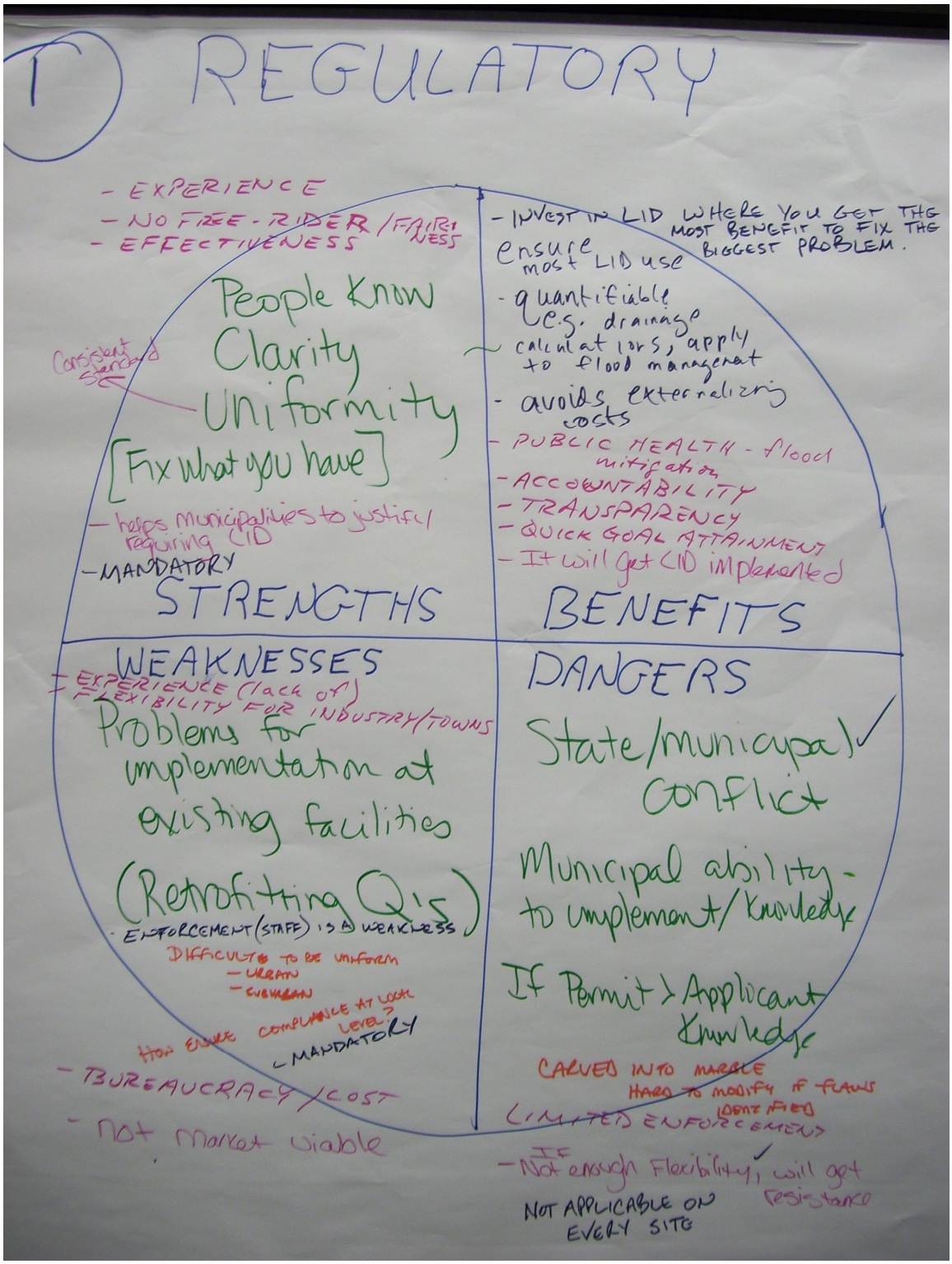
http://www.ct.gov/dep/cwp/view.asp?a=2719&q=459488&depNav_GID=1654

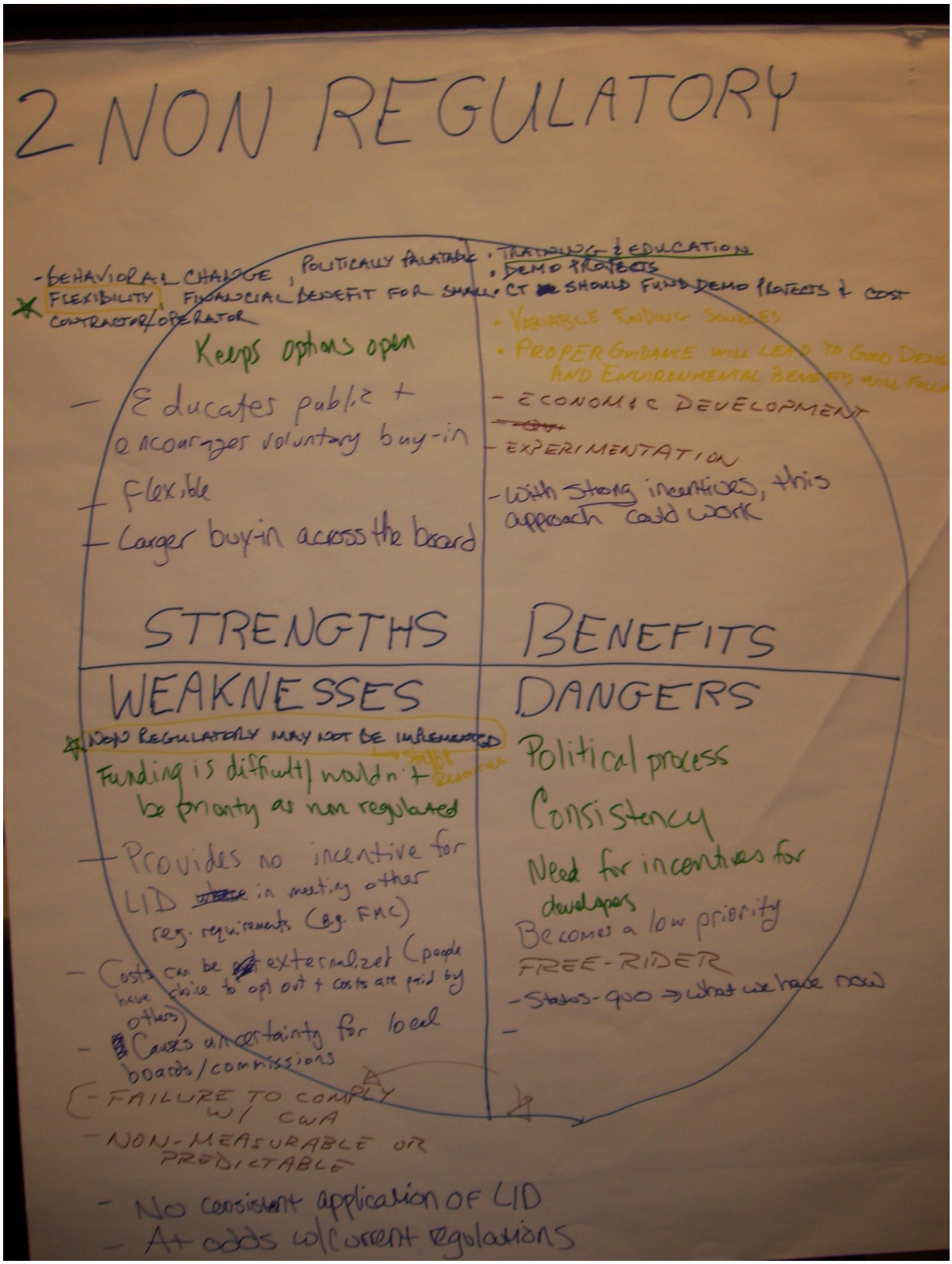
This included the following:

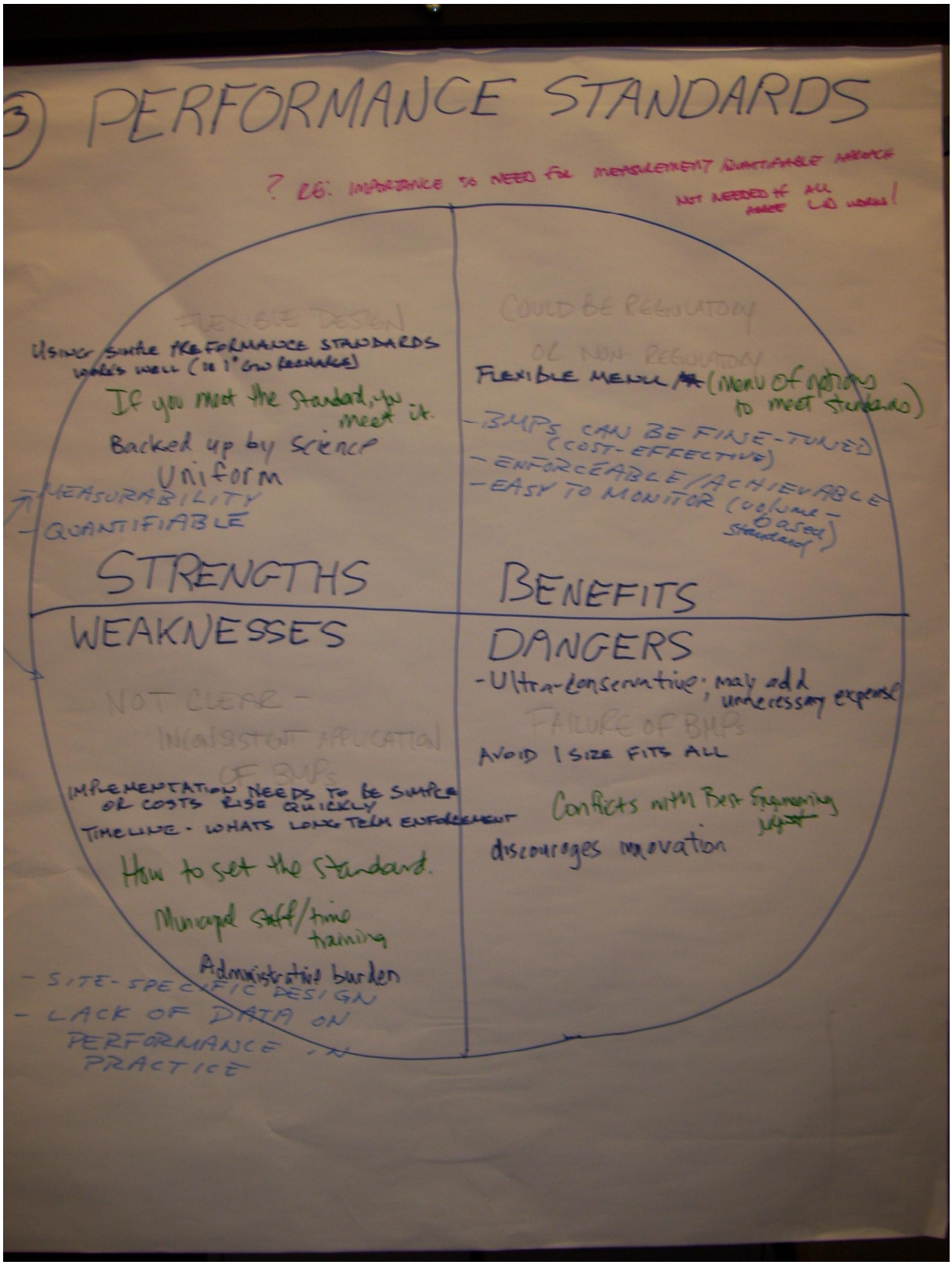
- 12 minutes each participant lists 5 pros & 5 cons for each of the 5 alternatives and 3 alternatives that haven't been considered.
- Split up into 6 groups and pick a "reporter."
- 5 minutes at each station:
  - List 5 strengths, 5 weaknesses, 5 benefits, and 5 dangers of each of the 5 alternatives
  - At Station 6, list alternatives that haven't been recommended
- Repeat process at other 5 alternatives. You can star or emphasize items you see as critical.
- Reporter presents findings (2 minutes for each reporter) at your group's last alternative.

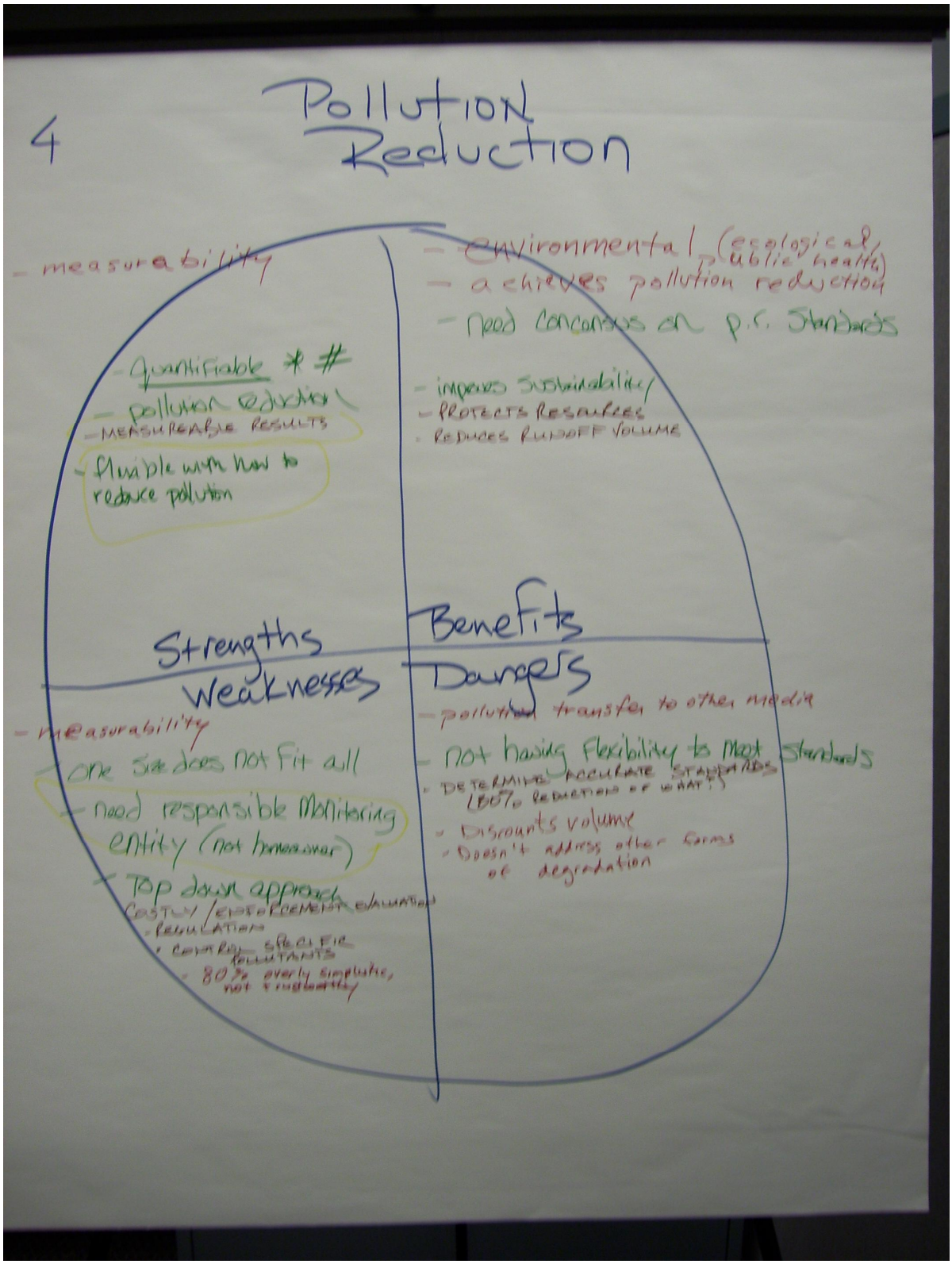
Photographs 3 - 6—Carousel workshop in process.

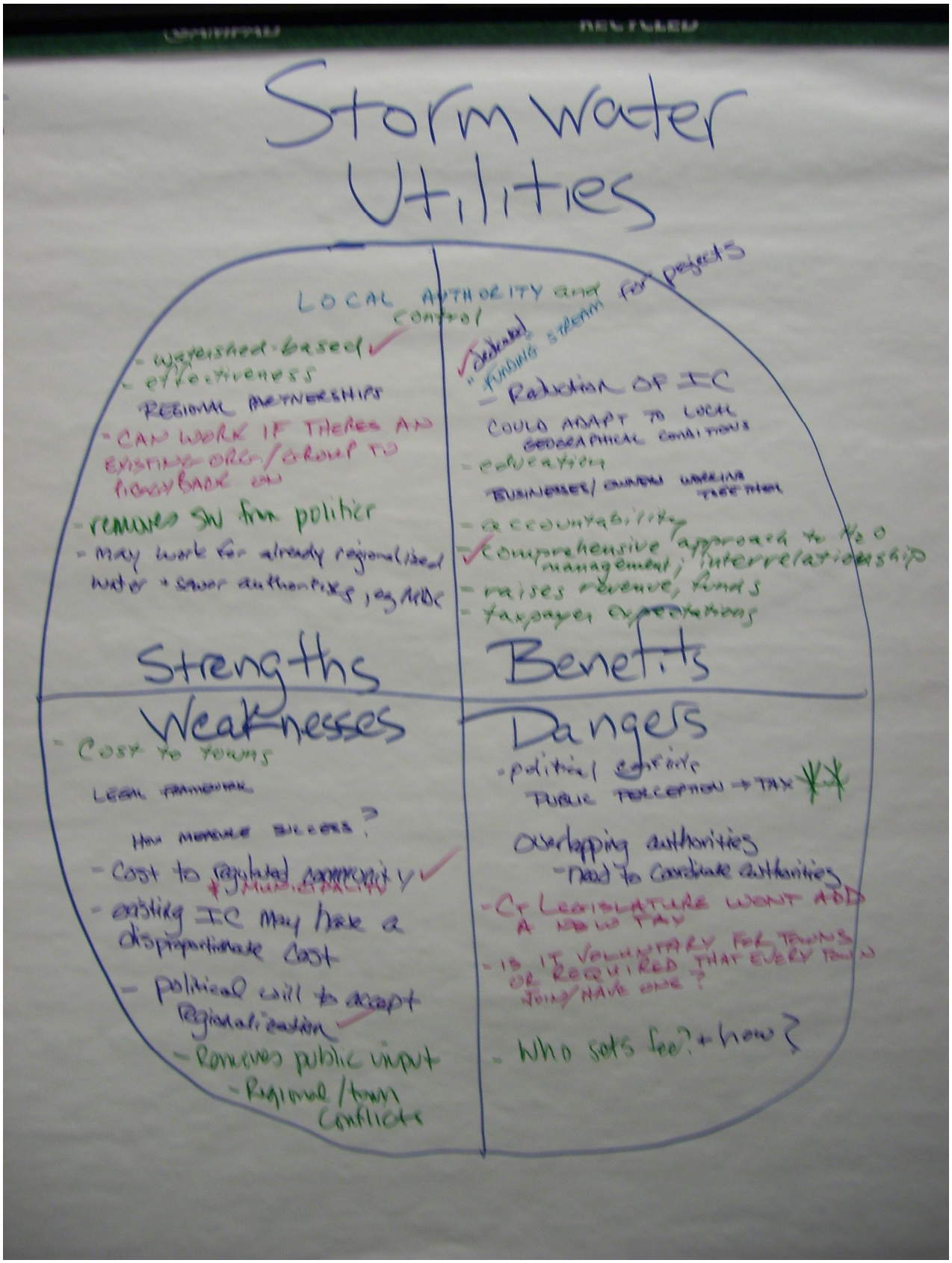
The results of the carousel workshop are shown in Photograph 2 and type written in Attachment 2.

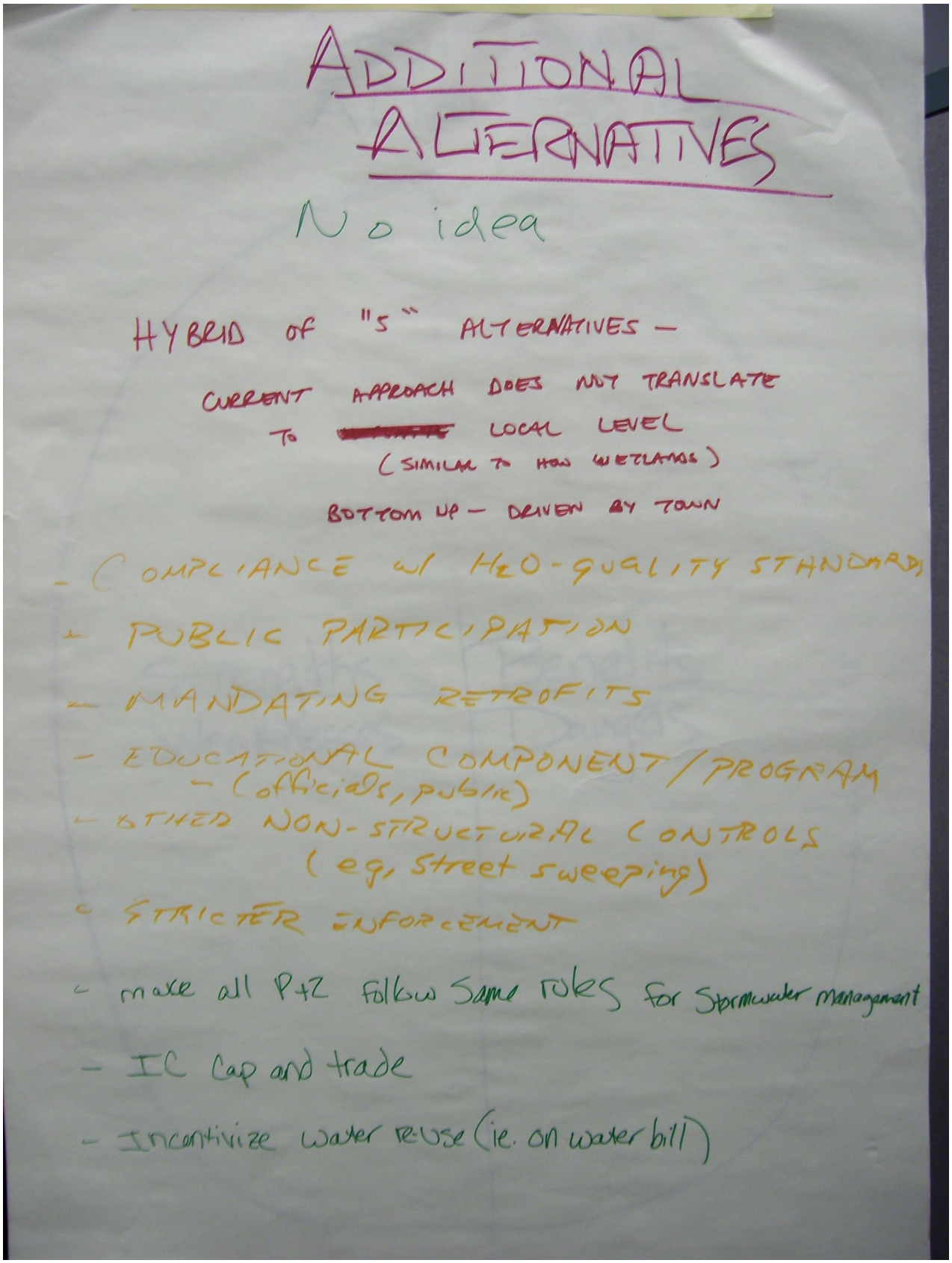



2 NON REGULATORY
- BEHAVIORAL CHANGE
FLEXIBILITY
CONTRACTOR/OPERATOR
POLITICALLY PALATABLE
FINANCIAL BENEFIT FOR SMALL
TRAINING & EDUCATION
DEMO PROJECTS
CT SHOULD FUND DEMO PROJECTS & COST
VARIABLE FUNDING SOURCES
PROPER GUIDANCE WILL LEAD TO GOOD DESIGN AND ENVIRONMENTAL BENEFITS WILL FOLLOW
Keeps options open
- Educates public + encourages voluntary buy-in
- Flexible
- Larger buy-in across the board
- ECONOMIC DEVELOPMENT
- EXPERIMENTATION
- With strong incentives, this approach could work
STRENGTHS
BENEFITS
WEAKNESSES
DANGERS
NON REGULATORY MAY NOT BE IMPLEMENTED
Funding is difficult/ wouldn't be priority as non regulated
- Provides no incentive for LID in meeting other reg. requirements (e.g. FMC)
- Costs can be externalized (people have choice to opt out + costs are paid by others)
- Causes uncertainty for local boards/commissions
- FAILURE TO COMPLY W/ CWA
- NON-MEASURABLE OR PREDICTABLE
- No consistent application of LID
- At odds w/ current regulations
Political process
Consistency
Need for incentives for developers
Becomes a low priority
FREE-RIDER
- Status-quo ⇒ what we have now
-


3) PERFORMANCE STANDARDS
? RE: IMPORTANCE TO NEED FOR MEASUREMENT QUANTIFIABLE IMPACT
NOT NEEDED IF ALL MEET LID GOALS!
FLEXIBLE DESIGN
COULD BE REGULATORY OR NON-REGULATORY
USING SIMPLE PERFORMANCE STANDARDS WORKS WELL (IE 1" GW RECHARGE)
If you meet the standard, you meet it.
Backed up by science
Uniform
- MEASURABILITY
- QUANTIFIABLE
STRENGTHS
FLEXIBLE MENU (MENU OF OPTIONS TO MEET STANDARDS)
- BMPS CAN BE FINE-TUNED (COST-EFFECTIVE)
- ENFORCEABLE/ACHIEVABLE
- EASY TO MONITOR (VOLUME-BASED STANDARD)
BENEFITS
WEAKNESSES
NOT CLEAR - INCONSISTENT APPLICATION OF BMPS
IMPLEMENTATION NEEDS TO BE SIMPLE OR COSTS RISE QUICKLY
TIMELINE - WHATS LONG TERM ENFORCEMENT
How to set the standard.
Municipal staff/time training
Administrative burden
- SITE-SPECIFIC DESIGN
- LACK OF DATA ON PERFORMANCE IN PRACTICE
DANGERS
- Ultra-conservative; may add unnecessary expense
FAILURE OF BMPS
AVOID 1 SIZE FITS ALL
Conflicts with Best Engineering Judgment
discourages innovation


4
Pollution Reduction
- measurability
- quantifiable * #
- pollution reduction
- MEASUREABLE RESULTS
- flexible with how to reduce pollution
- environmental (ecological, public health)
- achieves pollution reduction
- need concerns on p.c. standards
- improves sustainability
- PROTECTS RESOURCES
- REDUCES RUNOFF VOLUME
Strengths
Weaknesses
Benefits
Dangers
- measurability
- one size does not fit all
- need responsible monitoring entity (not homeowner)
- top down approach
COSTLY / ENFORCEMENT EVALUATION
- REGULATION
- CONTROL SPECIFIC POLLUTANTS
- 80% overly simplistic, not troublesome
- pollution transfer to other media
- not having flexibility to meet standards
- DETERMINE ACCURATE STANDARDS (100% REDUCTION OF WHAT?)
- Discounts volume
- Doesn't address other forms of degradation


Storm water Utilities
LOCAL AUTHORITY and control
- watershed-based
- effectiveness
REGIONAL PARTNERSHIPS
- CAN WORK IF THERES AN EXISTING ORG/GROUP TO PIGGYBACK ON
- removes SW from politics
- may work for already regionalized water + sewer authorities, eg MDC
Strengths
Dedicated funding stream for projects
- Reduction of IC
COULD ADAPT TO LOCAL GEOGRAPHICAL CONDITIONS
- equitable
BUSINESSES/OWNERS UNDERIMP TREATMENT
- accountability
- comprehensive approach to H2O management/interrelationship
- raises revenue, funds
- taxpayer expectations
Benefits
Weaknesses
- Cost to towns
LEGAL FRAMEWORK
How measure success?
- Cost to regulated community
- existing IC may have a disproportionate cost
- political will to accept Regionalization
- Removes public input
- Regional/town conflicts
Dangers
- political agenda
PUBLIC PERCEPTION → TAX
overlapping authorities
- Need to Coordinate authorities
- CT LEGISLATURE WONT ADD A NEW TAX
- IS IT VOLUNTARY FOR TOWNS OR REQUIRED THAT EVERY TOWN JOIN/HAVE ONE?
- Who sets fee? + how?



ADDITIONAL ALTERNATIVES

No idea

HYBRID OF "5" ALTERNATIVES –

CURRENT APPROACH DOES NOT TRANSLATE TO [redacted] LOCAL LEVEL
(SIMILAR TO HOW WETLANDS)

BOTTOM UP – DRIVEN BY TOWN

- COMPLIANCE w/ H_2O-QUALITY STANDARDS
- PUBLIC PARTICIPATION
- MANDATING RETROFITS
- EDUCATIONAL COMPONENT/PROGRAM – (officials, public)
- OTHER NON-STRUCTURAL CONTROLS (eg, Street sweeping)
- STRICTER ENFORCEMENT
- make all P+Z follow same rules for Stormwater Management
- IC Cap and trade
- Incentivize water reuse (ie. on water bill)

FUSS & O'NEILL

NEXT STEPS

The next workshop will be held on August 31 in the Phoenix Auditorium from 9:15 to 11:45 a.m. This meeting will focus on alternatives for implementation. In preparation for the meeting Fuss & O'Neill will develop two technical memoranda regarding: (a) information gathered from partner interviews and other states; (b) the role of stormwater utilities. Fuss & O'Neill will also develop a summary document of alternatives for LID implementation and criteria for selection based on workshops 1 and 2.

ATTENDEES

Attendees of the July 1 workshop are listed below in alphabetical order by affiliation.

Attendee	Affiliation
Eric Brown	CBIA
Virginia Mason	Council of Governments Central Naugatuck Valley
Jim Langlois	Connecticut Concrete
Matthew Hallssey	Connecticut Construction Industries
Jessica Morgan	Connecticut Department of Environmental Protection
Mary-Beth Hart	Connecticut Department of Environmental Protection OLISP
Chris Malik	Connecticut Department of Environmental Protection/NPS Program
MaryAnn Nusom Haverstock	Connecticut Department of Environmental Protection/NPS Program
Chris Stone	Connecticut Department of Environmental Protection-Water Permitting
Nisha Patel	Connecticut Department of Environmental Protection-Water Permitting
Eric McPhee	Connecticut Department of Public Health
Paul Corrente	Connecticut Department of Transportation—Environmental Planning
Roger Reynolds	Connecticut Fund for the Environment
John Carrier	Connecticut Home Builders
Mike Girard	Connecticut Home Builders
Darin Overton	Connecticut Home Builders

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Bruce Wittchen	Connecticut Office of Policy and Management
Judy Rondeau	ECCD
Johanna Hunter	EPA Region 1
Jim Riordan	Fuss & O'Neill
Phil Moreschi	Fuss & O'Neill
Bill Ethier	Home Builders Association of Connecticut
Terrance Gallagher	Luchs
Greg Sharp	Murtha Cullina, LLP
John Hudak	Regional Water Authority
Kenneth Wieland	Rivers Alliance
Michael Dietz	University of Connecticut—Nonpoint Education for Municipal Officials

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ATTACHMENT 1
RESULTS OF CARD STORMING FROM JULY 1, 2010 (WORKSHOP 2)

Card Storming Question:
What are the features of good LID policy?

Objective Card Storming Aim:
Identify criteria [for determining alternatives]

Experiential Card Storming Aim:
Identify similarities [in participants ideas of good LID policy]

Economic Market Viability

- Cost effective options, not regulations
- Enough incentive to achieve success
- Recognize market demands for different development types (LID may not be for all
- Funding for implementation
- Market/demand sensitivity
- Effectiveness can be verified and maintenance is not cost prohibitive

Education

- Education component
- Knowledgeable design engineers training, <u>train</u>
- Use good science and knowledgeable people to make decisions
- Public acceptance—meaning willingness to act a local/residential scale
- <u>Greatest behavior change</u> Promote policies (regulatory and/or voluntary) that result in greatest behavior change

Clear and Understandable

- Clarity
- Uniform statewide (standardized)
- Make any guidance and/or standards simple. Make process certain.
- LID policy at the local level to adopt, enforce, implement

Practicability-Flexibility

- Practical to implement and maintain
- Not burdensome to individuals, easy to comply with
- Maintenance required
- Flexible
  - Consider site constraints
  - Consider project type
- Flexible
- Room for innovation
- Performance based (about objective, not technique)
- Bottom-up site specific approach, <u>not</u> top down.

Legal Administrable

- Easy to administer
- Aligning municipal zoning subdivision regulations (with LID)
- Encouragement TPZ, cons[ervation] subdivision regulations
- Available support structure mechanism for contractors/homeowners implementing LID
- Compatible with other regulations and goals that are necessary i.e., ADA, mosquito control, public safety, public health
- Legal
- Oversight from local and state agencies
- Enforceability
- Treats stormwater runoff with the same strict criteria that are required of on-site septic systems
- Quantifiable-measurable for other permit requirements that might duplicate
- Should be expected and standard operating procedure not as the exception

Environmental Benefit

- Manages soil erosion
- Reduction of impervious materials
- Remediates already built areas
- Promotes GW recharge
- Water quality & water quantity (groundwater (in-stream recharge) flow techniques)
- Reduces runoff
- Minimize impervious cover
- Fix impairment
- Resource based design (e.g., soils)
- Allow soil microorganisms to work
- Shift focus from engineering to conservation

Low Impact Development and Stormwater General Permit Evaluation

1. REGULATORY

STRENGTHS
- Experience
- No free-rider/fairness
- Effectiveness
- People know clarity/uniformity (consistent standard) [Fix what you have]
- Helps municipalities to justify requiring LID
- Mandatory

BENEFITS
- Invest in LID where you get the most benefit to fix the biggest problem
- Ensure most LID use
- --Quantifiable (e.g., drainage calculations, apply to flood management
- Avoids externalizing costs
- Public health – flood mitigation
- Accountability
- Transparency
- Quick goal attainment
- It will get LID implemented

WEAKNESSES
- Lack of experience
- Flexibility for industry/towns
- Problems for implementation at existing facilities (Retrofitting Q's)
- Enforcement (staff) is a weakness
- Difficult to be uniform – urban, suburban
- How ensure compliance at local level?
- Mandatory
- Bureaucracy/cost
- Not market viable

DANGERS
- State/municipal conflict ✓
- Municipal ability to implement/knowledge
- If permit – applicant knowledge
- Carved into marble
- Hard to modify if flaws identified
- Limited enforcement
- If not enough flexibility, will get resistance✓
- Not applicable on every site

2. NON REGULATORY

STRENGTHS
- Behavioral change
- Politically palatable
- Flexibility*, Financial Benefit for small contractor/operator
- Keeps options open
- Educates public and encourages voluntary buy-in
- Flexible
- Larger buy-in across the board

BENEFITS
- Training and education
- Demo projects
- CT should fund demo projects and cost
- Variable funding sources
- Proper guidance will lead to good design and environmental benefits will follow
- Economic development
- Experimentation
- With strong incentives, this approach could work

WEAKNESSES
- Non regulatory may not be implemented (Staff and resources)
- Funding is difficult/wouldn't be priority as non regulated
- Provides no incentive for LID in meeting other regulatory requirements (e.g., FMC)
- Costs can be externalized (people have choice to opt out and costs are paid by others)
- Causes uncertainty for local boards/commissions
- Failure to comply with CWA
- Non-measureable or predictable
- No consistent application of LID
- At odds with current regulations

DANGERS
- Political process
- Consistency
- Need for incentives for developers
- Becomes a low priority
- Free-rider
- Status quo – what we have now
- Failure to comply

3. PERFORMANCE STANDARDS

STRENGTHS
- Flexible design
- Using simple performance standards works well (i.e., 1" GW recharge)
- If you met the standard, you meet it
- Backed up by science
- Uniform
- Measurability
- Quantifiable

BENEFITS
- Could be regulatory or non-regulatory
- Flexible menu ** (menu of options to meet standards)
- BMPs can be fine-tuned (cost-effective)
- Enforceable/achievable
- Easy to monitor (volume-based standard)

WEAKNESSES
- Not clear - Inconsistent application of BMPs
- Implementation needs to be simple or costs rise quickly
- Timeline – What's long term enforcement
- How to set the standard
- Municipal staff/time training
- Administrative burden
- Site-specific design
- Lack of data on performance in practice
- Measurability

DANGERS
- Ultra-conservative; may add unnecessary expense
- Failure of BMPs
- Avoid one size fits all
- Conflicts with best engineering judgment
- Discourages innovation

4. POLLUTION REDUCTION

STRENGTHS
- Measurability
- Quantifiable *#
- Pollution reduction
- Measureable results
- Flexible with how to reduce pollution

BENEFITS
- Environmental (ecological/public health)
- Achieves pollution reduction
- Need consensus on p.r. [pollution reduction] standards
- Improves sustainability
- Protects resources
- Reduces runoff volume

WEAKNESSES
- Measurability
- One size does not fit all
- Need responsible monitoring entity (not homeowner)
- Top down approach
- Costly/enforcement evaluation – regulation
- Control specific pollutants
- 80% overly simplistic, not trustworthy

DANGERS
- Pollution transfer to other media
- Not having flexibility to meet standards
- Determine accurate standards (80% reduction of what?)
- Discounts volume
- Doesn't address other forms of degradation

5. STORMWATER UTILITIES

STRENGTHS
Local authority and control
- Watershed based ✓
- Effectiveness
- Regional partnerships
- Can work if there's an existing organization/group to piggyback on
- Removes stormwater from politics
- May work for already regionalized water and sewer authorities , e.g., MDC

BENEFITS
- ✓Dedicated "funding" stream for projects
- Reduction of IC [impervious cover]
- Could adapt to local geographical conditions
- Education
- Businesses/owners working together
- Accountability
- ✓Comprehensive approach to water management; interrelationship
- Raises revue, funds
- Taxpayer expectations

WEAKNESSES
- Cost to towns
- Legal framework
- How measure success?
- Cost to regulated community✓ and municipality
- Existing IC may have a disproportionate cost
- Political will to accept regionalization✓
- Removes public input
- Regional/town conflicts

DANGERS
- Political conflicts
- Public perception – tax**
- Overlapping authorities – Need to coordinate authorities
- CT legislature won't add a new tax
- Is it voluntary for towns or required that every town join/have one?
- Who sets fee and how?

6. ADDITIONAL ALTERNATIVES

- Hybrid of "5" alternatives – current approach does not translate to local level (similar to how wetlands) Bottom up- driven by town.
- Compliance with water quality standards
- Public participation
- Mandating retrofits
- Educational component/program (officials, public)
- Other non-structural controls (e.g., street sweeping)
- Stricter enforcement
- Make all P+Z [planning and zoning] follow same rules for stormwater management
- IC [impervious cover] cap and trade
- Incentivize water reuse (i.e., on water bill)

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1. REGULATORY

STRENGTHS

- Experience
- No free-rider/fairness
- Effectiveness
- People know clarity/uniformity (consistent standard) [Fix what you have]
- Helps municipalities to justify requiring LID
- Mandatory

BENEFITS

- Invest in LID where you get the most benefit to fix the biggest problem
- Ensure most LID use
- ~Quantifiable (e.g., drainage calculations, apply to flood management
- Avoids externalizing costs
- Public health – flood mitigation
- Accountability
- Transparency
- Quick goal attainment
- It will get LID implemented

WEAKNESSES

- Lack of experience
- Flexibility for industry/towns
- Problems for implementation at existing facilities (Retrofitting Q's)
- Enforcement (staff) is a weakness
- Difficult to be uniform – urban, suburban
- How ensure compliance at local level?
- Mandatory
- Bureaucracy/cost
- Not market viable

DANGERS

- State/municipal conflict ✓
- Municipal ability to implement/knowledge
- If permit – applicant knowledge
- Carved into marble
- Hard to modify if flaws identified
- Limited enforcement
- If not enough flexibility, will get resistance✓
- Not applicable on every site

2. NON REGULATORY

STRENGTHS

- •Behavioral change
- •Politically palatable
- •Flexibility*, Financial Benefit for small contractor/operator
- •Keeps options open
- •Educates public and encourages voluntary buy-in
- •Flexible
- •Larger buy-in across the board

BENEFITS

- •Training and education
- •Demo projects
- •CT should fund demo projects and cost
- •Variable funding sources
- •Proper guidance will lead to good design and environmental benefits will follow
- •Economic development
- •Experimentation
- •With strong incentives, this approach could work

WEAKNESSES

- •*Non regulatory may not be implemented (Staff and resources)
- •Funding is difficult/wouldn't be priority as non regulated
- •Provides no incentive for LID in meeting other regulatory requirements (e.g., FMC)
- •Costs can be externalized (people have choice to opt out and costs are paid by others)
- •Causes uncertainty for local boards/commissions
- •Failure to comply with CWA
- •Non-measureable or predictable
- •No consistent application of LID
- •At odds with current regulations

DANGERS

- •Political process
- •Consistency
- •Need for incentives for developers
- •Becomes a low priority
- •Free-rider
- •Status quo – what we have now
- •Failure to comply

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3. PERFORMANCE STANDARDS

STRENGTHS

- Flexible design
- Using simple performance standards works well (i.e., 1" GW recharge)
- If you met the standard, you meet it
- Backed up by science
- Uniform
- Measurability
- Quantifiable

BENEFITS

- Could be regulatory or non-regulatory
- Flexible menu ** (menu of options to meet standards)
- BMPs can be fine-tuned (cost-effective)
- Enforceable/achievable
- Easy to monitor (volume-based standard)

WEAKNESSES

- Not clear - Inconsistent application of BMPs
- Implementation needs to be simple or costs rise quickly
- Timeline – What's long term enforcement
- How to set the standard
- Municipal staff/time training
- Administrative burden
- Site-specific design
- Lack of data on performance in practice
- Measurability

DANGERS

- Ultra-conservative; may add unnecessary expense
- Failure of BMPs
- Avoid one size fits all
- Conflicts with best engineering judgment
- Discourages innovation

4. POLLUTION REDUCTION

STRENGTHS

- Measurability
- Quantifiable *#
- Pollution reduction
- Measureable results
- Flexible with how to reduce pollution

BENEFITS

- Environmental (ecological/public health)
- Achieves pollution reduction
- Need consensus on p.r. [pollution reduction] standards
- Improves sustainability
- Protects resources
- Reduces runoff volume

WEAKNESSES

- Measurability
- One size does not fit all
- Need responsible monitoring entity (not homeowner)
- Top down approach
- Costly/enforcement evaluation – regulation
- Control specific pollutants
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