
MARYLAND ENVIRONMENTAL SITE DESIGN SURVEY

CONSULTANT RESPONSES

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INTRODUCTION

Community & Environmental Defense Services (CEDS) has been conducting workshops throughout Maryland on the new Environmental Site Design (ESD) requirements. A wide range of people have attended the workshops, including engineers and other professionals who prepare ESD plans. A number of these professionals have expressed concern with ESD. CEDS views ESD as critical to gaining the benefits of growth but without the excessive aquatic resource impacts seen in the past. The ESD Redevelopment provisions could also play an important role in restoring waters degraded by past development. CEDS posted a brief survey online in hopes of compiling the views of these professionals on the pros and cons of ESD. It is our hope that the survey results will help in some small way to further the discussions of how to resolve issues which add unnecessarily to project cost and review time while maximizing the aquatic resource benefits of ESD. A similar survey has been conducted among the County officials who oversee ESD.

SURVEY METHOD

CEDS is compiling a directory of private consultants with Maryland ESD expertise. The directory project was initiated after we received a number of referral requests, yet we found a listing of ESD professionals did not exist. We asked those listed in the directory to take a brief, six-question survey posted at: http://www.surveymonkey.com/s/ESD_Survey.

RESULTS

Of the 45 professionals listed in the directory, 33 completed the survey. Responses were received from professional based mostly in Maryland but also Delaware, Pennsylvania and Virginia. Following is a listing of towns where the respondents are based: Alexandria, Annapolis, Baltimore, Chantilly, Columbia, Dover, Easton, Elkton, Ellicott City, Gaithersburg, Hanover, Havre de Grace, Hunt Valley, North East, Rockville, Salisbury, Sparks, Waynesboro, and Woodbine.

Following are the results of the survey. Attachments lettered A to F, follow the results summary presented below. Each attachment contains the verbatim responses to the questions. An attempt was made to group the responses into categories. Since many responses touched on more than one topic, they may appear under multiple categories

What is the greatest frustration you've experienced thus far with ESD?

Responses to this question were provided by all of the professionals who completed the survey. Attachment A presents the responses verbatim. The responses were grouped into the following categories: Interpretation of Regulations (15); Maximum Extent Practicable (6); Practice Concerns (6); Cost Issues (4); Achieving ESD Benefits (3); No Frustrations Yet (3); and Other Issues (2).

Have you seen a significant difference in review times with ESD plans when compared to those designed in accordance to the original 2000 Maryland Stormwater Design Manual?

Of the 31 professionals who responded to this question, 48% said Yes and 52% marked No. Comments regarding this question were provided by 23 of the professionals. These comments appear verbatim in Attachment B and are grouped into the following categories: Too Early To Tell (10); Review Time Longer (4); Review Time Longer: Due to Additional Steps-Plans (5); Review Time Longer: Due to Regulatory Learning Curve (1); Review Time About The Same (1); and Other Comments (2).

Have you found the total project cost of ESD to be more, less, or about the same as the measures required by the original 2000 Maryland Stormwater Design Manual?

Of the 28 professionals who responded to this question, 58% said More, 10% marked Less, and 32% noted About The Same. Comments regarding this question were provided by 20 of the professionals. These comments appear verbatim in Attachment C and are grouped into the following categories: Costs Are Higher (10); Cost Differences Variable (7); Costs Are Lower (2); and Too Early To Tell (1).

What do you see as the greatest benefits of ESD?

All 33 professionals responded to this question, which are presented verbatim in Attachment D and are grouped into the following categories: Improved Environmental Quality (20); Lower Costs (5); No Benefits (4); Greater Design Flexibility (3); and Other Comments (2).

Redevelopment offers the possibility of improving the quality of many urban waterways through retrofits designed to treat runoff from existing impervious surfaces. Of course increasing the amount of impervious area treated raises redevelopment costs. Are there any incentives or other approaches that could accelerate retrofits by off-setting these costs?

Responses to this question were provided by the 33 professionals, which are presented verbatim in Attachment D. The responses are grouped into the following categories: Tax Credits (8); Stormwater Fee/Utility (6); ESD May Enhance Redevelopment Property Value Sufficiently to Offset Cost (2); Off-Site Mitigation (2); Relax ESD For Redevelopment (2); Fee-In-Lieu (1); Make Green Field Development More Costly (1); Public Recognition for Good ESD Projects (1); Credit System (1); Handle at Municipal Level (1); Incentives Urgently Needed (1); and None (4).

Are there any other thoughts you'd like to add?

Other thoughts were provided by 19 of the professionals. These thoughts are presented verbatim in Attachment F and are grouped as: Too Early To Assess ESD Pros and Cons (3); Keep ESD Simple + More Flexibility (3); Cost Equity (3); Survey Should Be Reported (2); Easement for Each BMP a Problem (1); ESD May Be The Right Direction (1); and Other Thoughts (5).

Verbatim Responses to Question 2: What is the greatest frustration you've experienced thus far with ESD?

No Frustrations, Yet

None

I have had no significant frustrations.

I don't feel frustrated - yet.

Maximum Extent Practicable (MEP)

So far, the greatest frustration has been trying to meet the maximum extent possible (MEP) criteria.

Sometimes, given the site conditions, the MEP is a bit challenging to satisfy.

Lack of definition for "ESD to maximum extent practical". It seems this is subject to the interpretation of the reviewer.

Very hard to apply. MEP is quite subjective and has to be negotiated with each reviewer and/jurisdiction in a time consuming iterative process

MEP, is not quantifiable and thus can be argued at any level in the various reviews.

The documentation process to prove that you've met 'MEP' is inconsistent. Some reviewers want exhibits for every portion of the site with lists of what was tried and why it did/did not work. Others seem to be okay with a summary.

Achieving ESD Benefits

Getting people to understand that there is more to ESD than storm water management. Vegetation management to control existing invasive plants on the site and a plan for future management needs to be considered. Only regionally native plants should be used for material selection for the ecological benefits they provide.

Many civil engineers do not understand how to use the new calculations. They are also not practiced in "site fingerprinting", something that landscape architects and planners know as Site Analysis and evaluations of opportunities and constraints. Likewise, many of the regulators are not familiar with ESD practices and are reluctant to accept them. Other agencies are extremely reluctant to use these practices. For example, most DOTs/DPWTs will not contemplate allowing water to remain in or near the ROW or infiltrate into the soils due to fears about poorly drained road bases.

Mostly the quantitative bean counting that one has to progress through to meet the new MDE criteria which then becomes the focus of the design, as opposed to truly focusing on better site design. ESD does not seem to accommodate the full range of complexities that many sites present.

Cost Issues

Because this process has just become effective we are just now submitting our first project. I do not know if or how frustrating the process may be. The step of submitting preliminary SWM design before finalizing the entire design has some potential to make the ensuing process flow more smoothly. The largest challenge at this point is to convey to clients the process and the potential for added costs for additional facilities and loss of development space.

Developers don't understand that a greater level of engineering (and cost) is required earlier in the design process.

The developable land area it requires.

On design-build projects, we need to produce a 35% design during the pursuit phase. This is the design that the contractor uses to price and bid on the project. There is no time or money to have a concept phase meeting with MDE during this time. Then if the design-build team wins the project, the construction cost is based on a design that was never reviewed or approved by MDE. The team may make assumptions that MDE will not accept. This causes way too much risk for the Design-Build team.

Practice Concerns

ESD criteria does not allow flexibility to use Structural Sand Filter to satisfy required water quality volume. The term Cp_v should have been limited to quantity control.

It is often difficult to get appropriate grade and separation from groundwater to get many of the practices to work on the Eastern Shore.

Very limited practices available for ultra-urban situations.

The lack of sound engineering basis. Lack of design flexibility to address quality management, if practices are not in the manual, they can't be used. Local AHJs do not feel comfortable in allowing design flexibility to achieve sensible designs and design alternatives. Instead of focusing on water quality treatment overall, with various practices that improve developments on the macro scale, these regulations force reviewers to focus on the minor details of designs, often missing the point. For example, the requirement for micro bio retention - DA to be <20,000 sf and capture 75% ESD_v. If criterion not met, practice will not be approved in many cases. This misses the point if ESD. MDE should provide guidelines, not specific regulations. Designers are

capable, creative and are professionals and should be afforded the courtesy to carry out the design intent rather than follow a design recipe.

The 3 step review process. The for highly urbanized/commercial planning the ESD will promote urban sprawl. The inability to use underground SWM techniques to meet the ESD requirements.

The drainage area limits to each practice are very small.

Interpretation of Regulations

Inconsistencies and complications at the county level with review, approval and design guidance. MDE's requirements put on the county government have caused changes to many ordinances/documents and shifted responsibility to different departments. The review agencies may not be structured efficiently to provide a consistent review.

The transition to the new regulations

Lack of any formal training offered by MDE. Everyone is learning this on their own and interpreting the criteria differently.

Confusion about when the new rules go into effect.

The subjectivity of the criteria.

Manual could use better redevelopment guidance, with respect to definition of site, project site, and point-of investigation.

The greatest frustration comes from a lack of consistent understanding between the different review agencies about implementation dates for the program, especially as they applied to projects that were already under design or review when the ESD requirements were implemented.

Very hard to apply. MEP is quite subjective and has to be negotiated with each reviewer and/jurisdiction in a time consuming iterative process

MEP, is not quantifiable and thus can be argued at any level in the various reviews.

Preparing a Stormwater Management Ordinance that is both effective in requiring ESD and providing efficiency in the plan review and approval process.

Two things: A lack of response from MDE to correct obvious errors in the manual; The review agencies lack of understanding of what MDE is requiring. It's been 5 months since the MDE regs took effect, and municipalities still don't know what they want.

The documentation process to prove that you've met 'MEP' is inconsistent. Some reviewers want exhibits for every portion of the site with lists of what was tried and why it did/did not work. Others seem to be okay with a summary.

Counties / reviewers which really don't understand it.

The reviewing agencies lack of knowledge and that they do not know how they are going to enforce the regulations. Also, ESD guidelines contradict Road Code requirements.

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Other Issues

Tracking for MS4 purposes.

Verbatim Comments Question 3: Have you seen a significant difference in review times with ESD plans when compared to those designed in accordance to the original 2000 Maryland Stormwater Design Manual?

Too Early To Tell

Have not yet been through the entire process. Wait for a response to the first Concept SWM submittal.

No way to compare w/ and w/o ESD.

Too early to tell.

Nothing noticeable as of yet, other than the (3) minimum review criteria.

The new ESD requirements are still just that, they are new and have had limited usage thus far. With the economic downturn there has also been limited projects to require ESD as well.

Haven't submitted ESD plans yet, so don't actually know if review times are different.

The workload at the review agencies is low and the project we have done are small, so we do not have a true picture of the review times.

Have not been past concept plan stage in a large project so far. I would expect longer reviews at the outset as engineers AND reviewers get used to the new regs. I wish MDE was doing more to train us all.

While I have no facts or experience to base this on, I am concerned that these new regulations will not be applied uniform/uniform application of the new regulations.

There's been a small difference since we are adding an Environmental Concept Plan, but in general, municipalities are getting it through quickly.

Review Time Longer

Review times have gone from 4 weeks to 6 weeks.

Slower review time with projects under State (MDE) review.

It takes longer and ESD techniques are often rejected.

It is a much longer process with ESD.

Review Time Longer: Due to Regulatory Learning Curve

There has been some difference in review times, but not significant. I think local regulators and reviewers are still working through the idiosyncracies

Review Time Longer: Due to Additional Steps-Plans

Additional review steps and the involvement of more departments creates a more subjective review when defining MEP which could increase the number of reviews. Also, changes in the scope of the projects can lead to a "step back" in the process which will significantly increase review times. However, the counties we most frequently work in have not changed their review time frames, simply added steps.

Added steps / meetings.

Study & interpretation of drainage areas, practices and treatment are more numerous and require much time to quantify.

Additional steps have been added at review agencies requiring the applicant to submit for stormwater review at the conceptual stage of plan development.

Only in some jurisdictions that did not previously have a Concept SWM review.

Review Time About the Same

Have not seen a significant review time increase yet, although the agencies that we have submitted to thus far under ESD principles have not had any backlog.

Other Comments

I am not an engineer, but a landscape designer, restoration ecologist and vegetation management specialist. In the past twelve years I have most always found that things go much faster in dealing with MDE, CAC/DNR and ACOE when you design with nature as precedence.

As a design professional, it is our responsibility to forward think development designs, something that was already happening, at least in my experience. The intent is good however I feel less and less like a true professional when we have to follow specific checklists, formats, meeting agendas and submittal requirements. Regulations as specific as those in the updated manual impress upon me the lack of professional respect that MDE has for PEs and other designers and AHJs.

Verbatim Responses to Question 4: Have you found the total project cost of ESD to be more, less or about the same as the measures required by the original 2000 Maryland Stormwater Design Manual?

Too Early To Tell

It is too early to tell. Costs will change as the practices become more familiar to the design and construction community.

Cost Differences Variable

We have already been dealing with a similar process for a few years in Pennsylvania. The actual implementation there varies somewhat from municipality to municipality.

The project has to be designed both ways to compare cost. For some sites, it should be more. for some sites, it should be less.

Varies by project

I have not worked on enough projects to extrapolate a trend. So far, it appears that costs will be cheaper for less dense projects with considerable open space, and more expensive for more urban projects that have high impervious coverage percentages.

It is probably a bit more when compared to the poorer site designs that just used a wet pond or wetland to treat the full set of criteria. But if credits were being used before, then ESD is comparable.

On the average I would say its slightly higher, but its very site dependant. A steep site is going to be more than a flat site, etc. Also, the limits of disturbance could increase to get the same unit yield. The difference in Earthwork can be huge.

We've found that it varies significantly based on the site. When we are able to accommodate ESD measures of sufficient size to eliminate WQv, Rev, and Cpv, then the costs are comparable. When we must include Cpv in addition to ESD, the costs are more.

Costs Are Lower

I find it most always cost less to work with nature than against it.

Most owners seem to feel, however, that the long term costs may be lower.

Costs Are Higher

On the Eastern Shore, traditional ponds are required regardless of other SWM BMPs utilized just to get the required fill for constructing the site. Additional BMPs just add to the cost.

There has been a significant increase in inspection and review fees from the county. Engineering costs will increase in the interim while the process is refined at the county level as well as in our office.

Definitely more. Especially in up front design costs and time delays. These regulations are not economic development friendly. Review times by AHJs for the "required" review steps add months, which equates to increased carrying costs and increased project costs.

The added meetings and processing steps have increased the costs.

More design time during the concept stage.

From a design standpoint, more.

The ESD projects that we have submitted so far consist mainly of utility substations. I expect that the cost of commercial or residential development design would increase significantly.

Much more!

The additional engineering costs have not been offset by a reduction in the SWM construction costs.

Because of the drainage area restrictions, a lot of micro-practices must be implemented and the construction costs and as-built engineering costs are higher.

Verbatim Responses to Question 5: What do you see as the greatest benefits of ESD?

Improved Environmental Quality

I believe that any approach that seeks to incorporate natural processes with our development patterns is superior to our more structured solutions.

- 1) Improved water quality of the bay by treating storm water on site(disconnecting the system)
- 2) Improved groundwater recharge. 3) Creating an opportunity to increase biodiversity through the use of native plants and the control of invasives.

Hopefully more effective quality control treatment of stormwater and a resulting decrease in total quantity discharge as well.

Greater water quality protection, returning rainfall to aquifer, greater opportunities for effective site planning, greater opportunities for conservation of environmentally sensitive areas

It is a step towards matching pre-development hydrologic conditions.

Less adverse impact on receiving waters.

Water quality improvement and site aesthetics.

Retains more natural areas and stormwater within site.

ESD provides an incentive for responsible development- it encourages the preservation of open space, woods, and other environmental features. In addition to having benefits for the environment, I believe that this provides quality of life benefits for the people who live in or use these developments.

Better environmental protection, and more enjoyable and habitable human development.

Improved water quality.

promotes better overall site design and a more natural environment as well as the lower maintenance costs.

ESD is the right basic approach to push volume reduction strategies and better integrated site design that yields stacked benefits.

Somewhat increased water quality benefits. hopefully better design

Hopefully, we will see benefit in the quality of our waterways.

The greatest benefit will be the water quality improvements and the restoration of aquatic resource.

Overall, improved water quality in our streams and bay.

Based on my current knowledge, I think stormwater quality will improve because I am designing more filtering devices (e.g., M-6).

ESD measures delay peak flows, reduce volumes and velocities of stormwater runoff, and provide an opportunity to reduce runoff temperatures as well. Another benefit of ESD is the opportunity to create beautiful spaces with a dual purpose to treat stormwater and engage the public.

Stormwater quantity and quality attenuation, aesthetics.

Greater Design Flexibility

With MDE's support there are many practices and approaches now accepted at the local level.

There is more opportunity for innovative design. Practices can be designed to maximize the usable area on-site.

Reduced project footprint; with more SW BMP options available.

Lower Costs

Expect to see lower life cycle costs

Achieving CPv and WQv management in one primary online facility.

Reduced maintenance costs.

Increased likelihood of regular BMP maintenance.

If you can implement ESD to the MEP, and spread out the required volume over the site, you could potentially gain density because you don't need to reserve large pieces of land for SWM ponds.

No Benefits

Not sure if there are any yet.

None.

At this time its unclear when you look at total project costs, and not just SWM costs.

I don't see any benefits. ESD is chewing up more land to do the same program.

Other Comments

It is a great question and deserves merit and response from MDE or local project approving agencies. In general, it appears, MDE's focus is towards maintaining pre-developed conditions to the extent possible.

The ideology is good, treat at the source. As with many regulations, the distinction of professional acumen vs specific step by step regulations causes the big picture benefits to get lost.

Verbatim Responses to Question 6: Redevelopment offers the possibility of improving the quality of many urban waterways through retrofits designed to treat runoff from existing impervious surfaces. Of course increasing the amount of impervious area treated raises redevelopment costs. Are there any incentives or other approaches that could accelerate retrofits by off-setting these costs?

Tax Credits

Perhaps tax credits offered by the local governments on properties where retrofitting SWM facilities is required to implement redevelopment projects.

Incentives based on tax credits may help. Typically, re-development projects are not exempt under MCDPS criteria.

There needs to be some type of financial incentives, like tax credits. Several commercial property owners that I've talked with have decided not to expand an existing structure because of the SWM cost versus purchasing an existing building elsewhere.

Tax breaks, reduction in impact fees, etc

Property tax incentives.

Tax credits.

Tax incentives.

Incentives for pervious paving materials.

Fee-In-Lieu

Establish consistent criteria for fee-in-lieu in established urban areas that is mandated to go toward retrofits.

Relax ESD For Redevelopment

Think of it this way...if a site exists, its environmental impact is established, with SWM or without. Any redevelopment regulation that imposes increased costs to adaptively re-use a site will discourage its re-development. When this happens, developers will move to green field sites and the potential re-development site will still remain, now there are two sites that are developed and have environmental impacts. Imposing ESD impervious threshold regulations on re-development goes against the simple, and important, goals of smart growth, adaptive re-use, recycle and re-use. The requirements for re-development should be lessened, to foster adaptive re-use of existing sites, while allowing the AHJ to consider the many aspects of re-development,

not just those regarding the environment. Any increase in impervious area should be treated, as the previous regulations required.

I think we have to be very careful to make sure we keep the ESD costs for redevelopment down so redevelopment areas remain attractive. I think jurisdictions must be flexible relative to the degree of treatment for previously untreated impervious surfaces.

Stormwater Fee/Utility

If there is a storm water fee structure, reductions in the fee could be offered for treatment

I favor stormwater utilities, where developments that do not have stormwater controls pay a fee until such a time as they implement stormwater controls. This levels the playing field such that older, polluting development is funding improvements that offset the pollution they generate.

Redevelopment projects could receive partial grants from the proceeds of the stormwater utility if they choose to make improvements on-site. Other funds would be used to create regional treatment facilities.

This is one of the most difficult aspects of stormwater management as it pertains to improving the aquatic resources. It is essentially determining who should pay for past errors. The incentives should be localized so those that are gaining the benefit of the improvements are also sharing in the costs. There is more accountability and monitoring of the spending if we are able to watch where the money is going.

I have always wished for free market economic incentives to drive better environmental stewardship. However, there seems to be no avoiding the prevailing system, which is based upon regulatory frameworks and enforcement mechanisms. One option I would suggest is to apply an impact fee to all existing property. Those properties in areas with no SWM would pay more than communities that utilize good SWM practices. Individual property owners could reduce their impact fees by installing retrofits or changing some of the more harmful practices.

I would propose a regional approach to redevelopment and water quality measures. If the local jurisdiction was promoting an area for redevelopment, the jurisdiction should front fund a regional water quality facility and charge those in the drainage area a fee to offset the costs.

A SW utility fee.

Off-Site Mitigation

Making retrofitting a facility within a watershed a mitigation option for sites having difficulty meeting the requirements of ESD.

If I understand the questions correctly, maybe allow or consider areas or adjacent areas for existing pavement removal during the concept phase.

ESD May Enhance Redevelopment Property Value Sufficiently to Offset Cost

Why does it have to increase cost? Think of it as changing the approach of design. A beautifully designed landscape is good for business; I don't think having the design actually perform a function cost anymore money.

The return of vegetation through ESD landscaping offers more aesthetic working & site conditions, creating higher value properties.

Make Green Field Development More Costly

Make green field development more costly. Think about it differently in the first place. The fact there is no treatment is going to cost taxpayers billions in the long run in order to meet TMDLs.

Incentives Urgently Needed

ESD for development is a problem as it is a disincentive towards smart growth. ESD is much less expensive and easier on undeveloped sites. Incentives are urgently needed!

Public Recognition for Good ESD Projects

Signs recognizing property for its positive environmental impact. Community recognition.

Credit System

Selling credits for SWM within watersheds, in channel stream vs. restoration and other floodplain wetland banking options.

Handle at Municipal Level

Needs to be handled at the local municipality level. Incentives should depend on redevelopment needs within the local areas.

None

Not that we are aware of.

Have not done any redevelopment work under ESD yet.

I do not know.

Not that I'm aware of.

Verbatim Responses to Question 7: Are there any other thoughts you'd like to add?

Too Early To Assess ESD Pros and Cons

The new ESD requirements are still just that, they are new and have had limited usage thus far.

With the economic downturn there has also been limited projects to require ESD as well.

The more people we have to deal with, provide housing, institutional, industrial, recreational, and educational infrastructure, the more stress that will be put on the natural environment. ESD is certainly one way to try to mitigate the effects of inevitable increases in impermeable surfaces as a result of the development process.

Keep ESD Simple + More Flexibility

I think that the simpler we can keep ESD the more likely it will succeed in improving the water resources for which it was intended.

The development of land has been complicated not only w/ ESD - 3 step process including appropriate soil borings and geotechnical reports, loss of some options to address SWM, and difficulty of predicting costs.

The new law explores some good ideas, but effectively limits the ingenuity of the engineer by placing too many strict requirements on size/location for the ESD practices.

Cost Equity

We need to encourage the mentality that everyone needs to pay their stormwater bill in the same way we pay for sewer and water. All three relate to the environmental health of the ecosystem that sustains us. We cannot conquer nature as was the mindset in the past. We are sustained by nature.

In favor of allowing developers to pay a fee to benefit County/State stormwater projects.

Transfer of bonded facilities from Developer to Builder to Homeowner is unclear.

Easement for Each BMP a Problem

Some counties are requiring easements over every micro-scale facility including pervious pavement and green roofs. This is an issue especially on custom residential lots when you usually don't know your building or driveway footprint when you are obtaining SWM approval. Therefore, these easements may limit the size and location of your house or driveway. I also foresee this being a maintenance and inspection nightmare.

ESD May Be The Right Direction

Generally, I think ESD is a good plan for improving our regions water quality and benefitting project development towards more aesthetically directed stormwater management.

Survey Should Be Repeated

You may wish to repeat this survey after a year or two.

Might be interesting to do this survey again in about 2 years- because of the slowdown in work and the recent implementation of the ESD program, we are still getting a feel for how it applies to different projects and different review agencies.

Other Thoughts

ESD is but one part in a watershed approach to watershed restoration!

I look forward to working through the process and achieving the goals.

I hope this helped.

Thanks for the opportunity to respond. For any further discussion or insight I can provide, I am available.

No at this time, thanks though.

N/A