



OFFICE OF ADVOCACY
U.S. SMALL BUSINESS ADMINISTRATION
WASHINGTON, DC 20416

March 30, 2004

Mr. Benjamin Grumbles
Acting Assistant Administrator
Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

Re: EPA's Final Determination on Effluent Limitation Guidelines and New Source Performance Standards for the Construction and Development Category; Proposed Rule; 67 Fed. Reg. 42644 (Docket No. W-02-06).

Dear Mr. Grumbles:

The Office of Advocacy (Advocacy) was created pursuant to Pub. L. 94-305 to represent the views and interests of small business in Federal policy making. Advocacy is an independent office within the U.S. Small Business Administration (SBA), so the views expressed by Advocacy do not necessarily reflect the views of the SBA or the Administration.

Advocacy submits this comment in anticipation of the Environmental Protection Agency's (EPA) pending final action on the proposed construction and development (C&D) effluent limitations guidelines. As you know, the draft proposed rule was the subject of a small business advocacy review panel (panel or SBREFA panel) in 2001 under Section 609 of the Regulatory Flexibility Act, as amended by the Small Business Regulatory and Enforcement Fairness Act (SBREFA). Consistent with the recommendations in the final report of the SBREFA panel, EPA explored several regulatory alternatives in the drafting of the proposal, published on June 24, 2002. As we indicated on behalf of small entities during the SBREFA panel, we strongly urge EPA to improve education and enforcement efforts in support of the existing Federal and state storm water permitting programs, and not burden state regulators, construction firms, and the public with unnecessary overlapping Federal effluent guidelines. As discussed below, the evidence now in the public record in response to the EPA proposal has reinforced the views that Advocacy expressed during the SBREFA panel, and during discussions with other Federal agencies during review of the EPA draft proposal. Consistent with the panel recommendations, and sound public policy, we ask EPA to implement the no regulation option and revisit this issue when EPA can fully evaluate the costs and benefits of the Federal Phase II storm water program.

The C&D proposed rule contained three options: two options to regulate pre-stabilization construction projects ("active construction projects"), and one option to work with the states and local jurisdictions to strengthen the implementation of the current storm water programs. The proposal was aimed at construction firms disturbing one or more acres in a project to manage

storm water to protect water quality. These requirements include the construction of measures to prevent erosion of sediment at the construction site and to reduce water flow to limit downstream erosion during the life of these projects (active project requirements, in contrast to post-construction requirements addressed below). These requirements would be implemented through a variety of best management practices that have been developed by industry and EPA over several decades. These effluent guidelines also establish minimum standards for local and state permit writers, and are in addition to the Federal permitting standards for the same construction sites under the Phase I and Phase II storm water program, which also established minimum standards, with some flexibility, for the permit writers. The Phase II rule, enacted in 1999, only became effective last year. As indicated during the SBREFA process, the panel was concerned that new requirements will add complexity and cost to the current requirements, without a corresponding water quality benefit.¹

EPA should be extremely cautious in considering potentially onerous requirements on the construction industry, which accounts for about 5% of GNP. In the 1999 rulemaking, EPA estimated that Phase II alone would impose costs of \$800 million annually.² The National Association of Home Builders (NAHB), using survey data from its members, calculated a cost of \$6,400 per home to home buyers for the cost of the current program.³ We question whether additional expenditures are warranted when the Phase II requirements commenced only last year. Under these circumstances, we would oppose the imposition of a new C&D effluent limitations rule, with an EPA estimated cost of \$505 million annually,⁴ until a study has been completed about the existing program, consistent with the panel report's recommendations. We advise against adding a \$505 million cost without knowing whether the requirements are entirely duplicative or whether the requirements will reduce pollution.

I. Consistent with the SBREFA Panel's Recommendation, EPA Should Improve Implementation of the Current Regulatory Scheme and Not Impose New Overlapping and Potentially Costly and Complex Requirements on the Construction Industry.

Given that Phase II had not yet gone into effect in 2001 (effective in 2003), the panel recommended that EPA carefully consider whether it would be appropriate to propose a C&D rule before the effect of both Phase I and Phase II requirements could be evaluated. There was considerable agreement by EPA and industry that the current requirements, if properly implemented, would yield substantial storm water benefits.⁵ EPA agreed to evaluate the incremental costs and benefits of the additional requirements before going forward with new requirements. However, EPA has not yet been able to evaluate the costs and benefits of the new requirements, given that the Phase II program has just started. As a result, no additional C&D requirements can be justified now in accordance with the panel report recommendations.

¹ “[Final Report of the SBREFA Small Business Advocacy Review Panel on EPA's Planned Proposed Rule for Effluent Limitation Guidelines and Standards for the Construction and Development Industry](#),” October 12, 2001. [hereinafter “Panel Report”]. The Panel Report is available at http://www.sba.gov/advo/laws/is_constrprt01.pdf.

² Economic Analysis of Final Phase II Storm Water Rule, July 2, 1999 Initial Final Draft, p. 7-3.

³ Comments in Response to EPA's Estimation of Capital Costs for Technology Options, David Crowe, NAHB, April 11, 2002, Table 2, p. 13.

⁴ This letter was revised on March 31, 2004, to remove incorrect references to the cost as being \$1 billion.

⁵ EPA estimated benefits to be in the neighborhood of \$1 billion annually. *Id.*

Most importantly, the panel agreed that the costs and benefits data presented during the SBREFA panel to the small entity representatives (SERs) needed substantial work to address a plethora of errors, omissions, and other problems cited in the panel report in the summer of 2001. For example, EPA estimated the cost of its draft proposed controls at less than \$100/acre, whereas one SER estimated the same controls at \$11,000/acre. The agency committed to addressing the criticisms of the SERs, the panel report, and the EPA-designated peer reviewers in the proposal. We have been unable to determine independently whether these criticisms were appropriately addressed by the new EPA analyses that accompanied the proposal. However, based on the written comment, we conclude that many of the problems identified in the SBREFA panel report remained uncorrected at the time of proposal. We remain concerned that EPA's burden estimate of \$505 million annually is too low.

II. Additional Education, Outreach and Compliance Assistance Is a Better Solution to the Storm Water Problem than New Federal Requirements

As discussed in the panel report, the evidence available to the panel showed that the primary problem is not the lack of regulatory stringency or more regulation, but inadequate compliance with current requirements by the construction industry.

The Panel agrees that implementation of erosion and sediment controls is difficult due to many factors, including lack of knowledge of appropriate technologies and applicable requirements by subcontractors and lack of regular maintenance by the owner/operator. . . . The Panel agrees with SER commenters that increased attention to education and outreach, compliance assistance, regular inspection of installed BMPs [best management practices], and appropriate enforcement of existing requirements may prove a more effective means of enhancing sediment and erosion and post-development runoff control than adding a new layer of Federal regulatory requirements.⁶

The panel agreed that EPA needed to address the problem and consider whether additional requirements would be the correct solution to remedy this problem. We must conclude, on the information available to us, that increased education and compliance activities are the appropriate resolution of the storm water problem.⁷

Furthermore, as of October 2001, upon completion of the panel report, EPA had not yet evaluated the efforts of Phase I, let alone Phase II, but committed to doing so in the panel report in order to evaluate whether effluent guidelines would be beneficial.⁸ The most prudent course

⁶ Panel Report, p. 24.

⁷ Ismail Ozbeck, a planning engineer for the County of Lexington, South Carolina advised the SBREFA panel “[h]aving just reviewed the material you sent me, . . . I did not find anything that was not addressed by current regulations and the NPDES phase I and II programs in progress. However, there is a lot that can be done with the implementation, education and enforcement of the existing programs. Based on our experience in Lexington County, we learned that most water quality problems were not due to poor design or performance of the best management practices but poor installation and maintenance of these measures. . . . In my opinion, instead of developing new regulations EPA should focus on improving the plan implementation by assisting in the education process of the contractors, inspectors and design professionals.”

⁸ Panel Report, page 28.

would be to first evaluate the benefits of the current requirements, rather than add additional complexity and cost to storm water compliance, with little evidence that environmental benefits would result.

III. The Current Phase I and Phase II Storm Water Requirements Are Costly and Already Deliver Substantial Benefits.

During the panel process, virtually every SER described the stringency of the current requirements as being more than adequate to address storm water issues. The NAHB, as cited above, estimated that the cost of a typical home built by NAHB member companies had already increased by \$6,400 in 2001 as a result of the storm water regulations. There are likely to be comparable increases in the cost of transportation and other critical infrastructure construction projects. Given the fact that construction is such a major part of the US economy, such costs need to be carefully examined. We discuss elsewhere in this letter the benefits of the current program.

IV. The Federal Government Should Not Unnecessarily Preempt the Authority of State and Local Governments to Set Their Own Storm Water Standards and Determine Local Budgets.

EPA's action of raising the minimum requirement across the country has the effect of substituting Federal standards for local standards. Under the Phase I and II programs, state and local authorities have some flexibility to account for a variety of land uses, consistent with water quality goals. Local jurisdictions now determine how to deploy their scarce resources to assure that water quality goals are met. EPA's C&D rule threatens local planning, and may conflict with local budgetary needs.

For example, the one-year peak release requirements could cause havoc with local and state government planning. Even the agency has acknowledged that its peak release requirements may not be consistent with local zoning, and may contribute to other problems, such as ground water contamination. EPA has stated that many local communities do not even allow low impact development that EPA is relying on to lower costs significantly, although the agency does believe that many of these communities would change their practice after learning of the new C&D requirements. This was one of the reasons the agency excluded this post-construction requirement from consideration in the proposal.⁹

During the SBREFA process, local government representatives advised the panel that they did not want a third set of Federal requirements to be layered on top of the existing local and state requirements.¹⁰ In addition, the 1990 Coastal Zone legislative amendments specifically provided that the 80% total suspended solids (TSS) requirement be applied in US coastal zones, where there are significant aquatic resources to preserve and did not require them in noncoastal America. The agency is now extending through regulation requirements that the Congress chose not to impose in noncoastal areas, where we are not protecting resources like the Chesapeake Bay.

⁹ 67 Fed. Reg. 42660 (June 24, 2002).

¹⁰ See footnote 7, for example.

Storm water management is a classic example of where local authorities are best able to determine what is best for the local community, and where additional Federal mandates are inappropriate. Storm water control has been a matter of local concern and expertise for decades. Storm water planning is also intimately tied to local zoning and land use planning, a traditional state and local function. Lastly, the intrusion of Federal authority could result in substantial impact on local government funding, which the Federal government is not proposing to provide – an apparent unfunded mandate. Unless the Clean Water Act clearly requires the imposition of these new requirements, this new regulation does not appear warranted, particularly so soon after the full initial implementation of the second phase of the Federal program.

V. EPA Properly Rejected Costly Post-Construction Standards from the Regulatory Options Considered in the Proposal.

As EPA stated in the proposal, EPA considered and rejected consideration of several regulatory options for controlling long-term storm water discharges (discharges that occur after project completion) from development projects.¹¹ Post-construction measures are also required under the current Phase II storm water program.¹² As with the newly promulgated national active construction regulations addressed above, Advocacy supported EPA's 2002 determination to reject another layer of potentially conflicting post-construction requirements, without any clear benefits. However, the case against additional post-construction standards is much stronger than the case against additional active construction standards discussed above, which explains why such provisions were eliminated from consideration at the time EPA developed its proposed rule. Five additional objections that apply uniquely to post-construction standards add additional support for EPA's original judgment: (1) these are very costly measures with small benefits, (2) compliance with post-construction standards can be difficult and may conflict with local land use planning, (3) the cost of homeownership will increase by about \$3,800, (4) the costs of the program exceeds the benefits, and (5) a variety of safety hazards are presented by the implementation of these standards.

A. The post-construction measures are costly, with questionable benefits.

EPA initially considered two potentially costly storm water requirements: (1) achievement of an 80% reduction of total suspended solids (TSS) in annual discharge; and (2) regulation of the peak discharge flow from the one-year 24-hour storm (rainfall event that occurs with an average frequency of once per year). These requirements supplement the current requirements, and may not be justified by water quality concerns. Indeed, in the 1996 EPA Water Quality Report, only 2% of all stream miles were listed as impaired due to construction sites. These new requirements are very similar to the requirements of the State of Maryland, a state that spends substantial resources on water quality, particularly as a steward of the Chesapeake Bay. Such an investment may not be as affordable, or appropriate in other states, however. Indeed, the Clean Water Act relies on strong state programs, where appropriate, for effective implementation of clean water goals. Lastly, EPA has established total maximum daily loads (TMDL) that further addresses

¹¹ 67 Fed. Reg. 42660 (June 24, 2002).

¹² The post-construction requirements are discussed in *Storm Water Phase II Compliance Assistance Guide* at 5-10. (EPA 833-R-00-002, March 2000).

local waters that may be impaired by TSS, which can provide appropriate site-specific flexibility, instead of a single national Federal minimum.

EPA had estimated the costs of the new requirements at \$3.3 billion annually, and assumed a \$1.7 billion savings due to the implementation of low impact development measures. However, it was not clear whether most of these “savings” are real, because, if they are, then the builders would already be utilizing the low impact measures and pocketing the “savings” accounted for in the EPA calculations to lower their own costs. Equally importantly, the \$1.7 billion in additional benefits claimed in the new analysis have not yet been clearly established by the agency.¹³ Even with EPA’s apparently optimistic projections, the quantified costs far exceed the quantified benefits of this rule, and the agency does not project significant non-quantified benefits to fill the gap.

B. Post-construction requirements may not be technically feasible.

Various commenters have described the substantial technical difficulties that would result if all construction sites nationwide were required to comply with the post-construction standards that EPA had considered establishing as a Federal minimum.¹⁴ We have been unable to locate any local requirements to limit post-construction discharges to pre-construction discharges, which we believe suggests the technical difficulty of doing so in many settings.¹⁵ Therefore, setting these requirements as a Federal minimum standard, on its face, appears problematic.

C. The cost of homeownership was estimated to increase by an average of \$3,800 as a result of these post-construction standards.

At proposal, EPA estimated that the homeowners would be required to spend \$16/month on average to maintain post-construction storm water controls. Using the discount rate of 7%, as specified in OMB Circular A-4, over an indefinite period, \$16/month translates into a net present value of \$2,935. Adding the EPA proposal estimate of the up-front increase in the average home price of \$858, yields a total price increase of \$3,792. This increase would have a large negative impact on housing affordability. NAHB, in its comments, stated that the 2002 Census projects that for every \$1,000 increase in the cost of a median-priced home, 424,413 households are priced out of the market.¹⁶

¹³ The enormously large benefits estimate of these post-construction provisions is based almost entirely on a category of benefits that didn’t even appear in the benefits analysis in the phase II rulemaking. Ninety-nine percent of these benefits are based on the restoration of approximately 1000 stream miles of habitat because of the new requirements, based on an examination of property value appreciation in a few extremely wealthy counties in California. For additional discussion of the post-construction measures see separate memorandum from Advocacy’s Kevin Bromberg to Marvin Rubin, EPA, Office of Water.

¹⁴ See for example, comments of the ELG Work Group, December 23, 2002, pages 32-35.

¹⁵ The requirements in this area that do exist that we discovered all provided for exemptions from the requirement on a case-by-case basis, further implying the inappropriateness of an inflexible Federal standard.

¹⁶ National Association of Home Builders comments, December 20, 2002, page 2.

D. The costs of the post-construction standards exceed the benefits.

In the analysis underlying the preamble to the proposed rule, the benefits were stated as \$1.1 billion annually, assuming \$1.7 billion annual cost savings, and costs estimated at \$3.3 billion.¹⁷ Thus, EPA concluded at the time of proposal, that the costs exceeded the benefits. However, there is a memorandum drafted by ERG,¹⁸ an EPA contractor, placed in the record shortly before publication of the proposed rule, that alleges benefits of approximately \$3-5 billion/year, instead of \$1.1 billion/year, which was the figure relied upon by EPA and shared with the Office of Advocacy during discussions on the draft proposal. The ERG memorandum has serious errors, resulting in wide overestimates of the benefits. After further review, we can reconfirm EPA's initial conclusion that the costs still exceed the benefits of the post-construction controls. According to ERG's analysis, ninety-nine percent of the benefits are based on a single analysis of stream restoration costs. Among the errors in the ERG's analysis are: (1) the model overestimates the number of affected stream miles in the US, and (2) the model overestimates the benefit/stream mile of stream restoration.

E. Safety hazards are exacerbated by post-construction standards.

In order to achieve these post-construction standards in the least costly way, EPA assumed that builders would choose low impact development (LID) practices, as mentioned above. These practices involve the use of open storm water detention ponds, instead of underground storm sewers, creating pools of standing water, with the accompanying safety hazard of creating an attractive nuisance for young children. We reviewed newspaper articles that describe unfortunate drowning incidents involving storm water detention ponds.¹⁹ Although storm water engineers generally consider it possible to minimize (although not eliminate) this hazard, several communities have unfortunately failed to commit the financial resources to protect their children from the hazard, with tragic results. We have also reviewed articles and a report located on the Internet documenting concerns about the West Nile hazards from mosquitoes that accompany these detention ponds.²⁰ Lastly, the LID design incorporates narrower streets, and streets without sidewalks, which does potentially compromise pedestrian safety, and reduces access for emergency vehicles in the effort to reduce stream erosion. This triple threat to public safety was properly avoided by EPA's early decision to allow the state and local authorities to address post-construction controls under the current Phase I and II storm water permitting programs.

¹⁷ April 5, 2001 draft EPA preamble to Proposed Effluent Limitation Guidelines and New Source Performance Standards for the Construction and Development Category proposal preamble, Effluent Limitation Guidelines and New Source Performance Standards for the Construction and Development Category.

¹⁸ May 2, 2002 Memorandum, Laughland and Cantin, ERG to Denning and Bouwes, EPA, "Timing in the Construction and Development Benefits Assessment – Revised."

¹⁹ For instance, see, Bill O'Brien, "Barrington Schools Receive Approval of Renovation Plans," CHICAGO DAILY HERALD; Nov. 10, 1998, at C3, and Laurel Walker, "Keeping a Child Safe is Luck Sometimes," THE MILWAUKEE JOURNAL SENTINEL; March 8, 2002, at 01B.

²⁰ Jennifer Langston, "West Nile Plans Being Hatched Counties Working to Control Mosquitoes, Overcome Opposition," THE SEATTLE POST-INTELLIGENCER, March 24, 2003, at B2. See also, Ada Wossink and Bill Hunt, "The Economics of Structural Stormwater BMPs in North Carolina," May 2003, page 1, available at http://www2.ncsu.edu/unity/lockers/users/g/gawossin/Structural_Stormwater_BMPs.pdf.

VI. Conclusion

The final section of the SBREFA panel report states, “[t]he Panel also recommends that EPA proceed with the development of proposed effluent guidelines, but that in doing so, keep open the option of ultimately declining to promulgate final guidelines until the effectiveness of Phase I and Phase II, without national effluent guidelines, can be more fully evaluated.”²¹ When this analysis is completed, EPA should re-evaluate whether additional measures are warranted. A decision to continue to implement the current program at this time without adding duplicative new federal requirements is mandated by the confluence of many factors: the high costs of the regulatory alternatives, the speculative benefits from additional overlapping regulations, the flexibility and efficiencies offered by the current state/Federal partnership, the value of avoiding interference with local planning, technical feasibility concerns, the negative impact on home ownership, and public safety concerns.

If you have any questions or wish to discuss these comments, please feel free to call me at 205-6533, or ask your staff to contact Kevin Bromberg of my staff at kevin.bromberg@sba.gov, or 205-6964.

Sincerely,

/s/

Thomas M. Sullivan
Chief Counsel for Advocacy

/s/

Kevin Bromberg
Assistant Chief Counsel for Advocacy

Cc: Dr. John Graham, Administrator, Office of Information and Regulatory Affairs

²¹ Panel Report, page 28.

Memorandum

Date: March 30, 2004

To: Marvin Rubin

From: Kevin Bromberg

Subject: Analysis of May 2, 2002 ERG Memorandum Regarding Post-Construction Costs and Benefits

We just recently had the opportunity to review a contractor memorandum (ERG) addressing the benefits analysis for the post-construction measures portion of the construction and development draft proposed rule. The May 2, 2002, ERG memorandum, prepared late in the interagency review of the C&D proposed rule, corrects two errors in a previous stream restoration benefits analysis. The ERG memo shows revised “best” estimates of \$3.2 billion (3% discount rate) and \$5.0 billion (7% discount rate) annually, and thus is about three to five times higher than the earlier estimate of \$1.1 billion of benefits upon which the earlier interagency discussions were based. We did not have an opportunity to review the ERG memorandum and identify problems with this analysis during the interagency review of the draft proposed rule.

Had Advocacy reviewed this memorandum earlier, we would have raised the following problems with the analysis. Instead, we relied on the \$1.1 billion that EPA presented in the early discussions. In the end, however, we draw the same conclusion that we drew based on the \$1.1 billion estimate: the costs of post-construction controls substantially exceeds the benefits.

First, even if the ERG estimate were accurate, the costs of \$3.3 billion at the 7% discount rate (EPA’s post-construction costs at proposal) is still higher than the \$3.1 billion “best” estimate of benefits, using the same discount rate. Once we account for the large underestimated costs described by commenters and the hidden costs associated with the lost consumer surplus related to post-construction controls (fewer sidewalks, narrower streets, various health and safety risks, areas of standing water instead of underground sewers), even under the new ERG analysis costs significantly outweigh the benefits.

Second, we note that the original cost estimate included a \$1.7 billion cost “offset” for the infrastructure savings associated with not building sidewalks, sewers, etc. However, according to standard economic theory, if these amenities are provided by the market then the value consumers place on them must be at least equal to the cost. If they provide any surplus at all, then the \$3.3 billion cost estimate, without subtracting this offset, is still an underestimate of true social costs.

Third, the following modeling errors combine to inflate the size of the benefits, as estimated by ERG:

A. There appears to be an error in the acreage on which the ERG estimate of affected stream miles was based. The benefits estimate in the ERG memo is based on an assumption of 989 total miles of perennial streams affected by development, of which 24% are assumed to be in states that already have effective programs, leaving 751.7 miles of perennial streams that would be protected by the new requirements in Option 2. The 989 mile estimate is derived in Chapter 3 of EPA's Environmental Assessment¹ and includes all affected perennial streams within the 2.2 million acres that are developed annually.² However, according to Table 4-16 in EPA's Economic Analysis,³ only 24.4% of this total, or 534,000 acres, is accounted for by single family home residential construction. Another 11.5%, or 252,000 acres, is accounted for by multifamily residential construction. The estimates in the ERG memo are based on increases in property values to single family homes only. Thus, the true number of stream miles on which these estimates should be based is 24.4% x 751.7 miles, or 183 miles. This will yield a decreased benefits estimate for stream habitat preservation of \$686 million, using the same 7% discount rate that is used for the cost estimates, and a total benefits estimate of \$1.04 billion. Even assuming that comparable increases in property value on a per acre basis would occur for multifamily dwellings, the revised benefits estimate for stream preservation would be \$1 billion, and total benefits would be \$1.37 billion. Both of these estimates are well below the \$3.3 billion cost estimate.

B. The results in the Streiner/ Loomis studies were used in a way that likely overstates the benefits of post-construction Option 2. Streiner and Loomis identified two basic categories of restoration measures, which they referred to as Restoration Packages A and B. Package A included improved fish habitat, land acquisition and, education trails, while Package B included bank stabilization, reduced flood damage, general clean-up and removal of obstructions, and revegetation. Not surprisingly, the increased property values associated with proximity to a Package A stream were 3-4 times higher than those associated with a Package B stream. Package A represents a public-access restored stream corridor with a nature trail, while Package B is limited to less evident technical improvements in the ecology and stability of the stream bed itself. It seems clear that the effects of post-construction Option 2 would be closer to Package B than Package A. However, most of the benefits in the ERG analysis are attributed to houses near streams that ERG assumes would experience results "much like those in Streiner's 'Restoration Package A' with high quality fish habitat." The memo estimates that about 30% of stream miles would experience such results, but these stream miles account for 70% of the estimated benefits, or about \$21,000 in added property value per house within 1,000 feet of the stream. By contrast, the value of the benefits in Package B are about \$6,000 per house. If the property value increase

¹ Environmental Assessment for Proposed Effluent Guidelines and Standards for the Construction and Development Category, USEPA, June 2002, Table 3-7, p 3-16.

² Streams in Florida and the Mississippi Delta are omitted from this estimate for technical reasons, see *Ibid*, p 3-17.

³ Economic Analysis of Construction and Development Proposed Effluent Guidelines, USEPA, May 2002, Table 4-16, p 4-54.

of Package B is instead attributed to the 30% of houses to which the ERG memo attributed the property value increase of Package A, the benefits of stream restoration (after also making the stream miles correction discussed above) drop to \$340 to \$500 million, depending on whether benefits are attributed to single family houses only, or to multifamily dwellings as well. Total benefits, discounted at 7%, then become \$700 million to \$1.03 billion.

C. The stream restoration benefit values are based on properties in very high cost residential property areas in Santa Cruz, Contra Costa and Solano Counties in Northern California. These counties may not be representative of other persons' willingness to pay (WTP) for stream improvements in the country as a whole. Even the authors of the underlying research cautioned that these results may not be valid for other geographic areas. The California Association of Realtors reports that the Monterrey area (which includes both Santa Cruz and Contra Costa Counties), had the least affordable housing in the State, with only 14% of the resident households able to afford even a median valued house. This compares with a national average of 59% for January 2004. The WTP of wealthy California residents would likely overstate the WTP elsewhere in the Nation. The ERG study uses the values derived in the Streiner/Loomis studies to represent WTP for stream restoration across the country.

D. There is some question about the results of the underlying Streiner/Loomis studies itself, which is based on an earlier Master's thesis by Streiner. Figure A1 in the thesis shows property differentials based on increasing distance from the stream. In the graph showing the value of bank stabilization, there is a premium of \$12,000 for properties that adjoin the stream, but the same premium appears also for properties that are 3,000 feet away. This result is counterintuitive that property owners more than a half mile away would benefit as much from reduced bank erosion, as those that adjoin the stream. This suggests a problem with the development of the model.