

Update on Expert Study Resources

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It's been 3 months since we started sharing the draft report titled *Structured Invitation for Input from Outside Experts**

I've sent copies to several experts, mostly experts who specialize in erosion – the response to date has been limited.

But I and a couple of others I've contacted have started discussing a fundamental problem with the type of modeling (*landscape evolution modeling*) that was used for the 2010 EIS and also used by the WV Erosion Working Group.

***https://www.westvalleyctf.org/2022_Materials/03/2022-03-22_DRAFT_West_Valley_CTF_Structured_Invitation.pdf**

The problem is that this type of modeling, known as *landscape evolution modeling*, is based on an unrealistic equation.

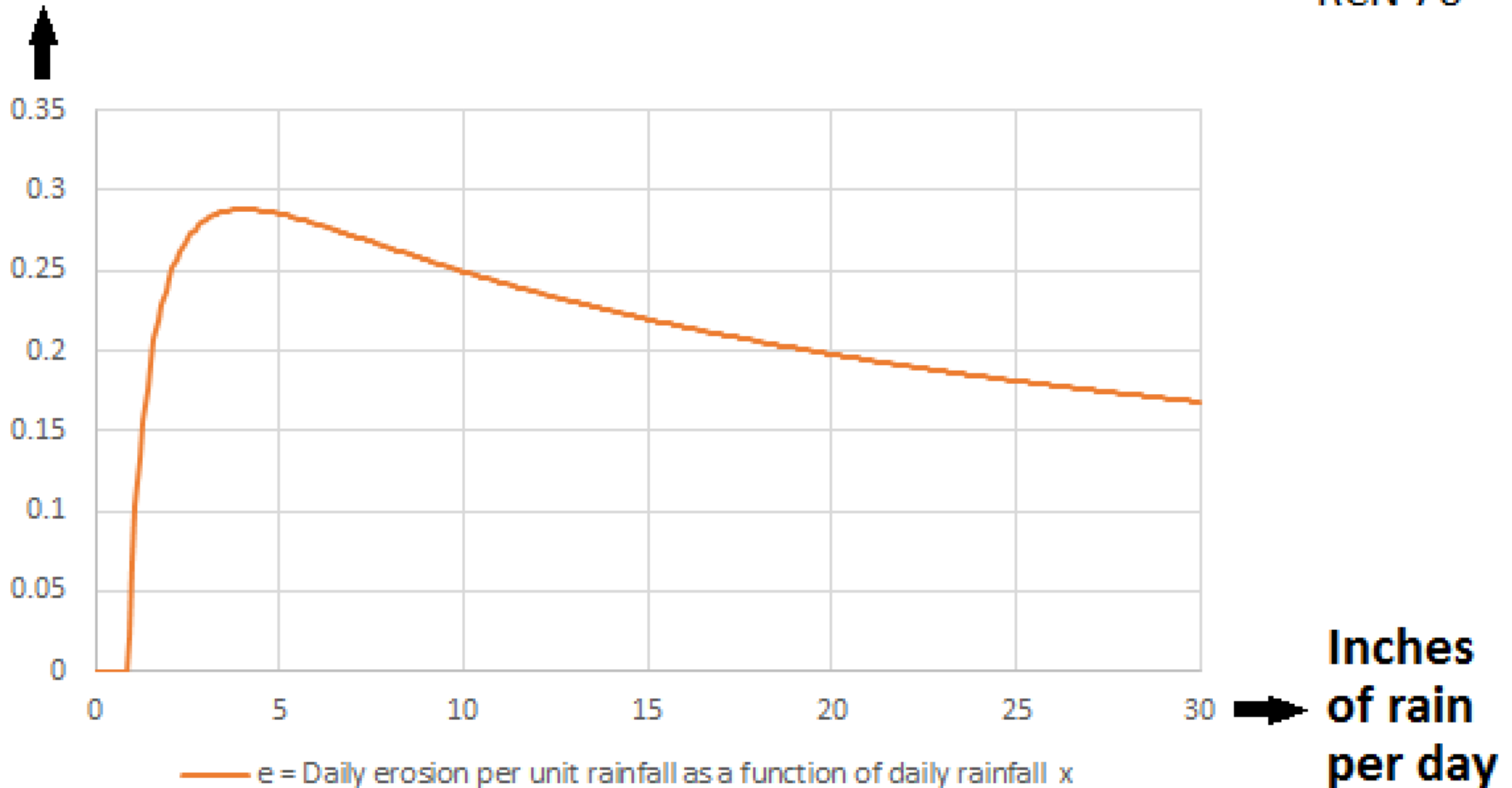
The equation, called the *Stream Power Incision Model* (SPIM), is fundamental – it's the main 'engine' for this type of erosion modeling.

Why hasn't the problem with the SPIM equation been recognized before? Hard to say. But it's one more reminder that abstract models need to be testable against reality. They shouldn't be so abstract that they can't be checked, step by step, against real rainfall, real erosion, etc.

Here's the problem with the SPIM equation:
Models based on the equation predict declining erosiveness as storm intensity increases

Erosion (or erosiveness) per raindrop

Curve for
RCN 70



As we understand, DOE, NYSERDA, & Neptune have been focusing their attention on gully growth because gully growth has been showing more erosion than the modeled erosion from downcutting and widening of the Franks Creek and Erdman Brook channels.

But if the modeling is defective, as we're now seeing, it's no longer clear that gully growth is the dominant erosion process.

The modeling needs to be corrected before we can know which of the two erosion processes poses the greatest risk.

One of the experts I've tried to contact is Greg Tucker at University of Colorado – he did the landscape evolution modeling for the 2010 EIS and similar work in 2005 and, more recently, for the WV Erosion Working Group.

No response yet from Greg – which is unfortunate. We need productive dialogue on crucial issues such as erosion. Waiting to disagree during the comment period for the Phase 2 Draft EIS makes no sense.

I/we need to continue contacting other experts in other fields. In the meantime, we're starting to understand why the modeled erosion in the 2010 EIS is so different from the 1996 DEIS....

1996 Draft EIS

2005 Draft EIS (similar to 2010 Final)

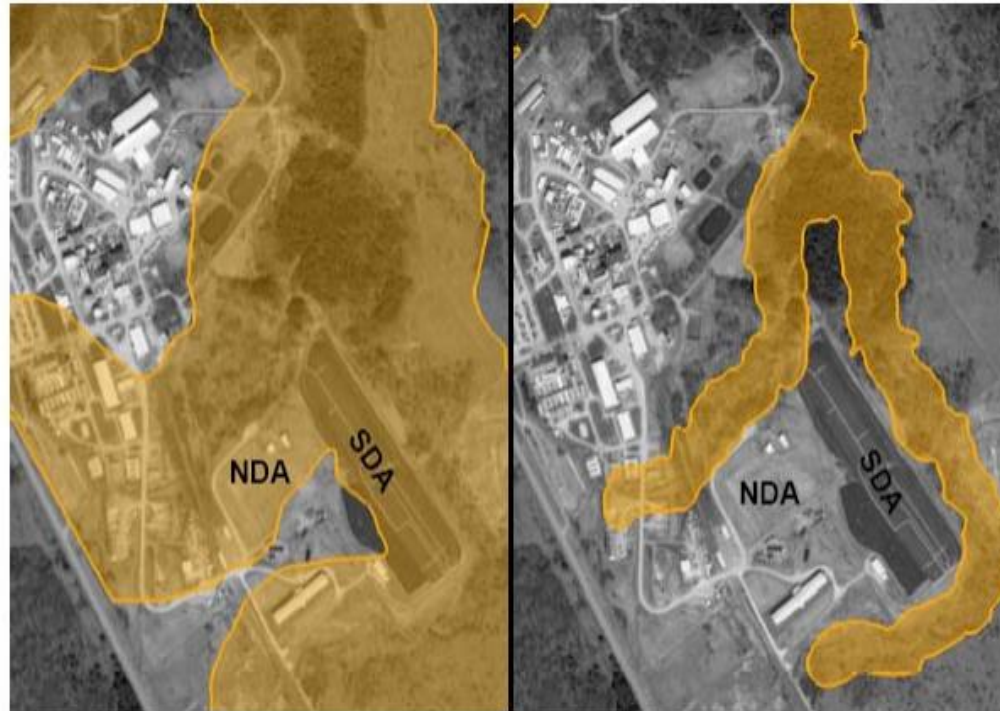


Figure 6.8

Erosion estimates from the 1996 DEIS (left) and the 2005 DEIS (right). The orange area indicates the region which would have eroded significantly in 1000 years. In the 1996 DEIS, the estimates of erosion nearly completely expose both the NRC Disposal Area (NDA) and the State licensed Disposal Area (SDA), while in the 2005 DEIS most of the waste is estimated to remain intact.²¹¹