

Rethinking Construction Stormwater Management

an introduction to the Five Pillars



Barry Fagan, PE/PLS, CPESC, CPMSM, CESSWI, ENV SP
helping good people get better at managing stormwater

Change

creates a sense of incompetence

the Clean Water Act set forth a very real expectation that we get better (aka change)





Change

creates a sense of incompleteness



Change

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MEP

BAT

BMP

NPDES

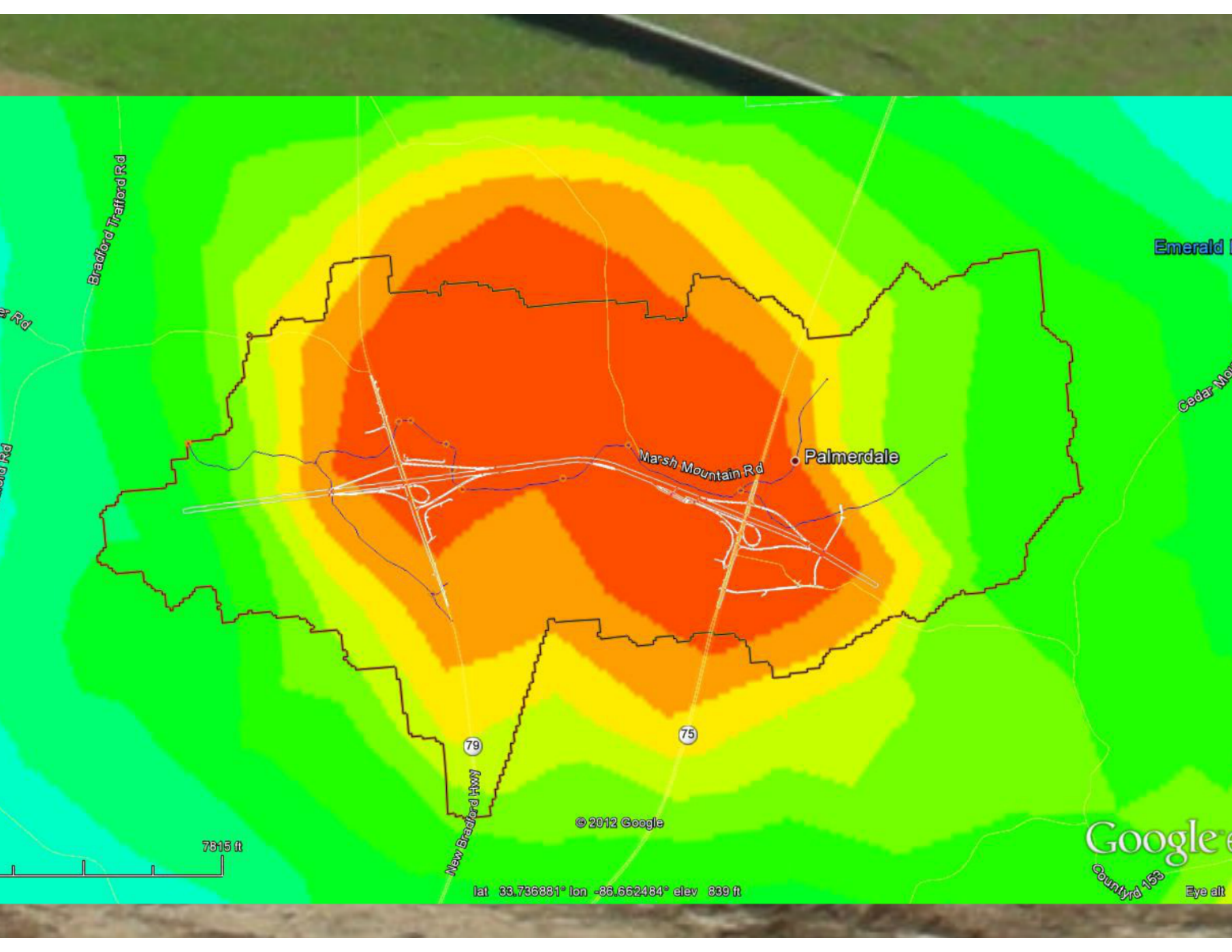
TMDL

Erosion **Control**
Sediment **Control**

enhanced

Best Management Practice

Are we really that good?



Bradford Trafford Rd

Rd

Rd

Emerald I

Cedar Mt

Marsh Mountain Rd

Palmerdale

79

75

New Bradford Hwy

© 2012 Google

7815 ft

lat 33.736881° lon -86.662484° elev 839 ft

Google
County rd 153
Eye alt

- 
- Think
 - Do things in order of Importance

- Dr. John Maxwell



We respond rationally to a world
we understand and recognize,
but no longer exists.

- Eddie Obeng

- 
- Think
 - Do things in order of Importance

- Dr. John Maxwell

ORDER.

managing sediment

symptom-focused

ent

managing erosion

m

source-focused

on

managing water

cause-focused

n

c

An aerial photograph of a construction site, showing a large, rectangular concrete foundation or wall section. A large, thick red circle is superimposed over the center of the image, framing the text. The background is a blue-tinted aerial view of the construction site.

managing work

operation-focused



managing
communication

effectiveness-focused

The Five Pillars

of construction stormwater management

ORDER.

managing sediment

symptom-focused

managing erosion

source-focused

managing water

cause-focused

managing work

operation-focused

managing communication

effectiveness-focused

least effective, most expensive

most effective, least expensive

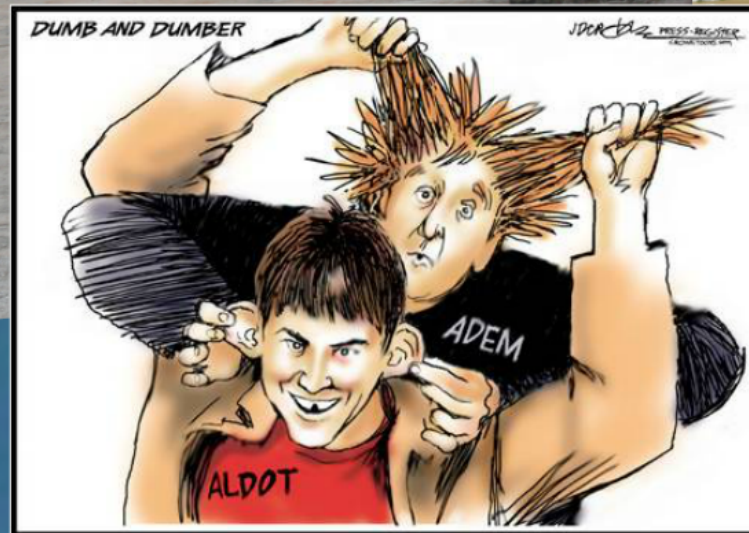


Managing Communication

- THE Best Management Practice

- internal
- external
- contractors

Managing Conflict



Managing Work

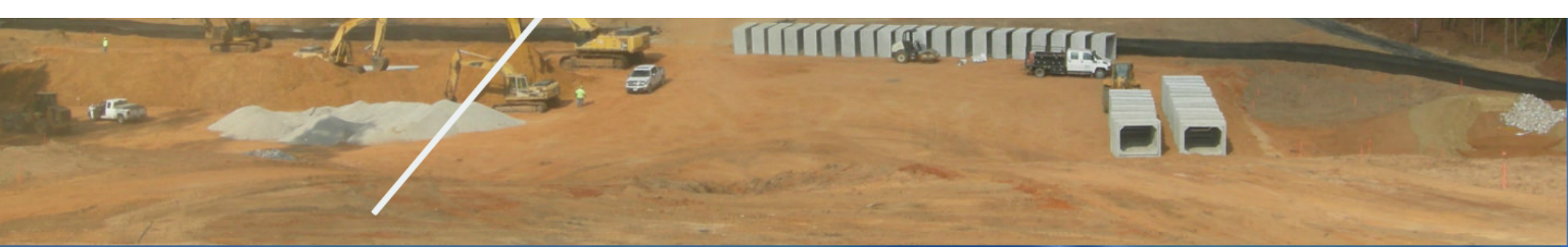
$$A = R K L S C P$$

A = average annual soil loss
(*tons/acre/year*)

Managing Work

contractors can do just about anything.







Managing Water

clean water in, clean water out

diversion



run-on
flow-through
runoff
dewatering

early installation of cross-drain



diversion



Managing Water

clean water in, clean water out

diversion



early installation of cross-drain



Managing Erosion

green is good. do what you have to do,
then get back to stable asap.

existing vegetation is the
most effective/economical
erosion control BMP



Managing Sediment

filtering is a myth. keep the water or at least slow it down.

2x velocity = 4x erosive energy
64x mass transported
32x size of particle transported



Ohio Sediment Basin Design -

- dewatering volume: 1800 cf/ac = 0.5" storm event
- 0.5" storm event = 1 year, 10 minute storm

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