



The  
Myopic Visionary  
Stormwater  
Professional

Barry Fagan

FAGAN

**NC STATE  
UNIVERSITY**

# Roman Engineering Study Tour



# Drinking Water



# Stormwater



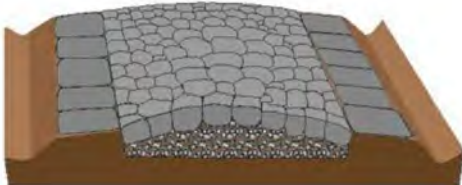
# Stormwater Pantheon Floor Drains



# Stormwater Rainwater Harvesting



# Stormwater Road Drainage



# Stormwater Integrated Planning





# Wastewater



# Wastewater Cloaca Maxima





# My Favorite Part?



“Where you're born has more to do with your future than just about anything else, and that's because of infrastructure.” - Seth Godin

# in·fra·struc·ture -

the basic physical and organizational structures and facilities needed for the operation of a society or enterprise



# storm·wat·er in·fra·struc·ture -

the basic physical and organizational structures and facilities needed for the operation of a society or enterprise



# storm·wat·er in·fra·struc·ture -

“Because at the end of the day, all these cities are competing for talent. And talent is saying, ‘We want to live in a city that is a responsible steward of resources.’”

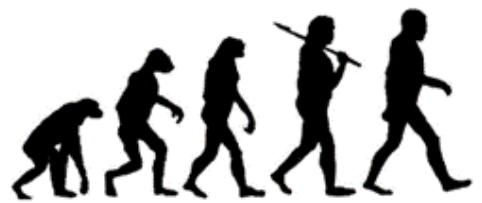
– Feniosky Pena Mora, ASCE International Conference on Sustainability



# con·struc·tion storm·wat·er

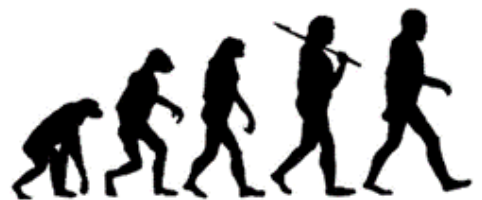






# The **Five Pillars** of Construction Stormwater Management

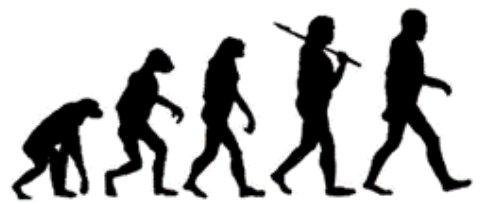




# The **Five Pillars** of Construction Stormwater Management

1. **Manage Communication**
2. **Manage Work**
3. **Manage Water**
4. **Manage Erosion**
5. **Manage Sediment**





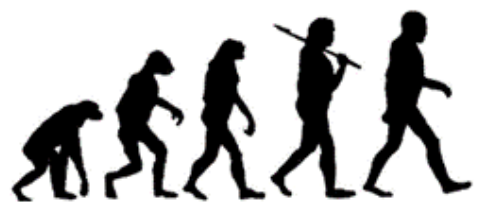
# The **Five Pillars**

## of Construction Stormwater Management

“There’s only two kinds of music  
- the blues and zip-a-dee-doo-dah.”

- Townes Van Zandt





# The **Five Pillars**

## of Construction Stormwater Management

### 1. **Managing Communication**

includes all efforts to convey information among project stakeholders to increase effectiveness in project planning, design, and implementation.





# Managing Communication.

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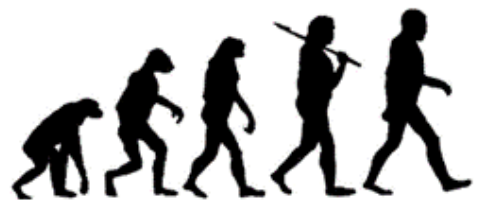
- ▼ Policy, Procedures, and Documentation
- ▼ Construction Stormwater Permit Coverage
- ▼ Compliance Verification and Reporting
- ▼ Environmental Commitment Awareness



# Managing Communication.

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# The **Five Pillars**

# of Construction Stormwater Management

## 2. Managing Work

includes all operational efforts to ensure that work proceeds in a manner that is protective of the owner's interests and their environmental responsibilities.



# Managing Work.

- ▼ Contract Administration
  - ...
- ▼ Construction Operation Sequencing
  - ...
- ▼ Vegetated Buffer Preservation & Establishment
  - ...
- ▼ Topsoil Conservation
  - ...
- ▼ Water Resource and Buffer Encroachment Limitation
  - ...
- ▼ Good Housekeeping
  - ...





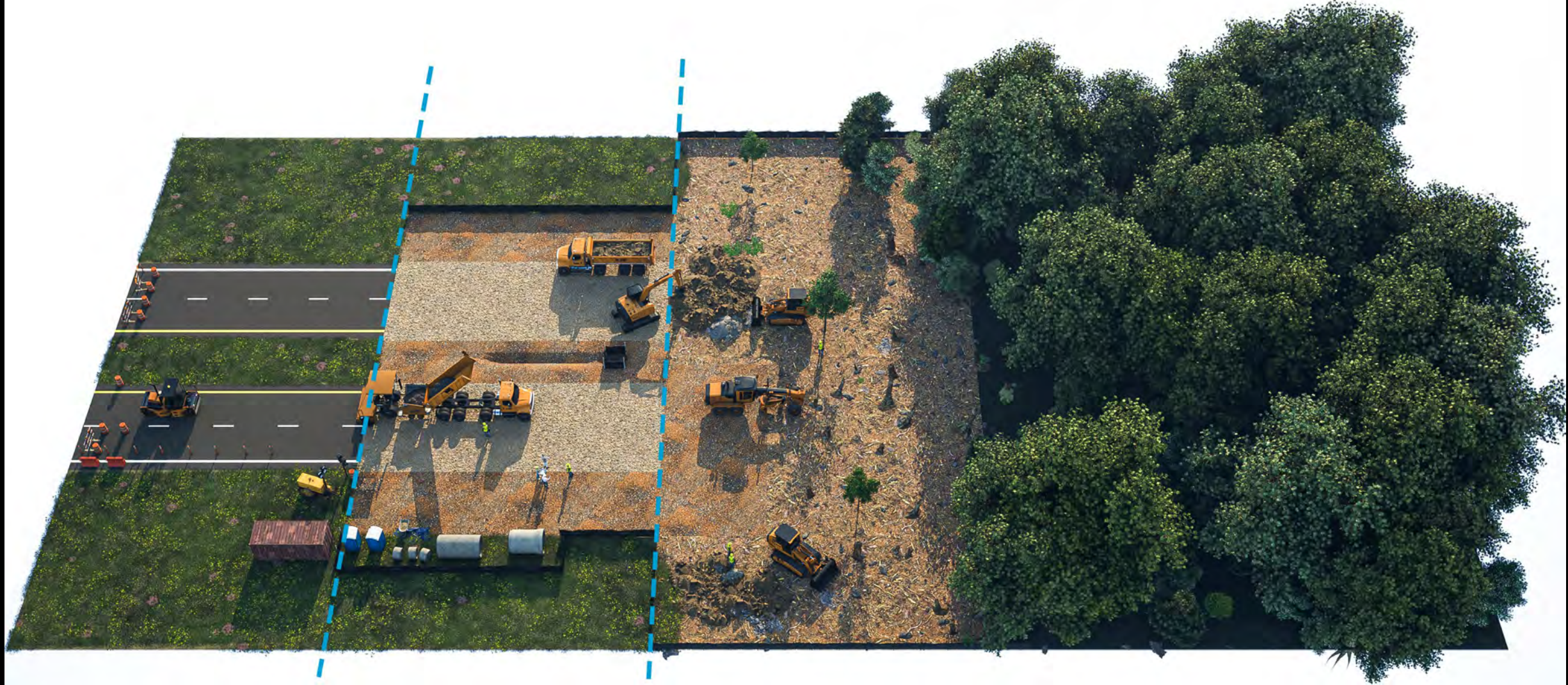
# Managing Work.

- ▼ Contract Administration
  - ...
- ▼ Construction Operation Sequencing
  - **Delay and Limitation of Soil Disturbance**
  - ...
- ▼ Vegetated Buffer Preservation & Establishment
  - ...
- ▼ Topsoil Conservation
  - ...
- ▼ Water Resource and Buffer Encroachment Limitation
  - ...
- ▼ Good Housekeeping
  - ...





Delay and Limitation  
of Soil Disturbance



$A = R K L S C P$



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



Delay and Limitation of Soil Disturbance



# Managing Work.

Delay and Limitation of Soil Disturbance





# Managing Work.

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Delay and Limitation  
of Soil Disturbance





# Managing Work.

Delay and Limitation of Soil Disturbance



# The **Five Pillars** of Construction Stormwater Management

**Decreasing effectiveness**

**Increasing cost of implementation**



...think, and do things in order of importance...

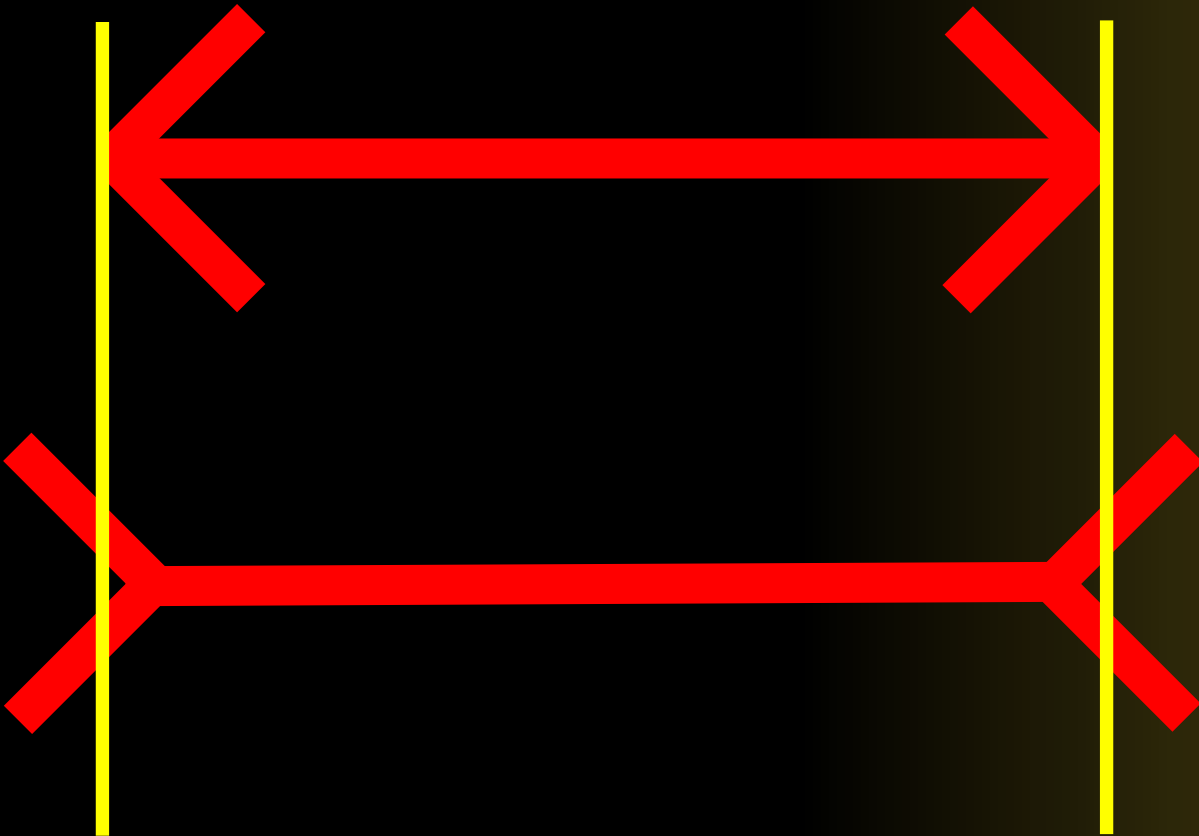
- John Maxwell



think.



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





The  
Myopic Visionary  
Stormwater  
Professional

doing things in order  
of importance.

Barry Fagan  
| FAGAN



The  
Myopic Visionary  
Stormwater  
Professional

my·op·ic – nearsighted  
vi·sion·ar·y – farsighted



my·op·ic – mindful, paying attention to detail

vi·sion·ar·y - thinking about or planning the future  
with imagination or wisdom







*Taking Care of the  
Hear and Now  
while looking to the  
There and Then*



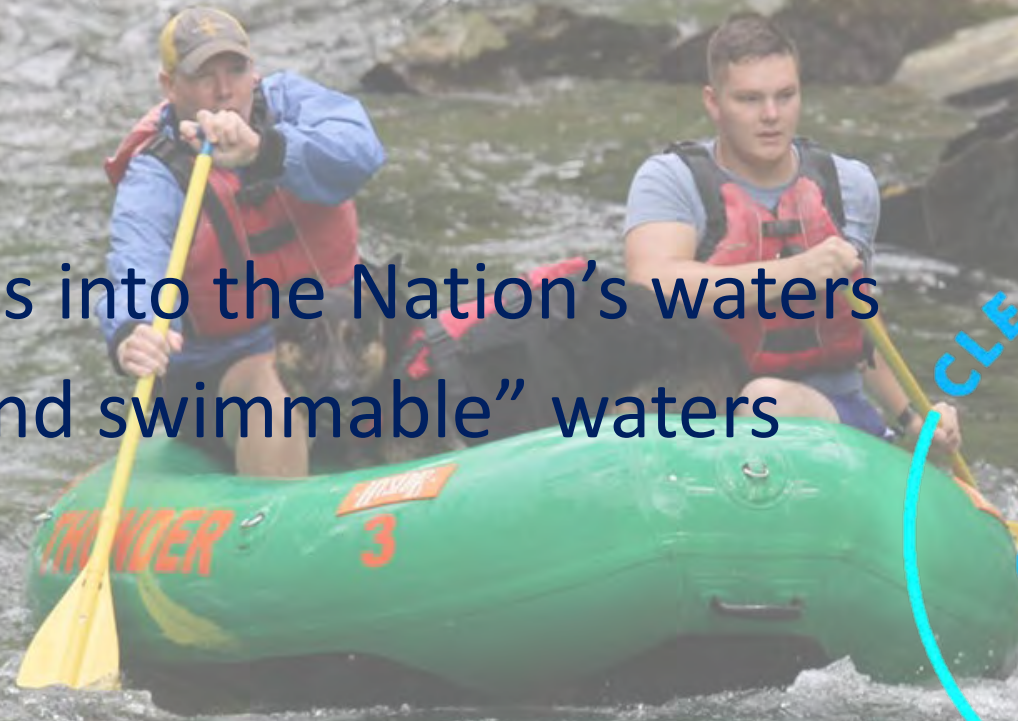




Objective - to restore and maintain the chemical, physical and biological integrity of the Nation's waters

1985 – eliminate all pollutants into the Nation's waters

1983 – to achieve “fishable and swimmable” waters





1985 – eliminate all pollutants into the Nation’s waters

1983 – to achieve “fishable and swimmable” waters

- ▼ About half of US waters have been assessed.
- ▼ 50% of assessed streams are impaired.
- ▼ 55% of lakes and reservoirs are impaired.
- ▼ Stormwater runoff is a leading source of impairment for US waters.



2023

# REPORT CARD FOR AMERICA'S INFRASTRUCTURE

[MAKING THE GRADE](#)

[INFRASTRUCTURE CATEGORIES](#)

[INFRASTRUCTURE BY STATE](#)

[SOLUTIONS](#)

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**ASCE**



## America's Infrastructure Scores a

# C-

# Infrastructure - the basic physical and organizational structures and facilities needed for the operation of a society

## National Infrastructure Categories



AVIATION



BRIDGES



BROADBAND



DAMS



DRINKING WATER



ENERGY



HAZARDOUS WASTE



INLAND WATERWAYS



LEVEES



PUBLIC PARKS



PORTS



RAIL



ROADS



SCHOOLS



SOLID WASTE



STORMWATER


























TRANSIT




WASTEWATER

# 2021 Infrastructure Grades

	AVIATION	 D+
	BRIDGES	 C
	DAMS	D
	DRINKING WATER	 C-
	ENERGY	 C-
	HAZARDOUS WASTE	D+
	INLAND WATERWAYS	 D+
	LEVEES	D
	PARKS AND RECREATION	D+

	PORTS	 B-
	RAIL	B
	ROADS	D
	SCHOOLS	D+
	SOLID WASTE	C+
	STORM WATER	D
	TRANSIT	D-
	WASTEWATER	D+

America's Cumulative Infrastructure Grade



A	EXCEPTIONAL
B	GOOD
C	MEDIOCRE
D	POOR
F	FAILING

A Exceptional: fit for the future

B Good: adequate for now

C Mediocre: requires attention

D Poor: at risk

F Failing/Critical: unfit for purpose



# 2022 REPORT CARD

## THE GRADE



### C Mediocre: requires attention

The infrastructure in the system or network is in fair to good condition; it shows general signs of deterioration and requires attention. Some elements exhibit significant deficiencies in conditions and functionality, with increasing vulnerability to risk.

### D Poor: at risk

The infrastructure is in **poor to fair condition and mostly below standard, with many elements approaching the end of their service life**. A large portion of the system exhibits significant deterioration. Condition and capacity are of significant concern with strong risk of failure.

# 2022 REPORT CARD

## THE GRADE



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# 2022 Annual Conference - Looking Forward

## CELEBRATING 10 YEARS

2012  
ESCA BC



2014  
ESCA BC  
Erosion and Sediment Control  
Association of British Columbia



2022  
ESCA BC  
Erosion and Sediment Control  
Association of British Columbia

The good ole' days  
weren't always good,  
and tomorrow ain't  
as bad as it seems.

---

- Billy Joel





**ESCA**BC

So, what are we  
going to do?



Your direction, not your intention,  
determines your destination.

- Andy Stanley

# CELEBRATING 10 YEARS

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ESCA BC



2014

ESCA BC  
Erosion and Sediment Control  
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2022

ESCA BC

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