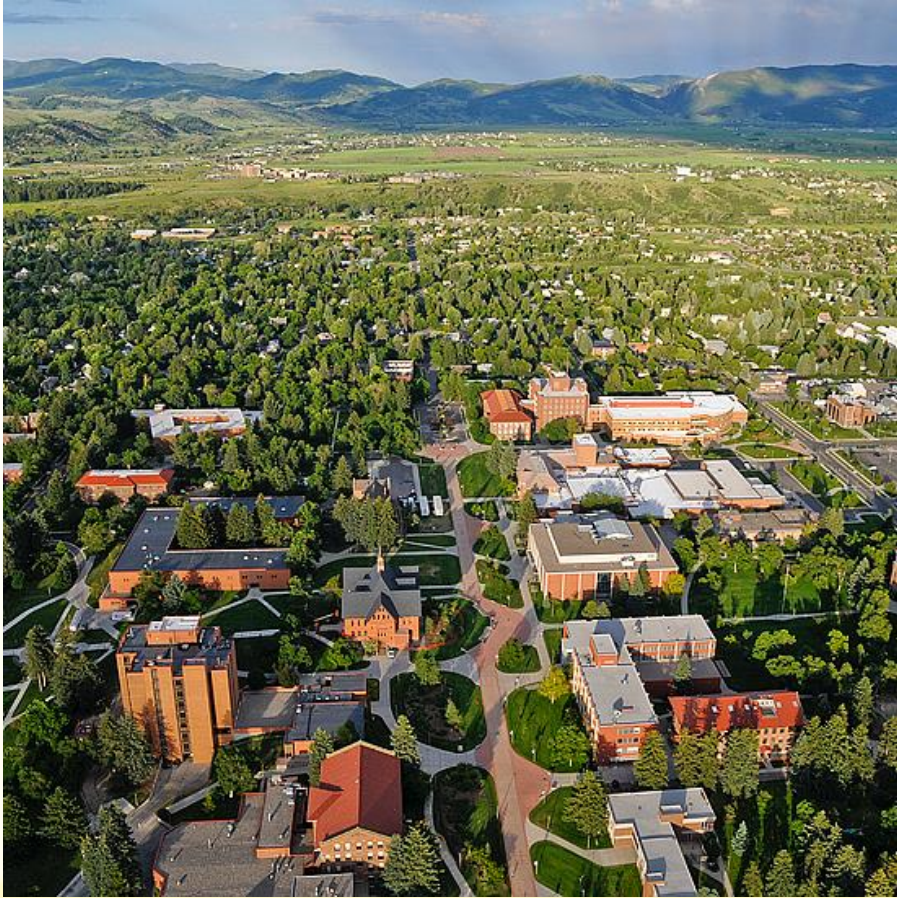


Storm Water and Sustainable Landscapes

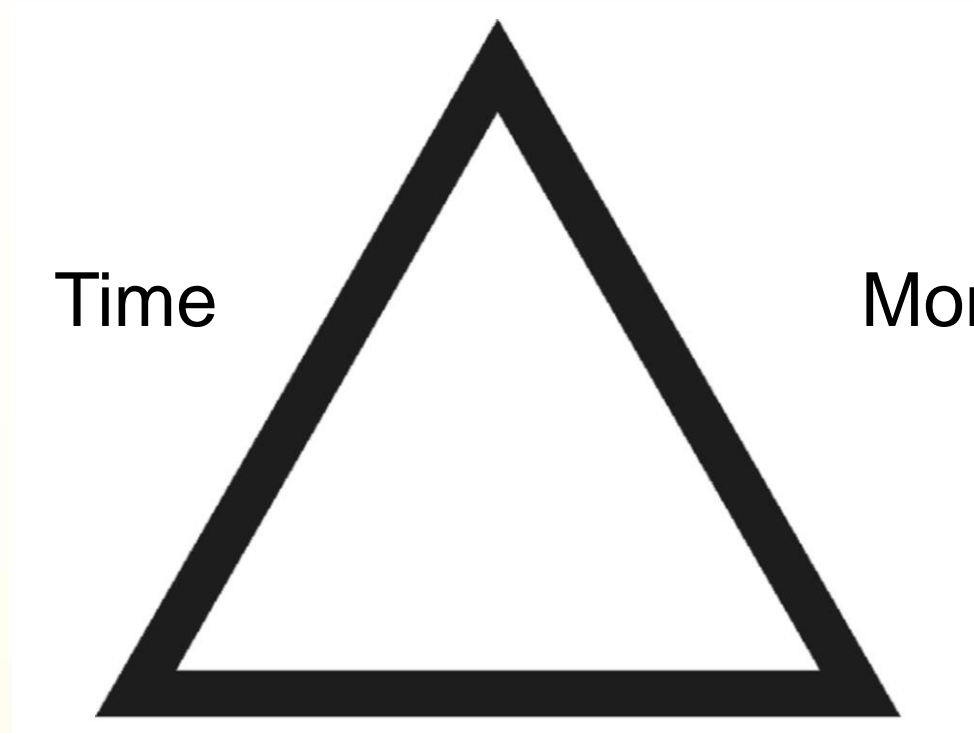
Green Gardening – October 2016

EJ Hook, Environmental Services Manager

My World



Culture



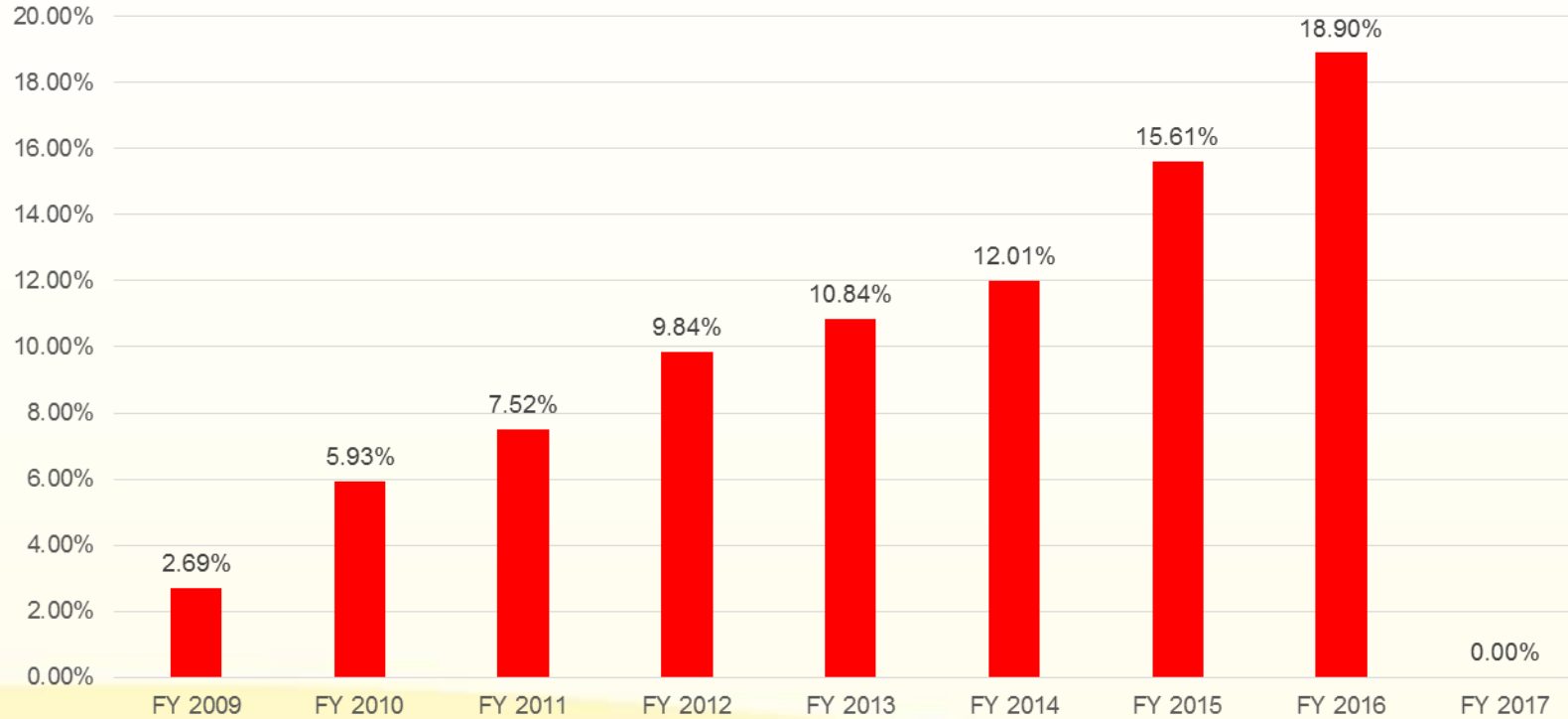
Time

Money

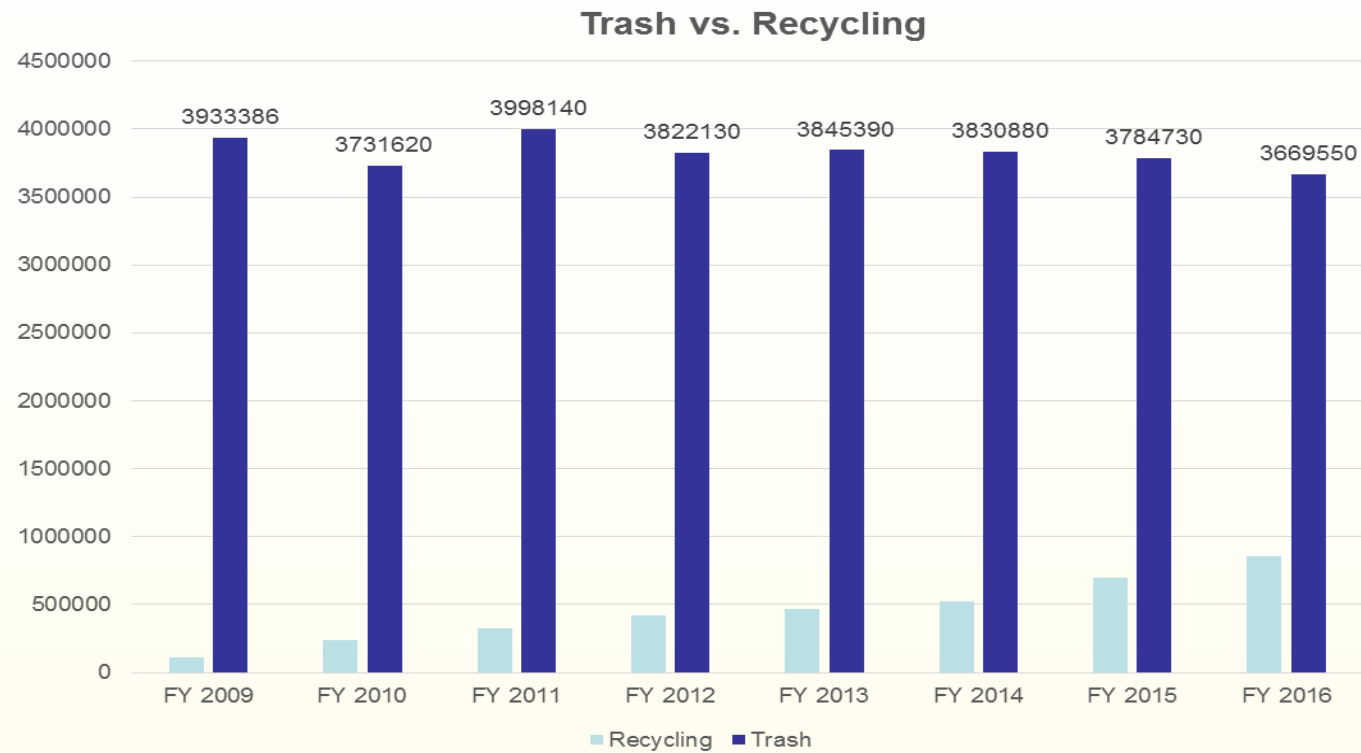
Awareness

Culture

Diversion Rate Year to Year
Does Not Include Compost

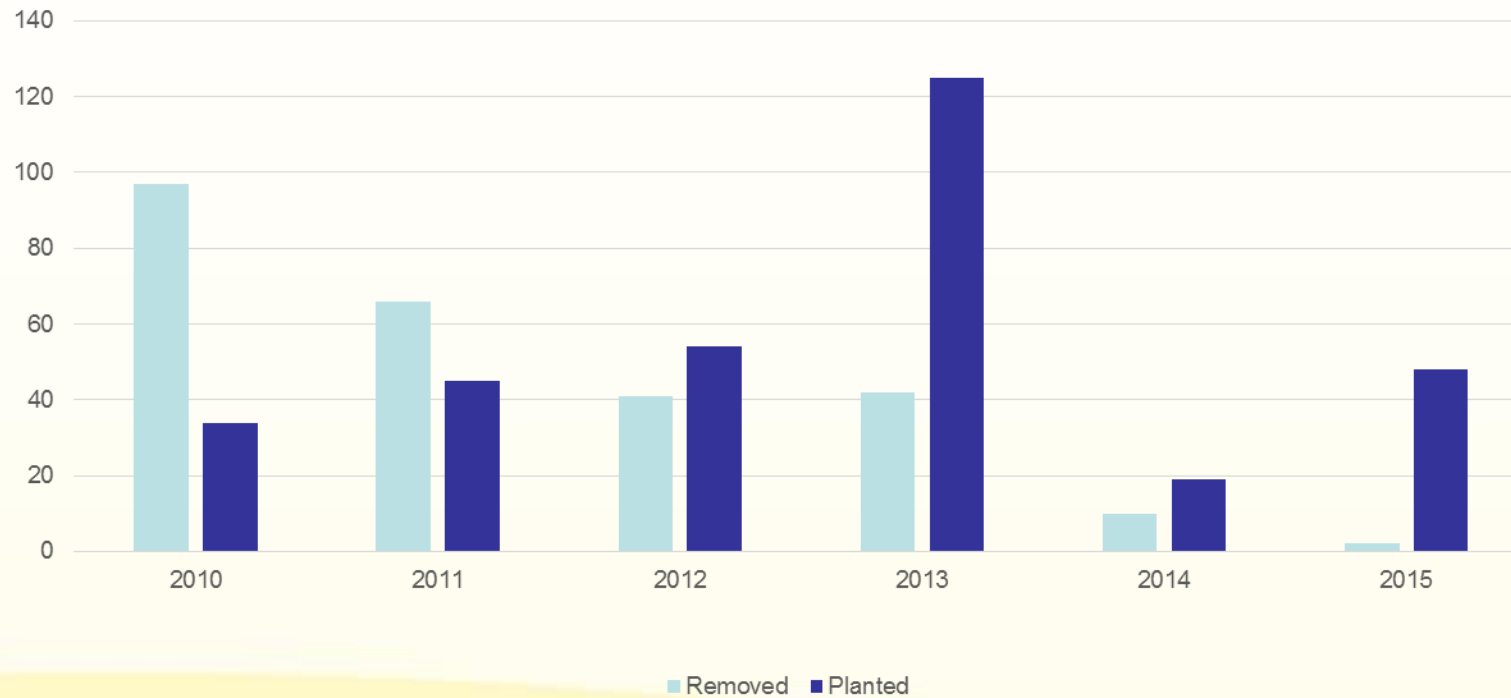


Culture



Culture

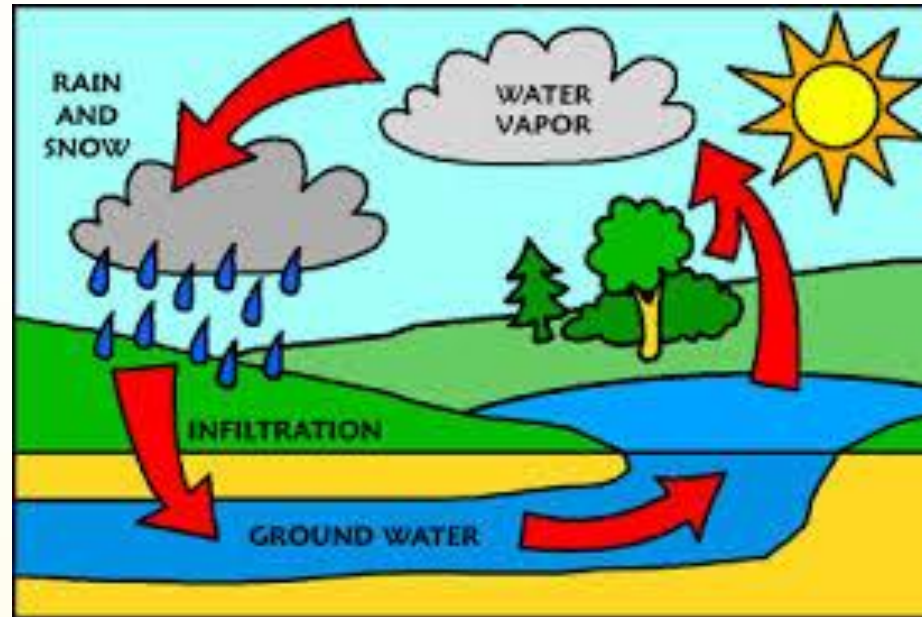
Tree Planting



Introduction

- History
- Clean Water Act
- MS4
- Minimum Control Measures
- What You can do Yourself
- What You can do with a little help from your friends

The Water Cycle



The Water Cycle



How and Why we got Here



Clean Water Act



MS4



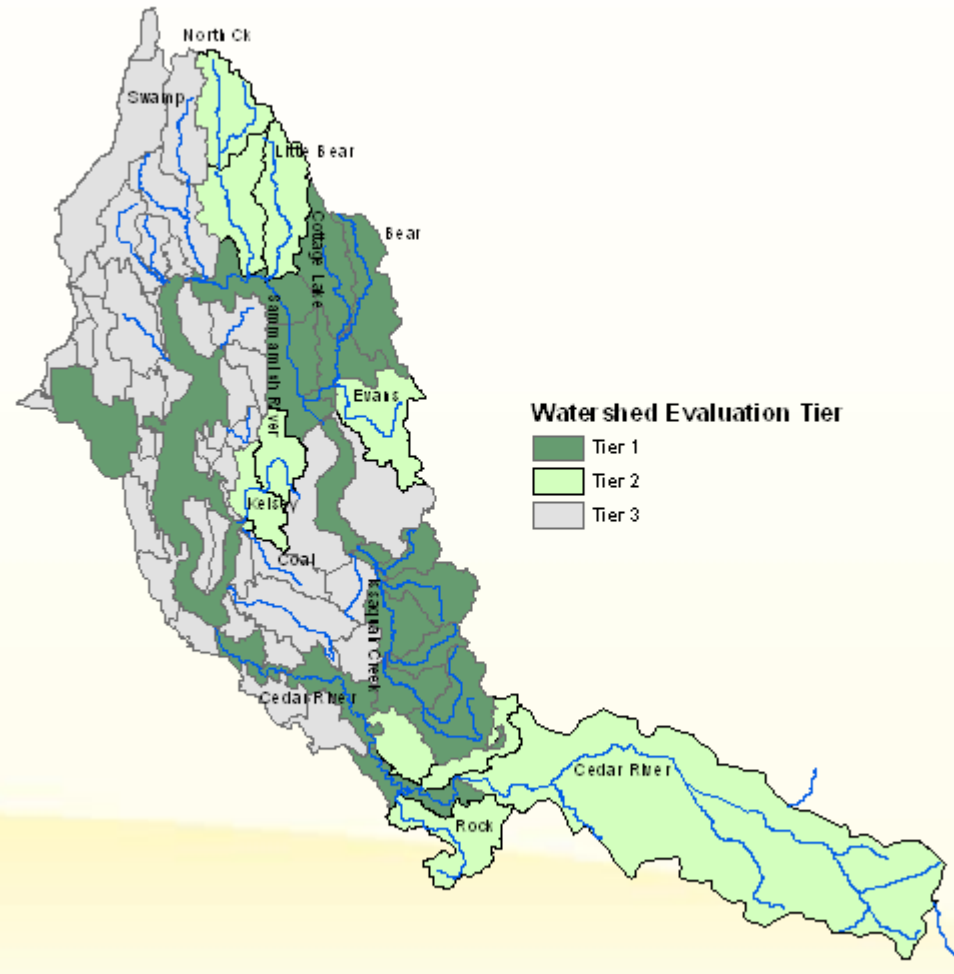
MS4-Minimum Control Measures

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination (IDDE)
- Construction Site Runoff Control
- Post Construction Storm Water Management
- Pollution Prevention/Good Housekeeping

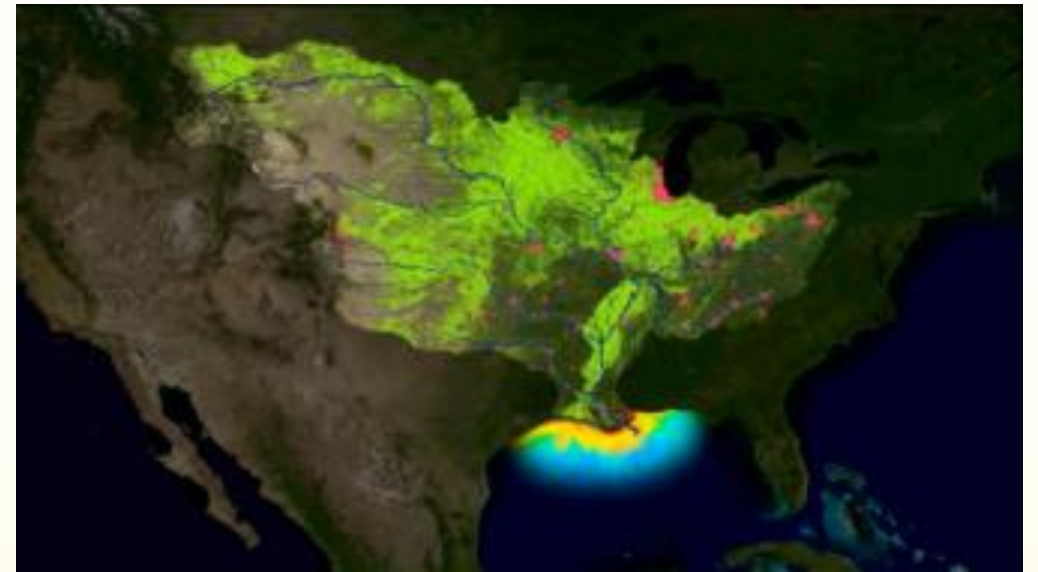
MS4-Minimum Control Measures

- Quality
- Quantity
- Education

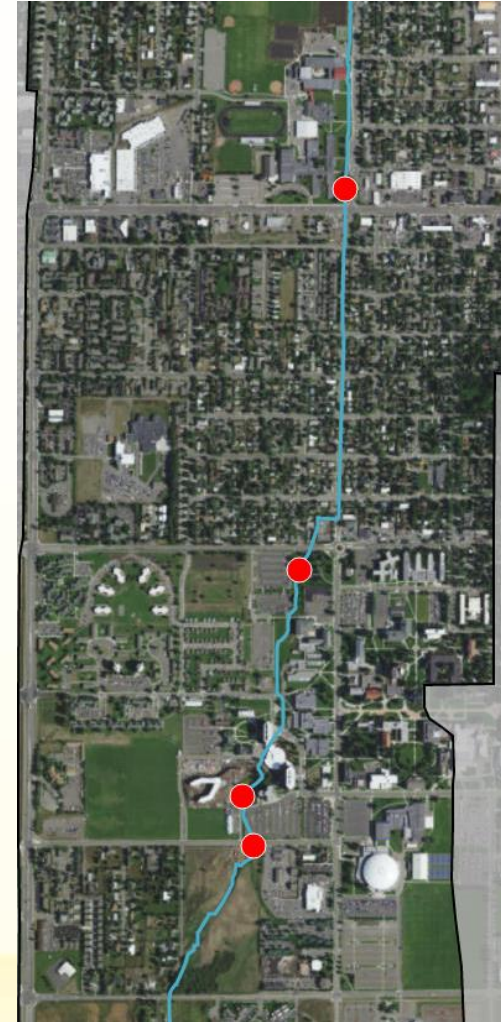
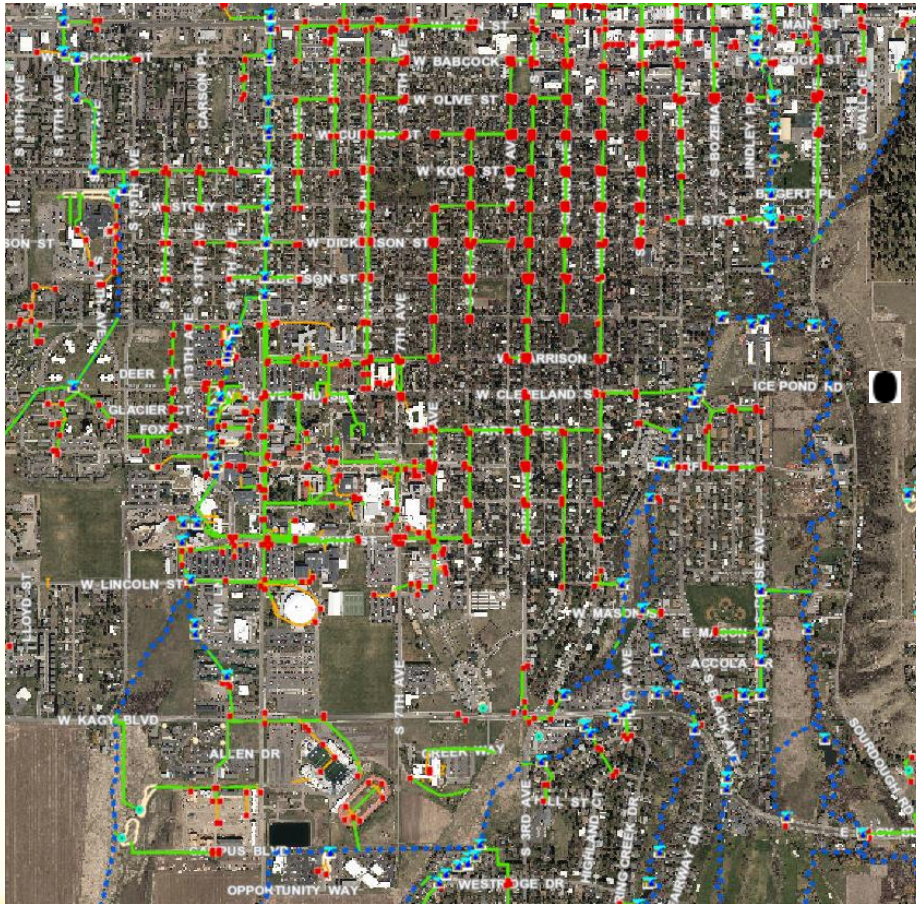
Why Should you care?



Why Should you care?



Why Should you care?



Mandeville Creek



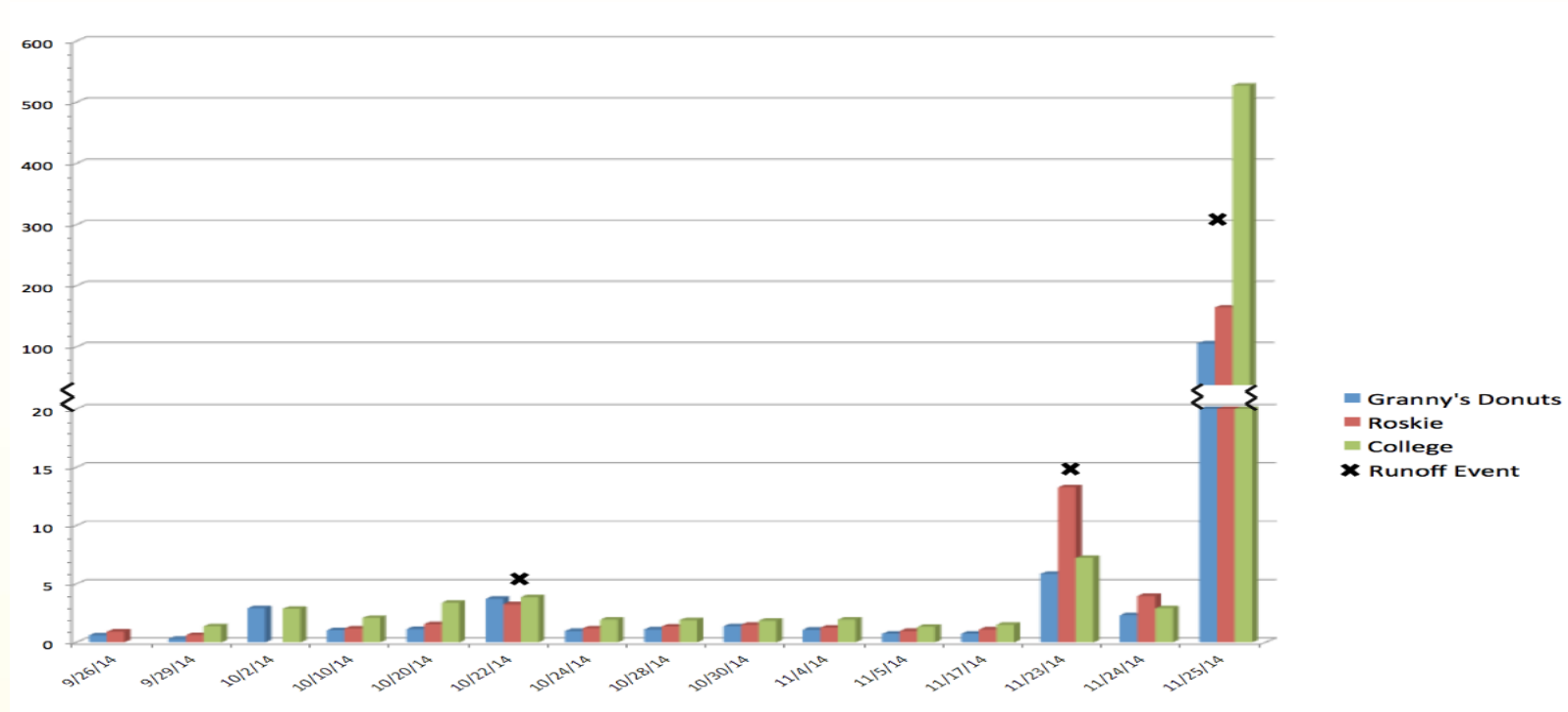
BMP - Mowing



BMP-Fertilizer

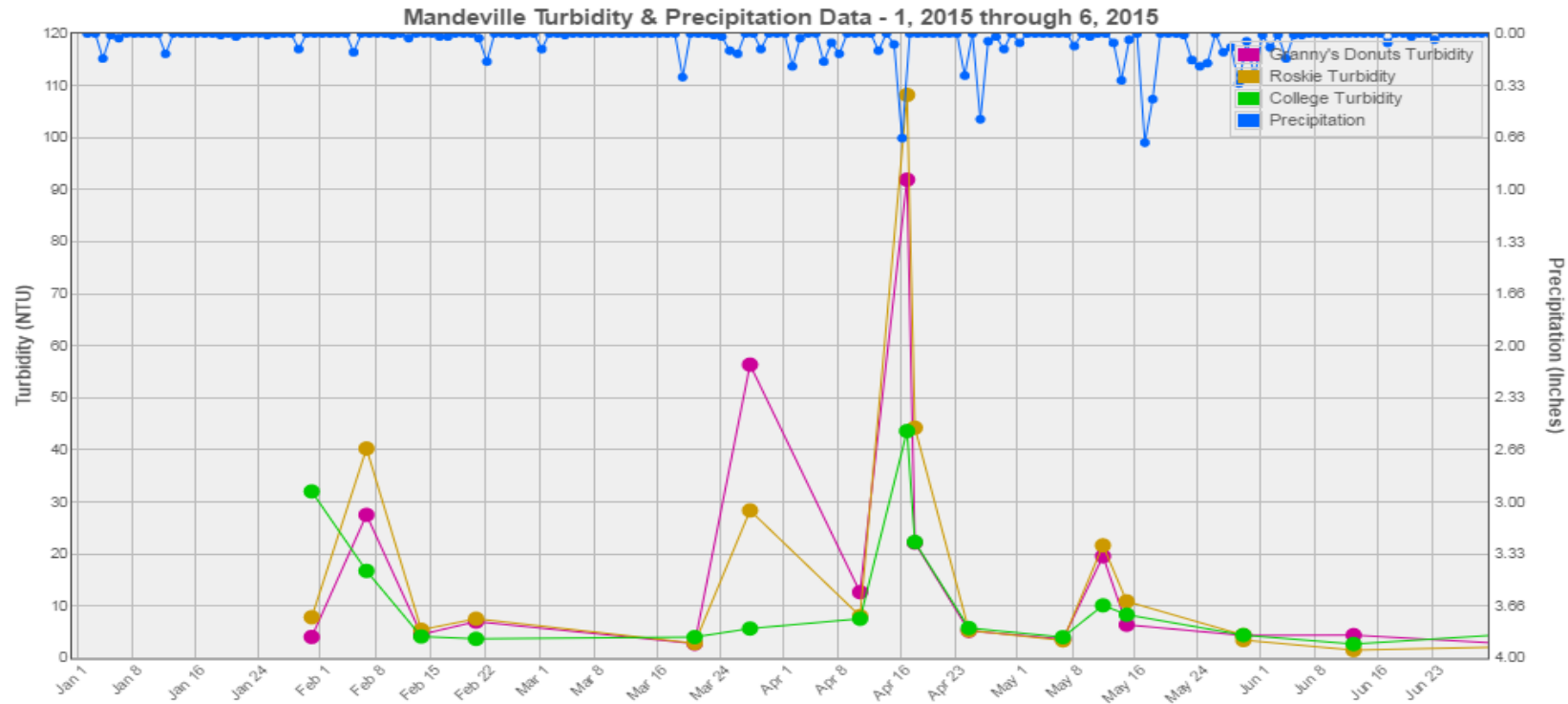
Water Quality Testing Summary	7/17/12-12-a	7/17/12 -C-a	7/17/12-C-b	8/21/12-12	8/21/12-C	9/25/12-12	9/25/12-C	7/14/13-12	7/16/13-12-a	7/16/13-12-b	7/16/13-C	8-13-13-12	8/13/13-C	9/17/13-12	9/17/13-12	9/17/13-C	2012 avg	2013 avg
	mgL(water)																	
solids	3	5	5	3	19	3	6	nd	2	2	3	nd	nd	nd	2	5	4.25	1.56
Chloride	7	7	7	5	6	6	6	2	7	4	4	6	6	2	4	5	6.29	4.44
Total N	2.2	1.9	1.9	1.5	1.5	1.6	1.5	0.6	1	1	0.9	1.2	0.8	0.5	1.1	1	1.73	0.9
Amm -N	nd	nd	nd	nd	nd	nd	nd	nd	0.05	nd	0.05	nd	nd	nd	nd	nd	nd	0.01
Nitrate	1.85	1.52	1.54	1.33	1.32	1.54	1.54	0.48	0.77	0.77	0.65	0.89	0.62	0.47	0.74	0.69	1.52	0.67
Total Phos	0.059	0.062	0.064	0.059	0.055	0.046	0.043	0.027	0.061	0.06	0.056	0.083	0.074	0.032	0.089	0.098	0.055	0.064
Cal	54	48	49	54	56	62	62	50	38	n/a	n/a	49	48	n/a	n/a	n/a	55	46.25

BMP - Measurement



- Turbidity Before

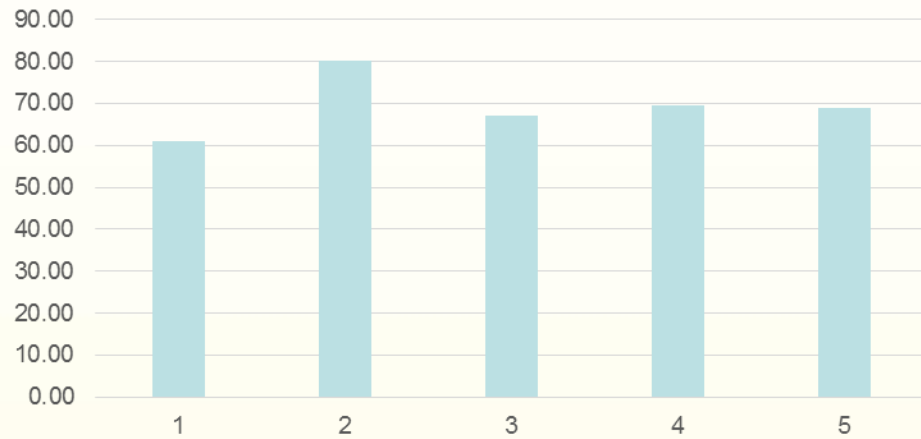
BMP - Measurement



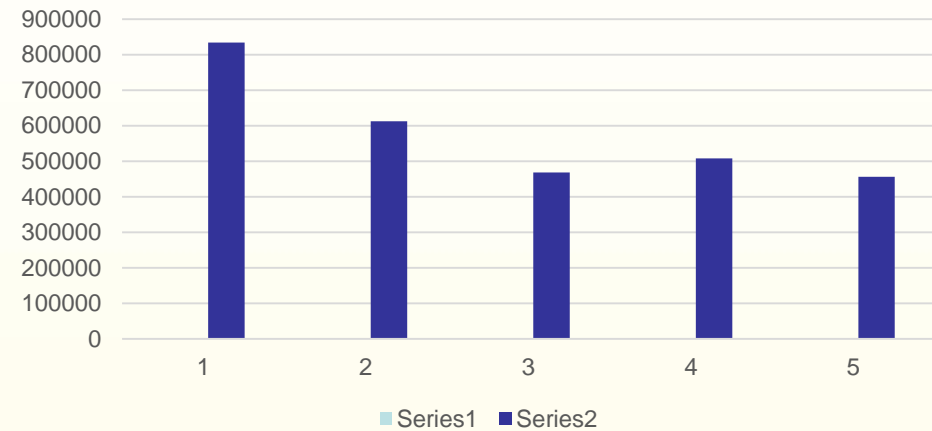
- Turbidity After

BMP – Water Use

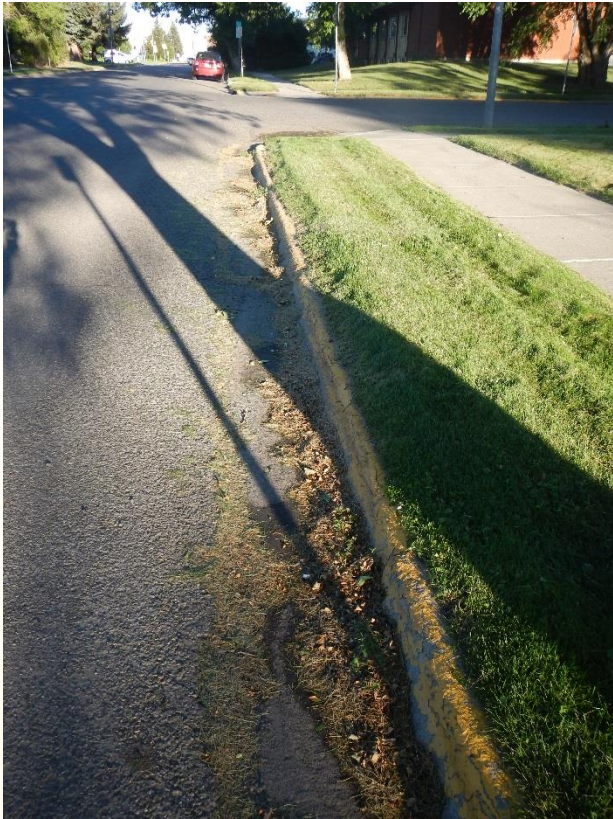
Average Irrigation Use per Year
(Millions of gal/year)



Average Irrigation water use per Day
(gal/day)



BMP - Housekeeping



Daily work practices have an impact on water quality.

BMP - Housekeeping



Are you ready?

BMP - Housekeeping



BMP - Housekeeping



What are you
going to do?



BMP - Educate



BMP - Educate



BMP - Educate



Success



BMP - Construction



Bad

BMP - Construction



Bad



Good

BMP - Construction



Nice Try

BMP - Construction



Nice Recovery

BMP - Construction



Well done

BMP - Educate



BMP - Construction

The screenshot shows the King County website page for stormwater services. The page title is "Stormwater services and information" and the location is "King County, Washington". The breadcrumb trail is "Home > Services > Environment > Water and land services > Stormwater services".

Water and land services
Stormwater services

- Introduction to stormwater
- Report a problem
- Surface Water Management Fee
- Agricultural drainage assistance
- Neighborhood drainage assistance
- CESCL Training
- Dams
- Stormwater videos
- Documents
- NPDES permit
- Stormwater glossary
- Related resources
- News archive

Home > Services > Environment > Water and land services > Stormwater services

Stormwater services and information

King County, Washington


Report a problem

Contacts: [Stormwater Services Section](#)

[Stormwater Pollution Prevention Manual](#)

- [Homeowner requirements](#)
- [Commercial property requirements](#)

[2009 King County Surface Water Design Manual](#)




Rainfall washes pollutants from yards and pavement into our local streams, lakes and Puget Sound.

Learn about stormwater and how to reduce pollution

[Introduction to stormwater in King County](#)
Learn about the science of stormwater, common problems related to stormwater including causes and solutions, homeowner tips, regulations, and how to get help from King County.

- [Stormwater runoff pollution and how to reduce it](#)
- [What are stormwater facilities?](#)
 - [Interactive map of stormwater facilities \(opens new window\)](#)
- [Stormwater science](#)
- [Stormwater educational videos](#)
- [Stormwater quiz - test your stormwater knowledge](#)
- [Stormwater glossary of terms and abbreviations](#)
- [King County precipitation map \(5.1 Mb Acrobat pdf\)](#)



Related information

- [Environmental monitoring data](#)
- [King County watersheds](#)
- [Sustainable building](#)
- [Stormwater Services Section](#)

Related agencies

- [Dept. of Natural Resources and Parks](#)
- [Dept. of Transportation](#)
- [Water and Land Resources Division](#)

Stay connected
Sign up for email about stormwater

Enter email

Submit

May 6, 2016
[May is 'Puget Sound Starts Here' month, stresses stormwater pollution prevention](#)

Apr. 12, 2016
[External article, Seattle Times Stormwater detox: Pollution solutions are within reach](#)

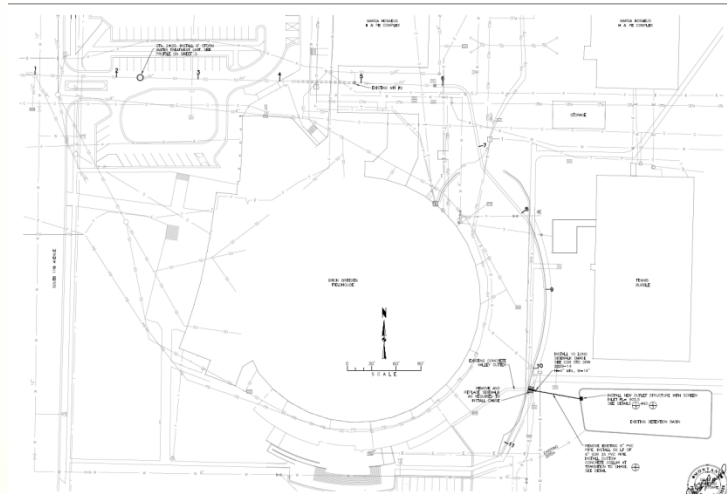
Nov. 5, 2015
[External opinion, Seattle Times](#)

Confused? Not your Job?

Planning – Post Construction



Planning – Post Construction



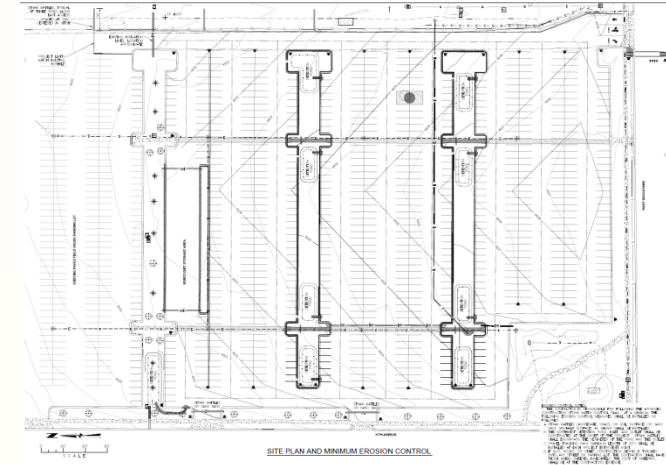
CAMPUS STORM WATER QUALITY IMPROVEMENTS 2013 SITE PLAN

REGULATED PLANNING, ENGINEERING, ARCHITECTURE, INTERIOR DESIGN, LANDSCAPE ARCHITECTURE, ENVIRONMENTAL SCIENCE, AND CONSTRUCTION

TD&M

DATE: 04-18-2013

SHEET: 2



SOUTH BLDG HOUSE PARKING LOT IMPROVEMENTS

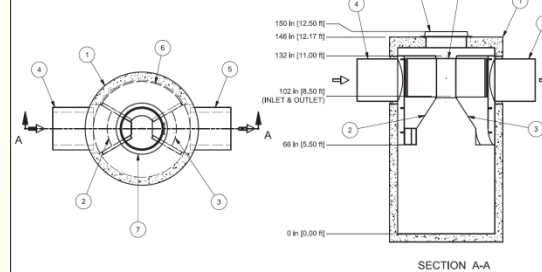
REGULATED PLANNING, ENGINEERING, ARCHITECTURE, INTERIOR DESIGN, LANDSCAPE ARCHITECTURE, ENVIRONMENTAL SCIENCE, AND CONSTRUCTION

HYDRO INTERNATIONAL

DATE: 04-18-2013

SHEET: 1

NOT FOR CONSTRUCTION - CONTACT HYDRO INTERNATIONAL FOR SITE SPECIFIC DRAWINGS



SECTION A-A

ITEM	SIZE (in)	DESCRIPTION
1	72	LD CONCRETE MANHOLE
2		INLET CHUTE (W/ FLOATABLE TRAP)
3		OUTLET CHUTE
4	24	INLET PIPE (BY OTHERS)
5	24	OUTLET PIPE (BY OTHERS)
6		HIGH FLOW BYPASS
7	30	FRAME AND COVER (OR GRATE)

- CAPACITIES:**
1. PEAK HYDRAULIC FLOW: 18.0 cfs (510 l/s)
 2. TREATMENT FLOW: 2.2 cfs (62 l/s)
 3. SEDIMENT STORAGE CAPACITY: 7.5 cu. ft. (217 cu. m)
 4. OIL STORAGE CAPACITY: 400 gal. (1500 liters)
- ADDITIONAL DESIGN INFORMATION:**
1. MAXIMUM INLET/OUTLET PIPE DIAMETERS: 24 in.
 2. MAXIMUM NUMBER OF INLET PIPES: 2
 3. MINIMUM ANGLE BETWEEN PIPES: 90 DEGREES

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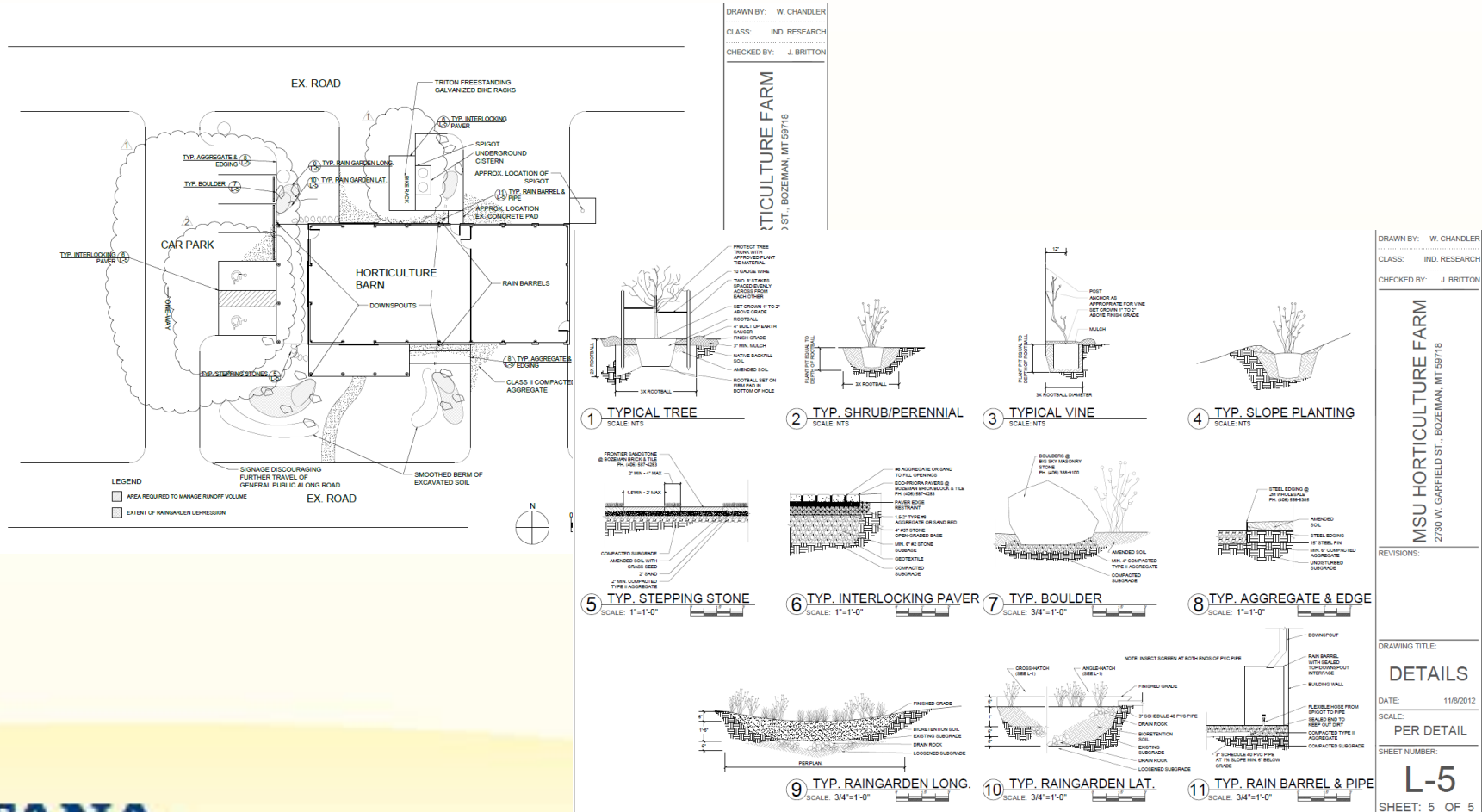
Planning - Post Construction



Planning – Post Construction



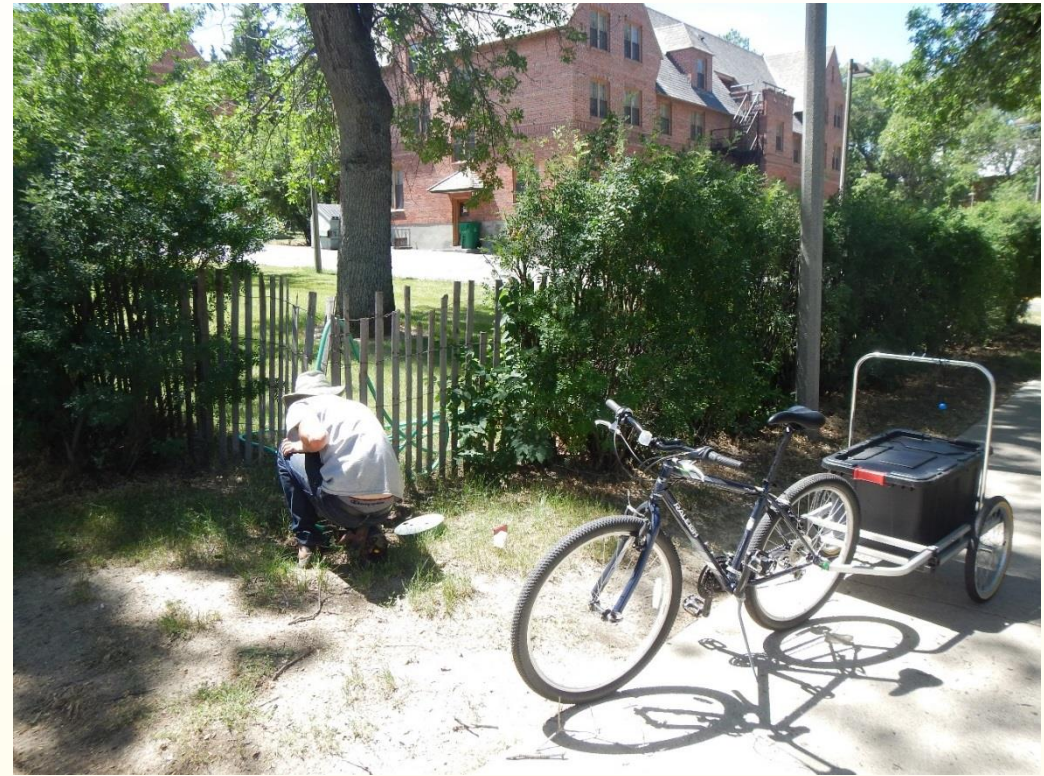
BMP - Educate



BMP - Educate



BMP – No Input



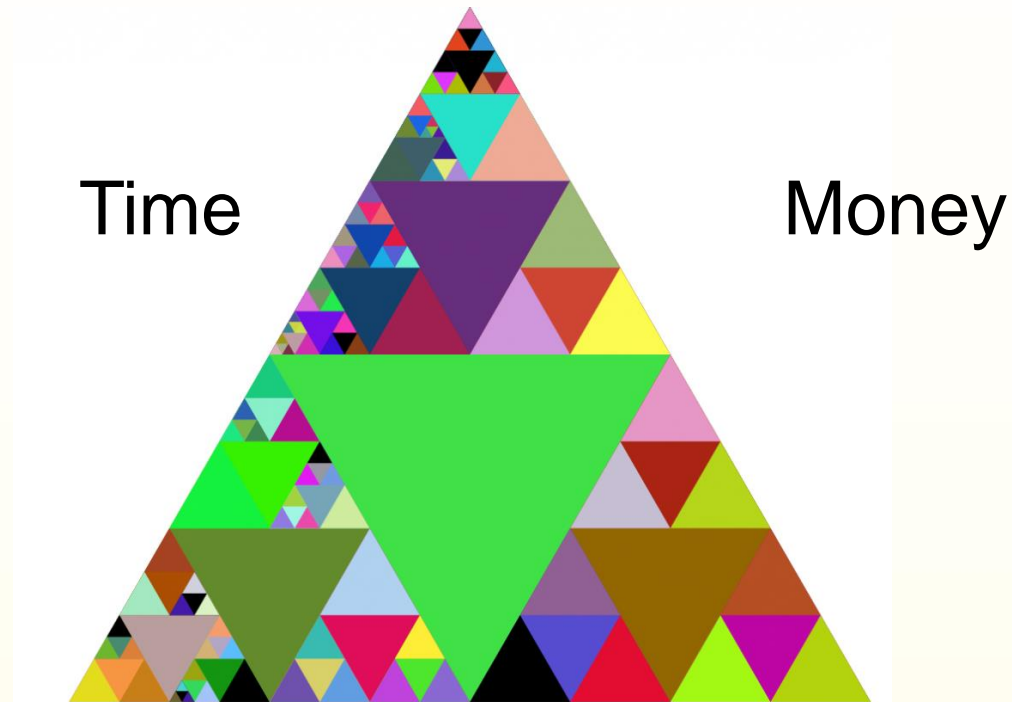
BMP – Less Input



BMP – Productive Input



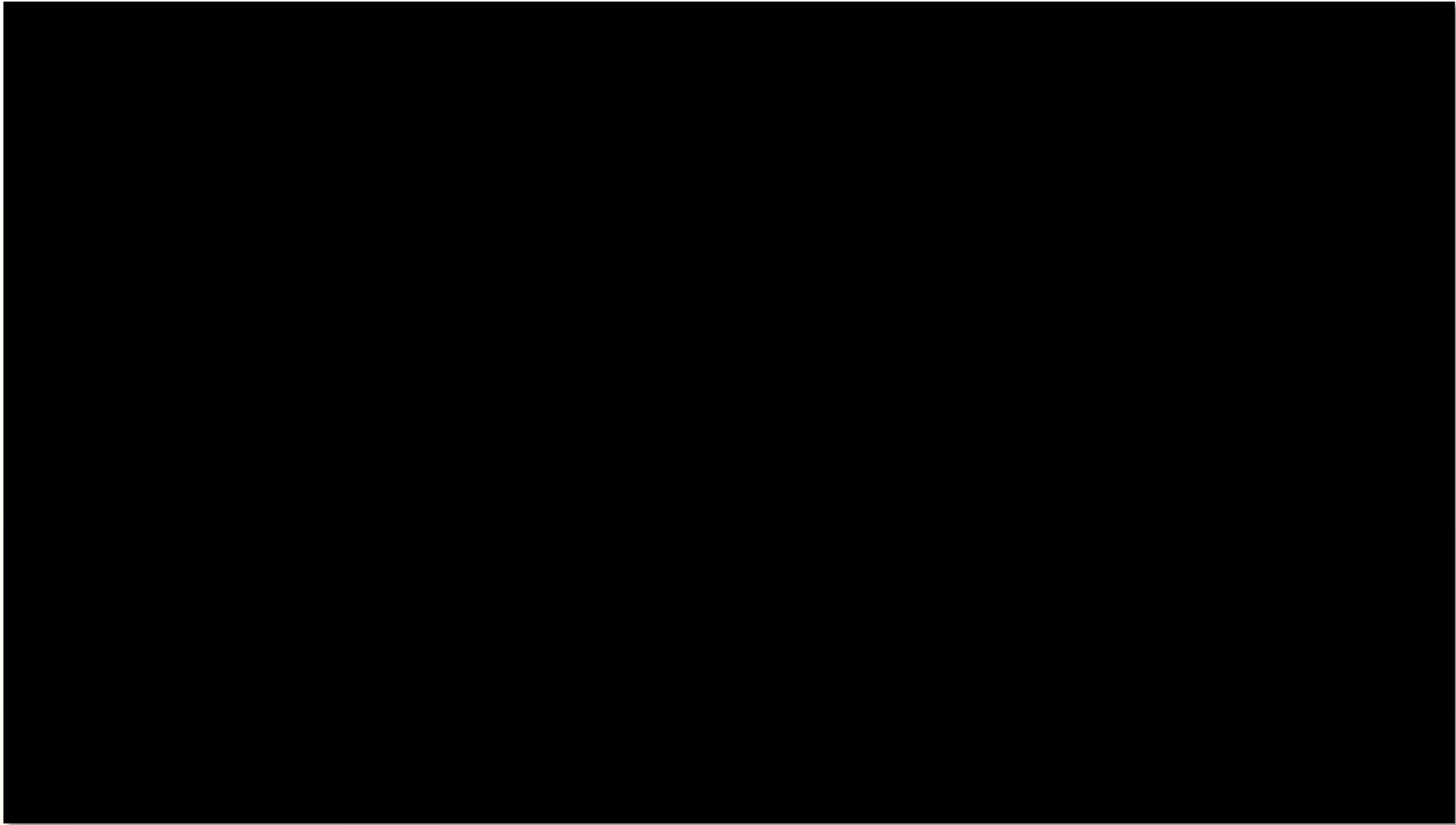
Culture



Time

Money

Awareness



Summary



Summary



Take Home

- Expand your View
- Do your Part
- Share your Progress



ACT

Comments/Questions

