

Grading Permit Myths, Green Infrastructure, & Other Highlights from 2019



Andy Szatko

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Permit & Plan Reviews – by Jurisdiction

Grading Permits

Jurisdiction	Reviewer	Email
City of Bellevue	Dean Dunn	dean.dunn@bellevue.net
City of Bellevue	Matt Knight	matt.knight@bellevue.net
City of Gretna	Greg Perry	gregp@olmstedperry.com
City of Gretna	Steve Perry	stevep@olmstedperry.com
City of La Vista	Pat Dowse	pdowse@cityoflavista.org
City of Omaha	Andy Szatko	andy.szatko@cityofomaha.org
City of Papillion	Derek Goff	dgoft@papillion.org
City of Ralston	Jerry Chancellor	jchancellor@cityofralston.com
Sarpy County	Art Beccard	abeccard@sarpy.com
Sarpy County	Leslie Steele	lsteale@sarpy.com
Boys Town	Scott Kardell	scott.kardell@boystown.org
Douglas County*	Stacy Gillman	stacy.gillman@douglascounty-ne.gov

*Not part of the Papillion Creek Watershed Partnership & City of Omaha EI's do not provide inspection services to Douglas County

Post-Construction

Jurisdiction	Reviewer	Email
City of Bellevue	Lori Laster	llaster@papionrd.org
City of Gretna	Greg Perry	GregP@olmstedperry.com
City of Gretna	Steve Perry	stevep@olmstedperry.com
City of La Vista	Derek Goff	pdowse@cityoflavista.org
City of Omaha	Selma Kessler	Selma.Kessler@cityofomaha.org
City of Papillion	Derek Goff	dgoft@papillion.org
City of Ralston	Lori Laster	llaster@papionrd.org
Sarpy County	Lori Laster	llaster@papionrd.org
Boys Town	Scott Kardell	scott.kardell@boystown.org
Douglas County*	Stacy Gillman	stacy.gillman@douglascounty-ne.gov

List available on [Permix & OmahaStormwater.org](http://Permix&OmahaStormwater.org)

City of Omaha Environmental Inspectors

- **Carol Sorensen** – Stormwater
- **Charla Long** – Stormwater
- **Eric Grimshaw** – Stormwater
- **Chris Anderson** – Stormwater
- **Casey Black** – Sewer Use
- **David Nusser** – Sewer Use
- **Mark Ermeling** – Sewer Use
- **Blake Wagner** – Sewer Use
- **Christina Tisko** – Fats, Oils & Grease
- **Jeff Ryba** – Air Program
- **Neil Graybil** – Solid Waste
- **Matt Nusser** – Solid Waste
- **Jenny Proescholdt** – Under the Sink

Contact list available on Permix

Omaha Stormwater Program

MS4 Permit (Municipal Separate Storm Sewer System):

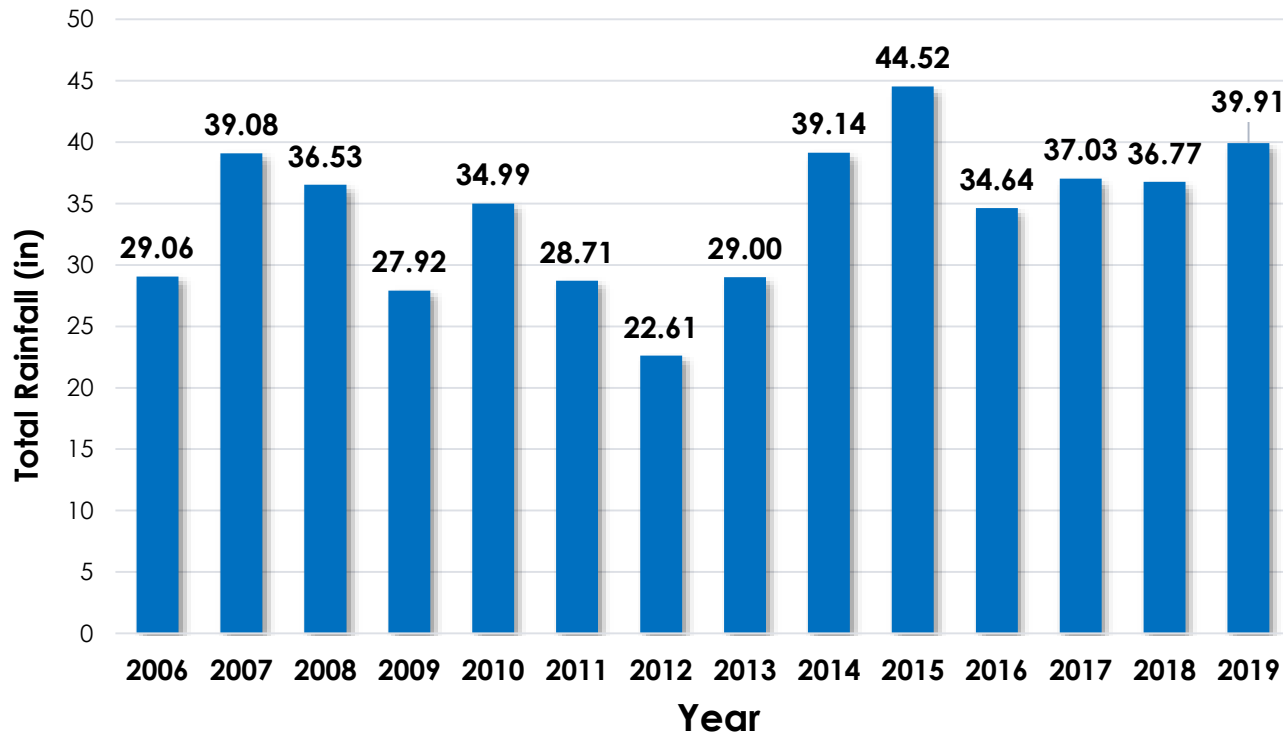
- 8 program elements:

1. Construction
2. Post-Construction
3. Education & Outreach
4. Public Participation
5. Industrial Stormwater
6. Good Housekeeping
7. Illicit Discharge Detection & Elimination
8. Monitoring



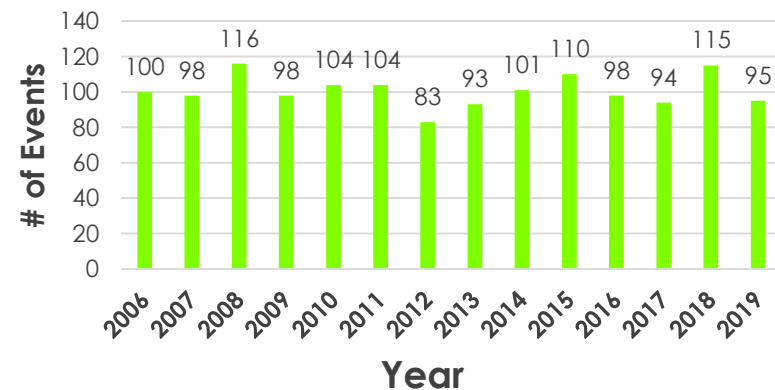
Rain Events for Omaha – past 12+ years

Omaha/Valley NWS Annual Total Rainfall



- 30" average annual rainfall
- 21.91" = Total rainfall spread
- 33 = Total event spread
- = you never quite know what you are going to get

Rainfall Events by Year

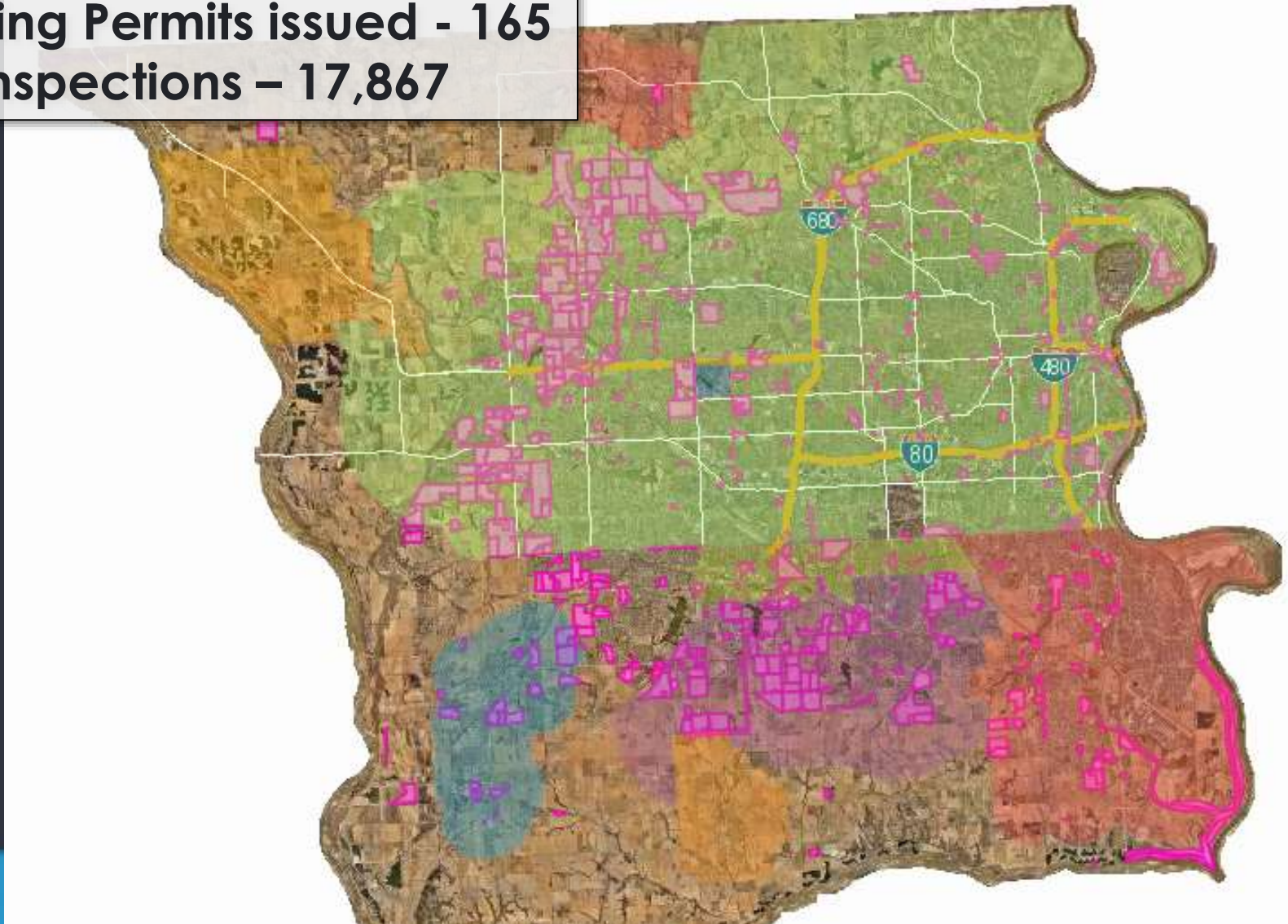


Grading Permits in the PCWP

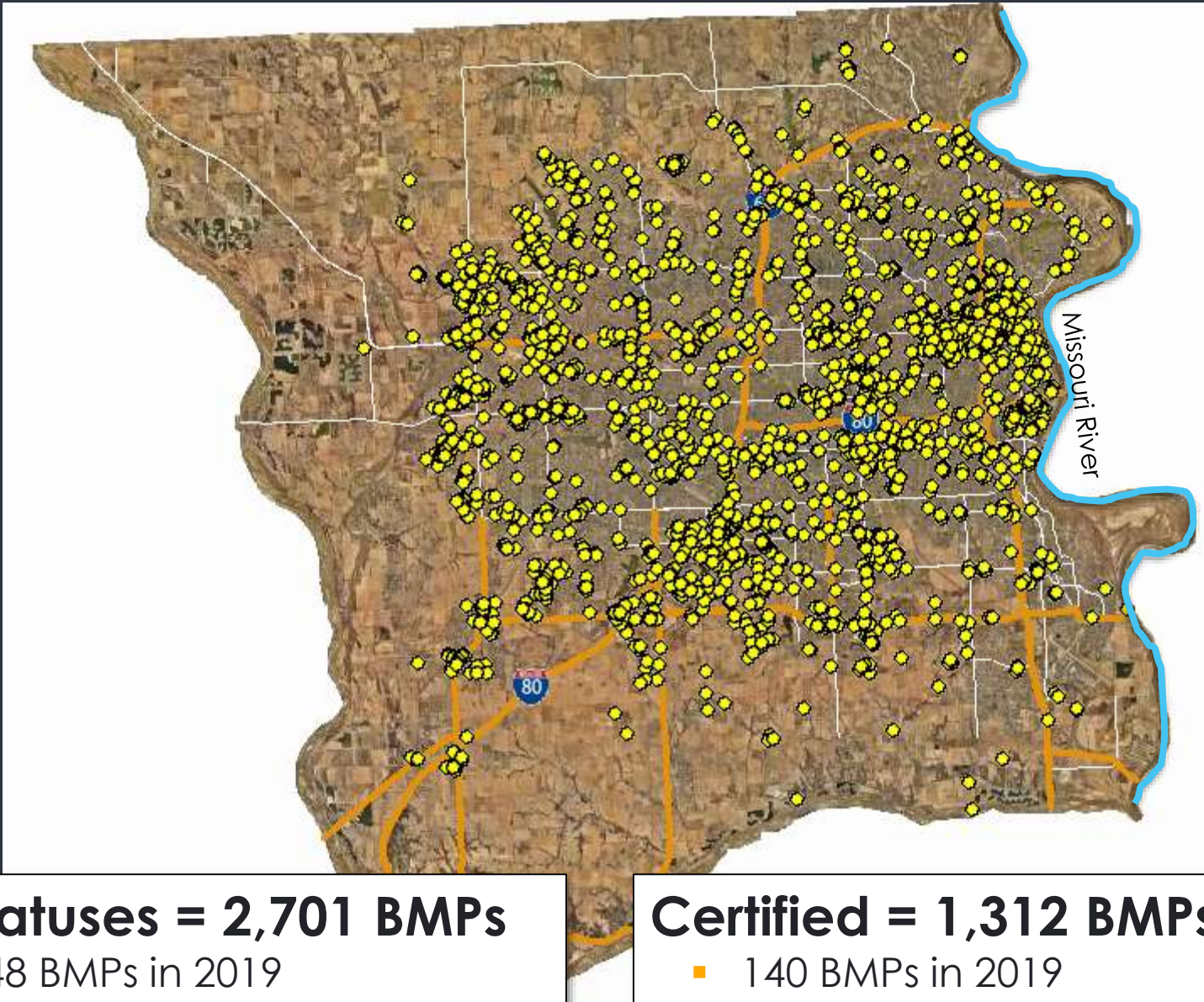
As of today – 587 Active Grading Permits, 105 in application

In 2019...

- Grading Permits issued - 165
- Site Inspections – 17,867



Post-Construction BMPs in the PCWP as of 2/4/20



All Statuses = 2,701 BMPs

- 248 BMPs in 2019
- 1,598 total projects

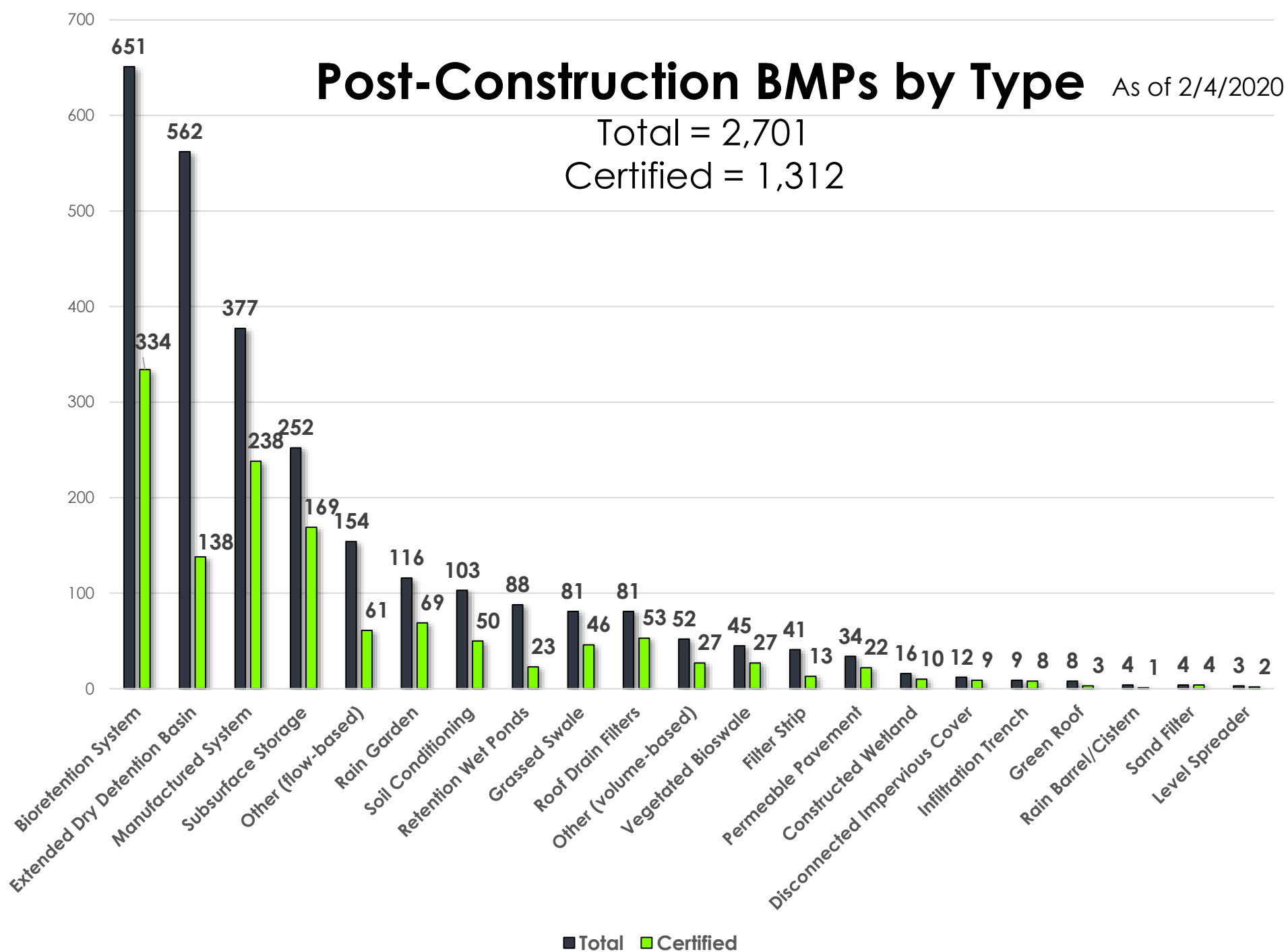
Certified = 1,312 BMPs

- 140 BMPs in 2019
- 835 certified projects

Post-Construction BMPs by Type

As of 2/4/2020

Total = 2,701
Certified = 1,312



Grading permit required when disturbing > 1 acre



Mythbusters: Grading Permit Edition

Discussing common myths & misconceptions

Stormwater Pollution Prevention Plans (SWPPP) & implementation is getting better



Not a myth! We are all doing good things...

~~It's just dirt, it's natural...~~



Plugs sewers, causes flooding, damages adjacent property & environment, & more

The contractor pulls the grading permit

APPLICANT SWPPP CERTIFICATION

Business Name	Representative's Email Address	Phone Number	
Representative's Name	Address	Fax Number	
Project # Assigned By APPLICANT	City	State	Zip Code

I hereby agree to act as APPLICANT in association with this SWPPP. Furthermore, I certify under penalty of law the following: (1) that, this document and all supporting information has been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted; (2) that, I understand and agree to abide by the terms and conditions contained within this Storm Water Pollution Prevention Plan – Site Map (SWPPP-SM), the associated Storm Water Pollution Prevention Plan – Narrative (SWPPP-N), and the PCWP Grading Permit Terms (<http://www.omahapermix.com>); (3) that, to the best of my knowledge and belief information contained in this SWPPP is true, complete, and accurate; (4) that, the SWPPP has been represented and warranted to conform to all applicable Standards, Criteria, Ordinances, Laws, Rules, and Regulations enacted by the -- [a] PCWP and its Members, [b] Douglas County, [c] Sarpy County, [d] State of Nebraska, and [e] United States Federal Government; (5) that, sound and established practices were used for the creation of this SWPPP; (6) that, I am obligated to ensure inspection, reporting, and maintenance requirements occur under the terms of this SWPPP; (7) that, this SWPPP will be implemented as the first element of construction; (8) that, I shall indemnify and save harmless the PCWP, its Members, Officers, Agents and Employees from all claims and demands of every nature and description growing out of the implementation of this SWPPP, including personal injuries received and all property damage sustained; (9) that, I will retain the services of the designated DESIGNER and INSPECTOR, to perform all design and inspection duties associated with this SWPPP, through a contractual agreement; and (10) that, corrections of defects and deficiencies in design, construction, inspection, implementation, and testing shall be without expense to the PCWP and its Members, Officers, Agents and Employees and shall be my obligations while acting as APPLICANT.

APPLICANT'S Signature

Date

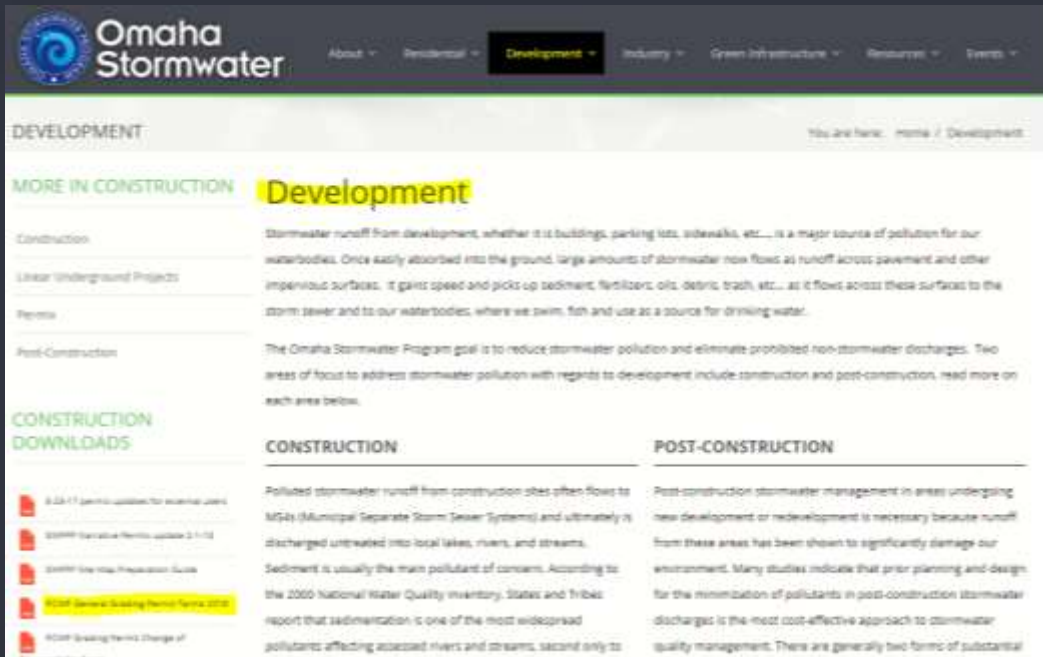
The owner of the property is the applicant

~~Grading permit approves how a site is~~ ~~graded~~



Lays out the plan to minimize stormwater pollution

Getting a permit is hard & tedious



The screenshot shows the Omaha Stormwater website. The navigation bar includes links for About, Residential, Development (highlighted), Industry, Green Infrastructure, Resources, and Events. The main content area is titled 'DEVELOPMENT' and features a 'Development' section with a yellow highlight. Below this, there are sections for 'CONSTRUCTION' and 'POST-CONSTRUCTION'. The 'CONSTRUCTION' section includes a link to 'Grading Permit Terms and Conditions' which is highlighted in yellow. The 'POST-CONSTRUCTION' section includes a link to 'Grading Permit Terms and Conditions' which is also highlighted in yellow.



The screenshot shows the City of Omaha Permis Home Page. The header includes the City of Omaha logo and a 'permis' logo. The main content area is titled 'City of Omaha Public Works - EQCD Permis Home Page'. It features a 'Log out' button and a welcome message. Below the message, there are buttons for 'New Project', 'Manage Users', and 'Manage Projects'. There are also buttons for 'PCDMP Permit Application', 'Linear Underground Notification', 'Public Improvement Application', and 'Grading Permit Application'. A 'NEWS AND INFORMATION' section includes a 'General' subsection with links to 'The 2019 Sediment & Erosion Control Seminar', 'Omaha Regional Stormwater Design Manual (ORDSM)', and 'Visit Permis Tutorials'. A blue arrow points to the 'Grading Permit Terms and Conditions - 2019' link. A 'USEFUL DOCUMENTS' section includes a 'General' subsection with links to 'Permis Update Summary 12/26/18' and 'Grading Permit Module'.

- Grading Permit Terms & Conditions
- SWPPP Site Map Prep Guide
- Narrative template

~~The ground is frozen & I can't do anything~~



- But the site is active...
- SWPPP still applies in frozen/snowy conditions
- Winter Stage allows monthly inspections & after 0.5" rain
- Intended to have site in good condition going into Winter

11/25/2019

14:43

~~It's wet & we can't install or fix anything~~



Maintenance of BMPs

- Corrective actions resolved within 7 days or next storm
- Document why if not resolved
- Preventative maintenance must be performed

~~The SWPPP says to put my silt fence here~~



BMPs need to go where they will be effective

~~I've got work to do there, so I can't have
anything in my way~~



Need to adapt to site conditions
It's not all-or-nothing...

~~Inlet protection is good enough~~



Inlet protection is a last measure, not first



Inlet Protection

- Inlet must have by-pass for intense storms
- Check after every rain & maintain
- Variety of options...

~~Seeding is stabilization~~



- Seeding -> Vegetation -> Stabilization
- Temp seed, blankets, hydromulch... -> Temp stabilization
- Weeds are not stabilization

~~Final stabilization is 70% vegetative cover of
my site area~~



Final Stabilization

- Uniform 70% vegetative density, not area coverage
- Perennial vegetation
- All disturbed, non-impervious areas

~~Silt fence around the perimeter is~~
~~good enough~~

Silt Fence

- Needs to be designed & implemented well
- Don't concentrate flows with it
- Use J-hooks
- Not for use in concentrated flows

~~My fuel tank is double-lined, so there
isn't anything else to do~~



Material Storage

- Sited away from inlets, waterbodies, etc...
- Liquid storage areas need containment
- Spill response materials: absorbant, drain pans, etc

10/22/2019 15:00

~~Concrete washout...it is what it is~~



Concrete Washouts

- Can't leak or be spilled
- In-ground must be lined
- Easy access & marked w/sign

10/22/2012

~~Construction entrances can use any
kind of rock~~

Construction Entrances

- Aggregate = 2"+, not "just rock"
- Defined access points
- Runoff directed away from entrance
- Alternative options: rumble grates & mats

If all the storm sewers go to a temporary sediment basin, then I don't need inlet protection



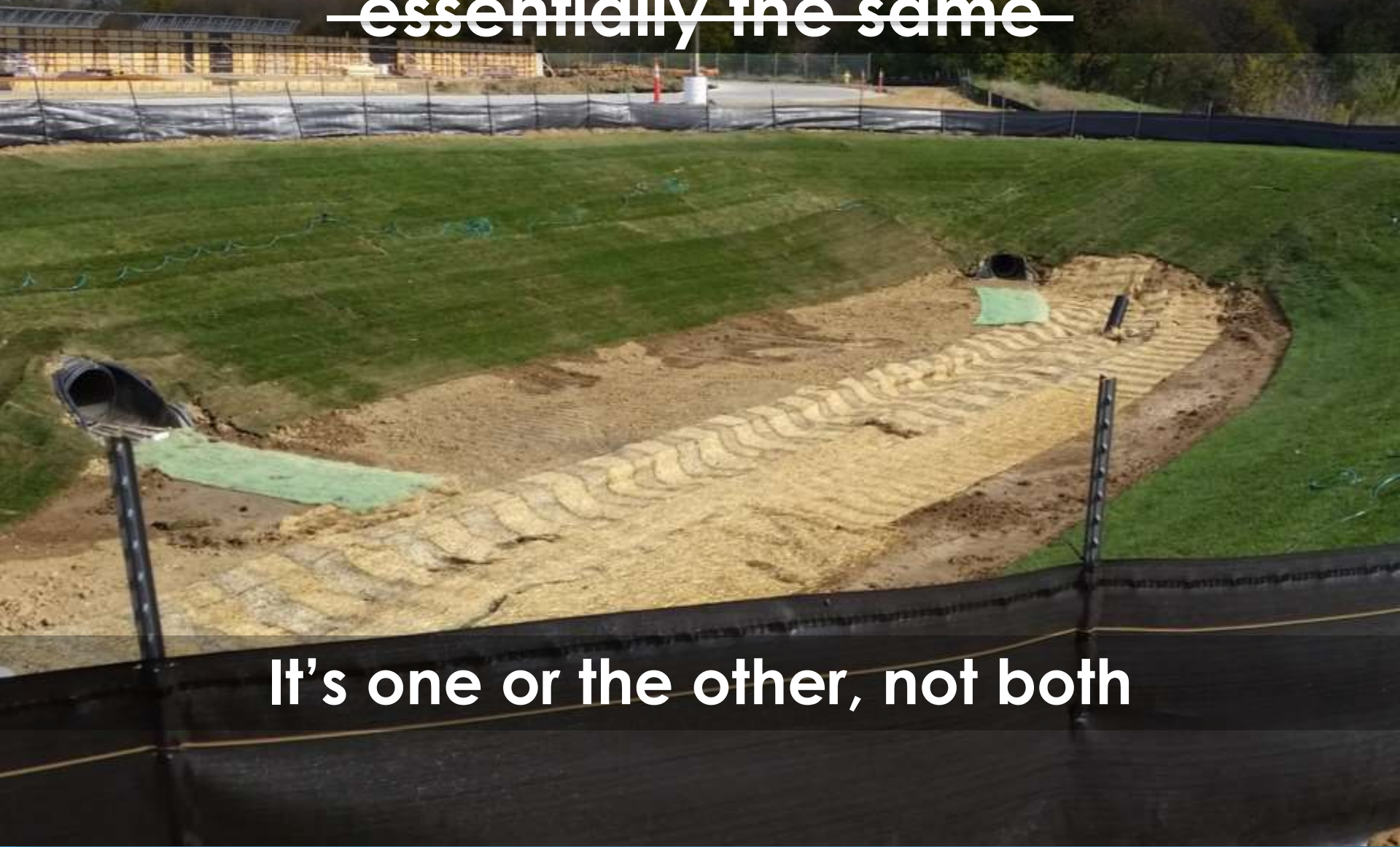
Goal is to keep sediment OUT of the storm sewers

~~Temporary sediment basins don't need
to be stabilized~~

Side slopes & embankment need to be stabilized
Stabilize inflow points

01/07/2020 15:33

~~Temporary sediment basins &
permanent post-construction BMPs are
essentially the same~~



It's one or the other, not both

~~Post-construction requirements don't
have to be completed prior to grading
permit closure~~

Yes, it needs to be certified

~~It's a construction site, what do you expect?~~



Good Housekeeping

- Cover municipal waste containers
- Stage away from inlets
- Manage material storage areas



Green Infrastructure Assessments



Saddlebrook Green Roof

- Comparing green & gray roofs
- 2019 results for the green roof:
 - 83% total flow reduction
 - 92% peak flow reduction

Sewer Maintenance

	Number of metered events	Number of unmetered events	Inflow volume, cubic ft	Outflow volume, cubic ft.	Removal, cubic feet	Removal, percentage	Average peak reduction, percent	Maximum peak reduction, percent
Total	166	78	119,292	68,531	50,761	43%	79%	100%
2015	38	24	19,063	11,360	7,703	40%	73%	100%
2016	34	28	22,512	17,532	4,980	22%	76%	100%
2017	39	22	19,562	13,335	6,227	32%	89%	100%
2018	55	4	58,154	26,303	31,851	55%	91%	100%

- 5 years of monitoring –EPA ORD*, USGS, City of Omaha, UNO
- 2019 was challenging, summarizing now

Bioretention Systems

- Hitchcock Park valve video ->
- Design works
- Installation oversight important
- Minimal roots in underdrains so far on older systems
- Infiltration assessment on 9 sites
- Summarizing 2019 monitoring now



2019-Mar-11 01:30:06.392 PM



Camera 2 - Garden
UNO Welcome Center

UNO Welcome Center

March 2019 melting event

2019-Jan-01 12:00:04.807 PM



Camera 2 - Garden
UNO Welcome Center

UNO Welcome Center

2019 season in a minute

Resources

OmahaPlants.org

OmahaStormwater.org



Facebook – Omaha Stormwater Program



Visit our table for Field Guide Flipbooks & more!



Final Notes

- If you see stormwater pollution, call 402-444-3908
- Don't hesitate to call or email if you have any questions
- Contact us if interested in having us come out to present
- We are doing good things!

Thank you! Any Questions?



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