NJ HMD
(Hydrologic Modeling Database)

Helping NJ Manage and Maintain its Stormwater Infrastructure

Presented by:

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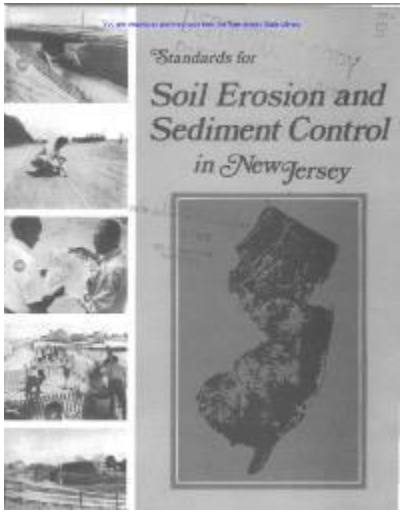
NJ Department of Agriculture

I. A little (very little) Background…

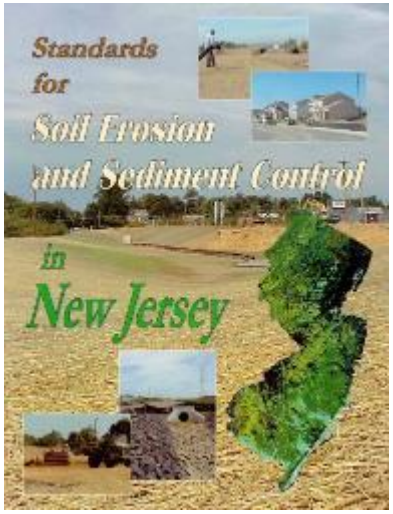
Pre-1976 – Erosion and Sediment Control was only the domain of agriculture.

Little thought was given to emerging concepts of stormwater runoff-related erosion from new development

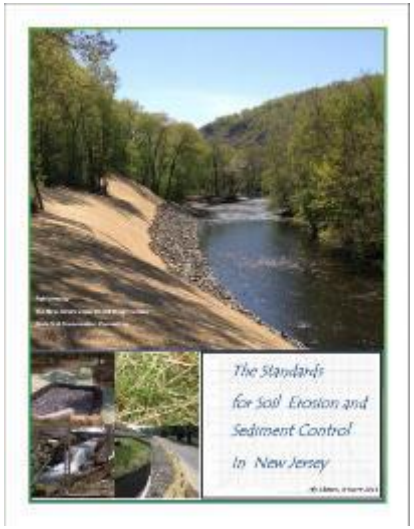
Erosion control on development sites became a priority in 1976 with the adoption of the **NJ Soil Erosion and *Sediment Control Act and Sediment and Erosion Control Standards***. 32 Design Standards – 10 vegetative, 22 engineering/structural



1972 -1987



1999

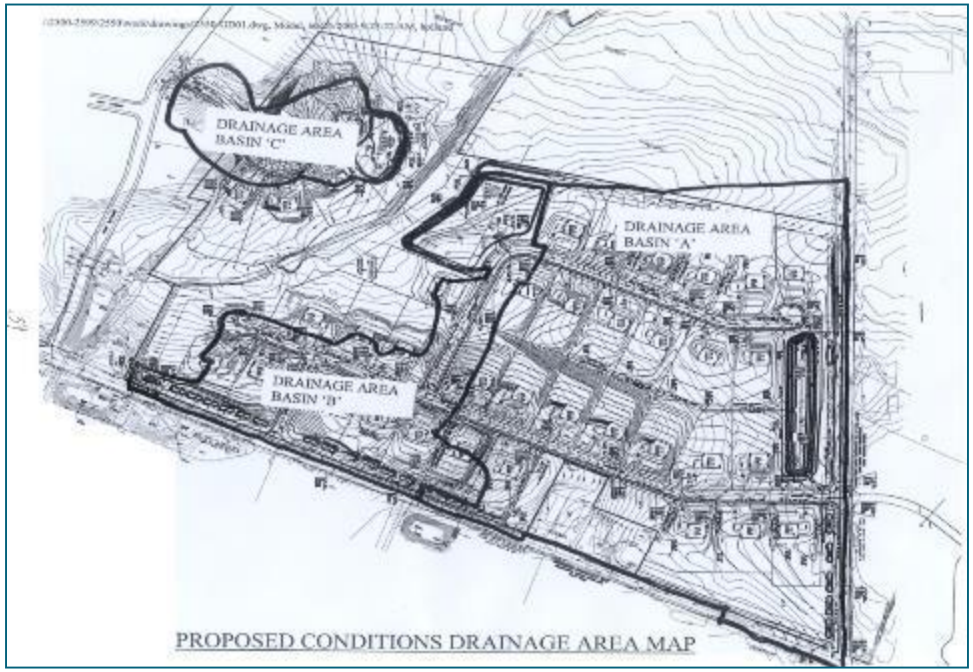


2017

Program Stats-

- ***Since 1976:***
- 168,000 applications
- 978,000 acres of land
- 4.4M staff hours
- 2.4M physical inspections
- 16,000 stormwater basins in the database

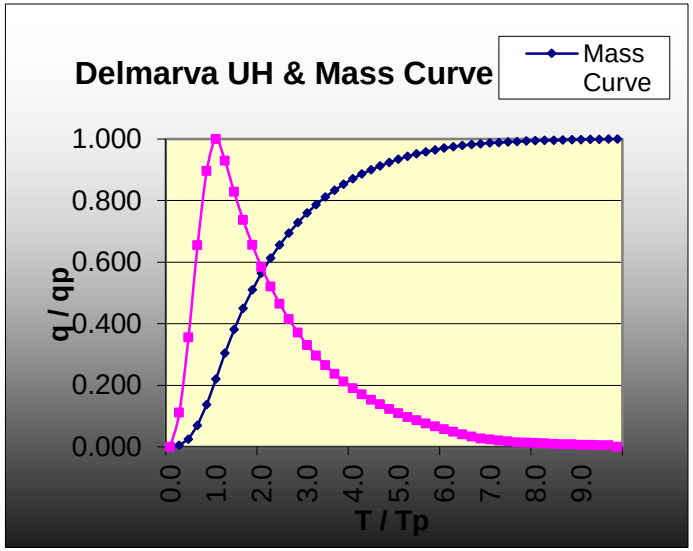
Erosion Control Evolution-



Basic, Temporary Controls:

- Filters
- Barriers
- Rip rap outlets
- Vegetative stabilization
- Inlet protection
- Grass waterways
- Diversions

However, over time, plan requirements became more sophisticated and expanded upon emerging engineering practices of detention basin design, watershed modeling, unit hydrograph theory etc.



E&S Stormwater Design

In 1986, Hunter Birckhead, P.E. State Erosion Control Engineer (ret.) instituted the collection of hydrologic and hydraulic site and basin design information which was being submitted to Districts for plan approval.

Post-development stormwater basin and site hydrology was captured on forms and site plans submitted to Districts for building complex models

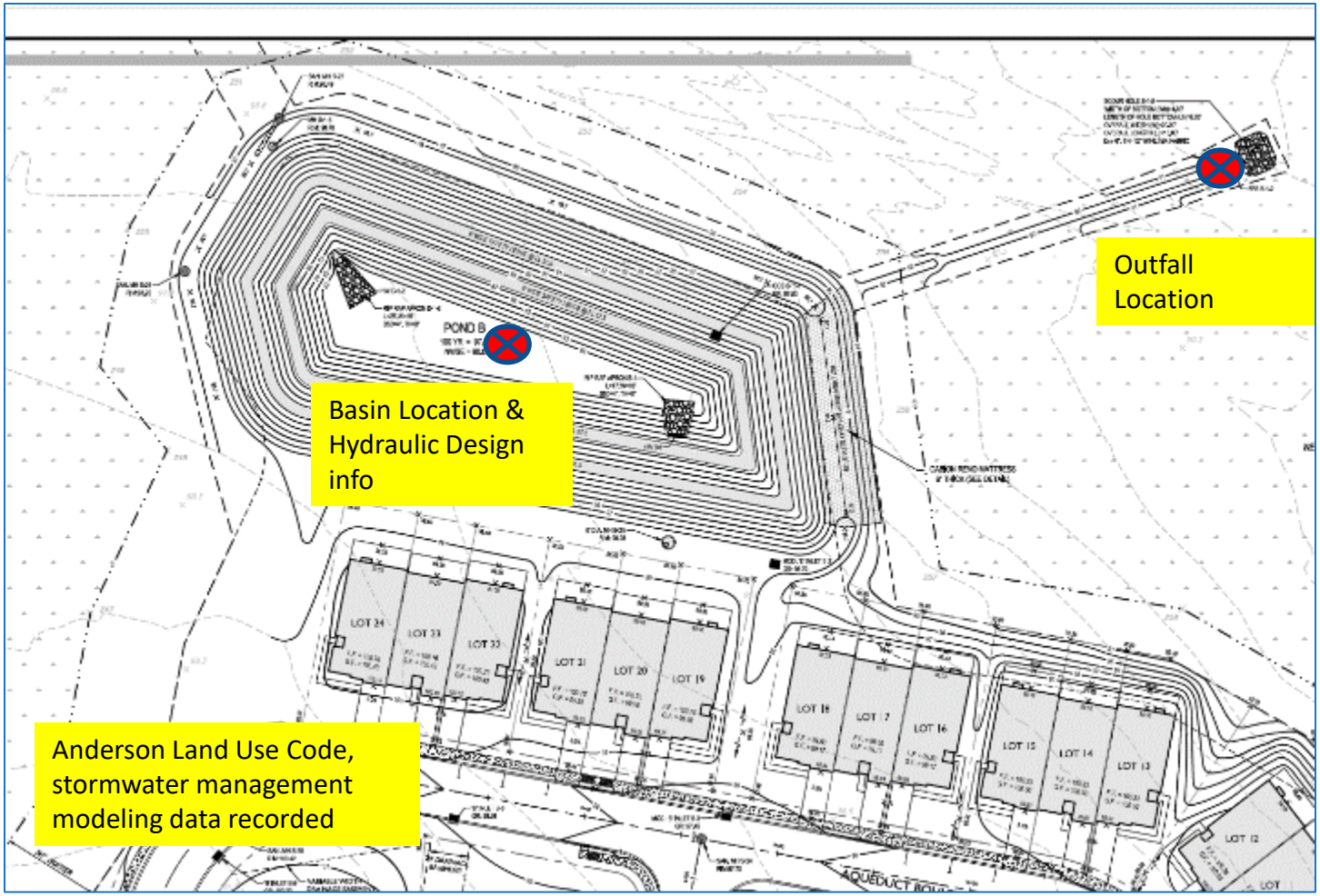
His vision preceded the available technology limits by about 20 years…

II. Fast-Forward 20 years: NJ Hydrologic Modeling Database

Publicly available database searchable by location:
https://hydro.Rutgers.edu

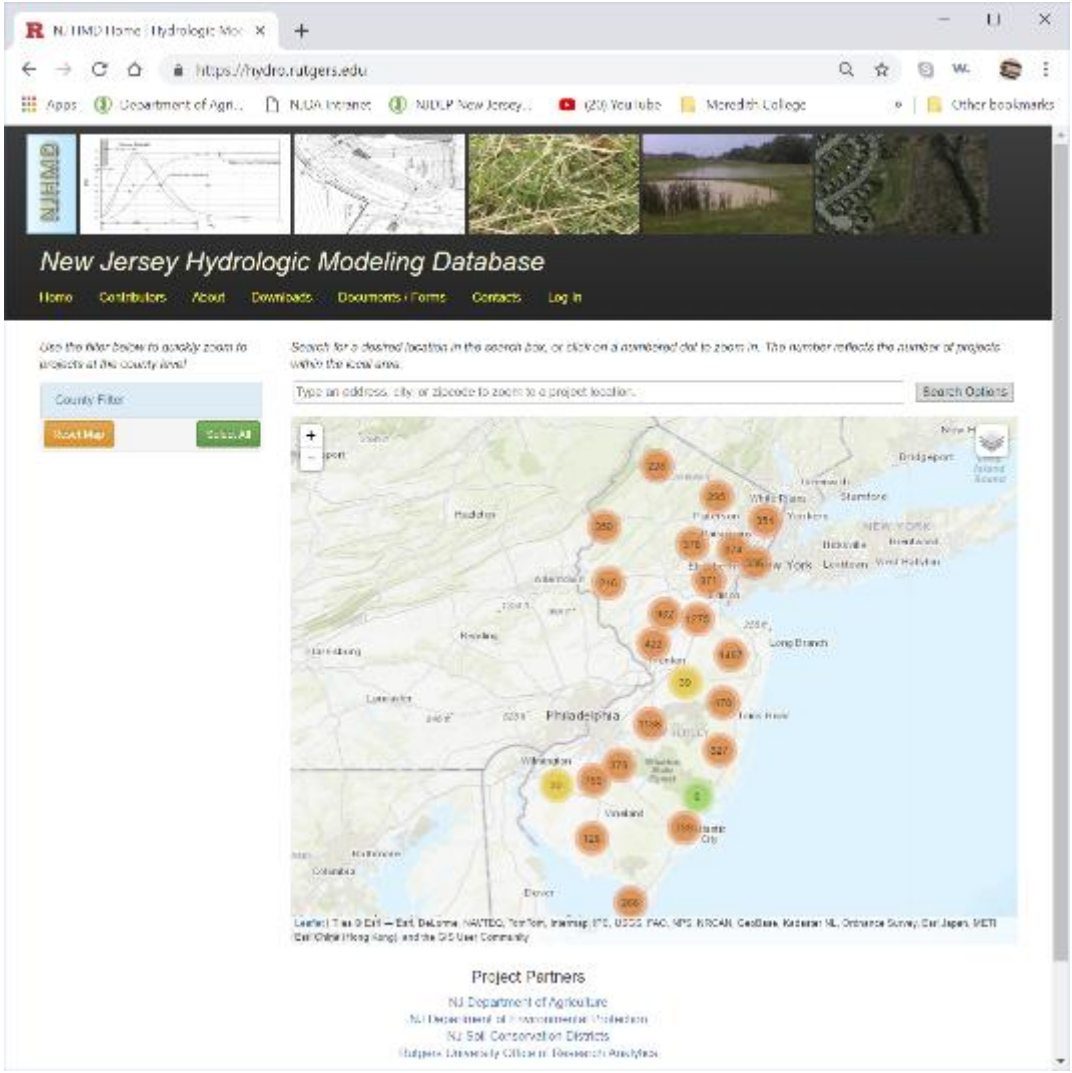
- Site hydrology and basin hydraulic design data uploaded
  - CN, Tc, DA, % impervious, rating tables, outlet hydraulics, SSD Tables
- Paper plans converted to electronic images and uploaded
- Locations of sites and basins geo-located by the application
- Land use (Anderson 4 digit code) change recorded
- Capability to record basin inspections with documents and images
- Everything needed to recreate the project in a hydrologic runoff model

New Jersey Department of Agriculture
Hydrologic Modeling Database



NJ Hydrologic Modeling Database – NJHMD
"H&H" as we call it – hydrology and hydraulics

- Searchable
- Zoom to location
- Turn on different layers
- "Find my location"
- Dots represent numbers of projects in that area
- Narrow map focus by county area



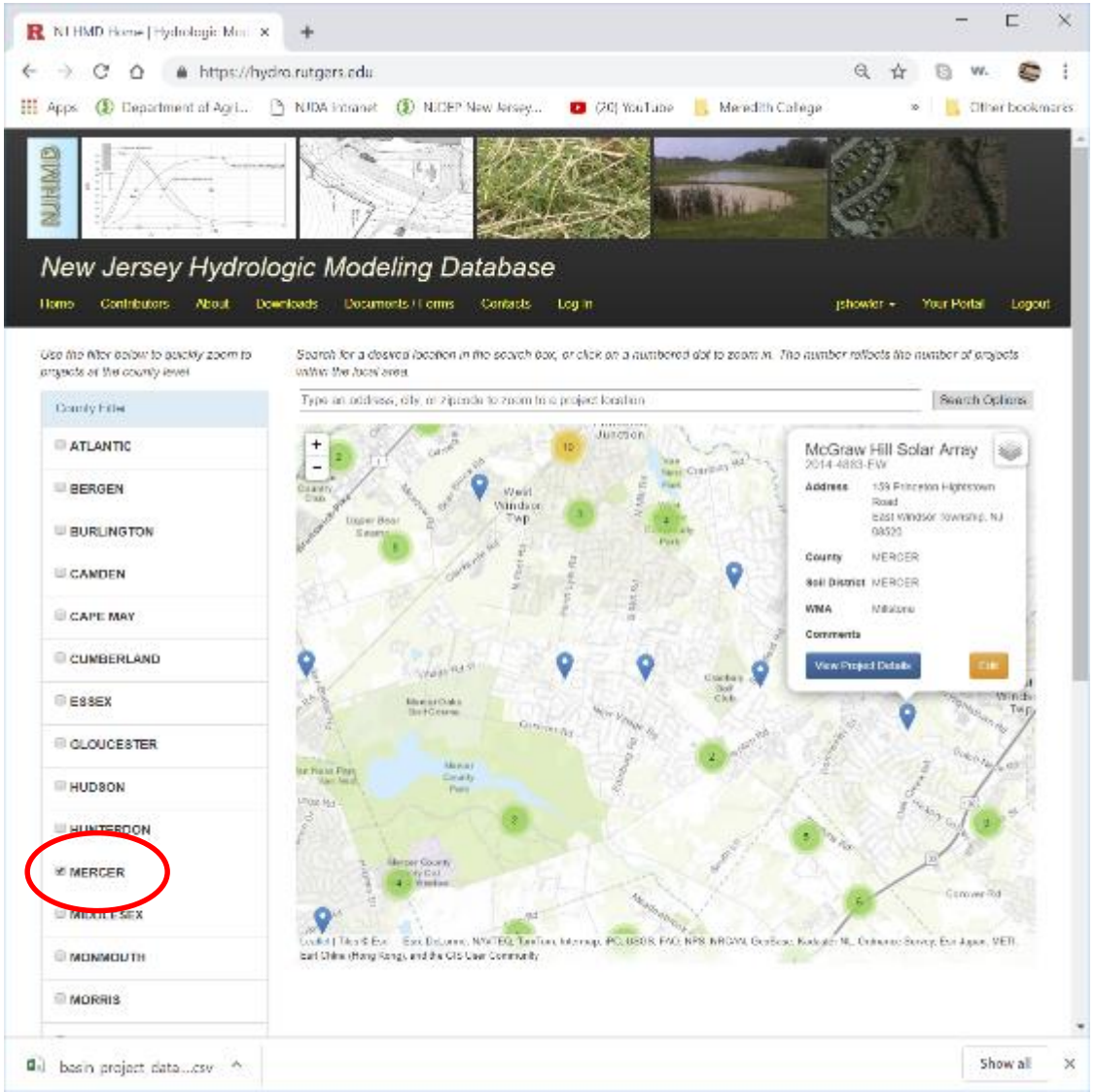
https://hydro.Rutgers.edu

Mobile-Friendly

* Search by address
* Search by current position
* All data is accessible
* Can be used to perform basin inspections on site

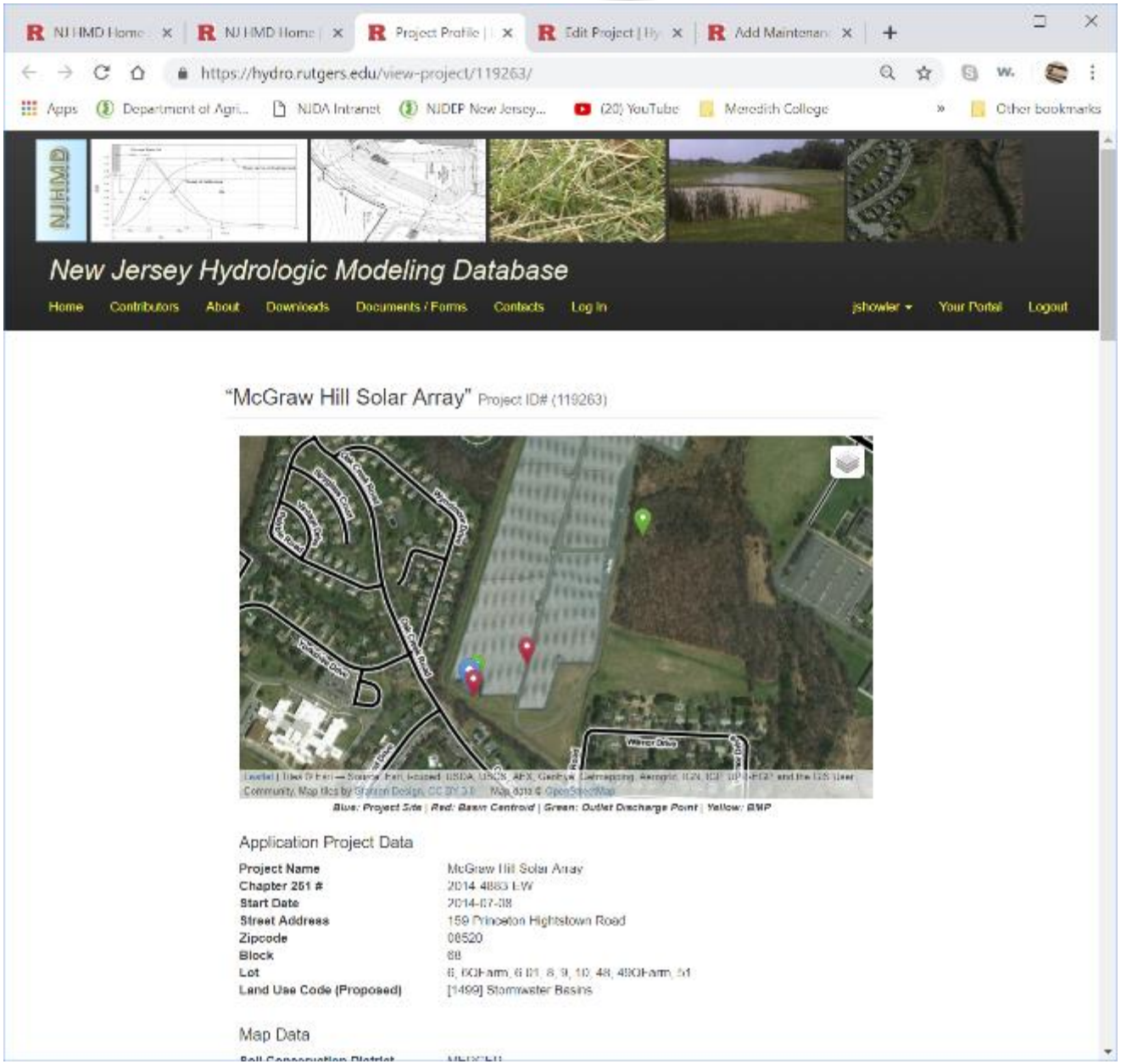
Viewing Records – Zoom and Click

- Clicking on a marker reveals a mini-widow with project name and a button to open the data window for that project
- Administrators have an additional button for direct data editing



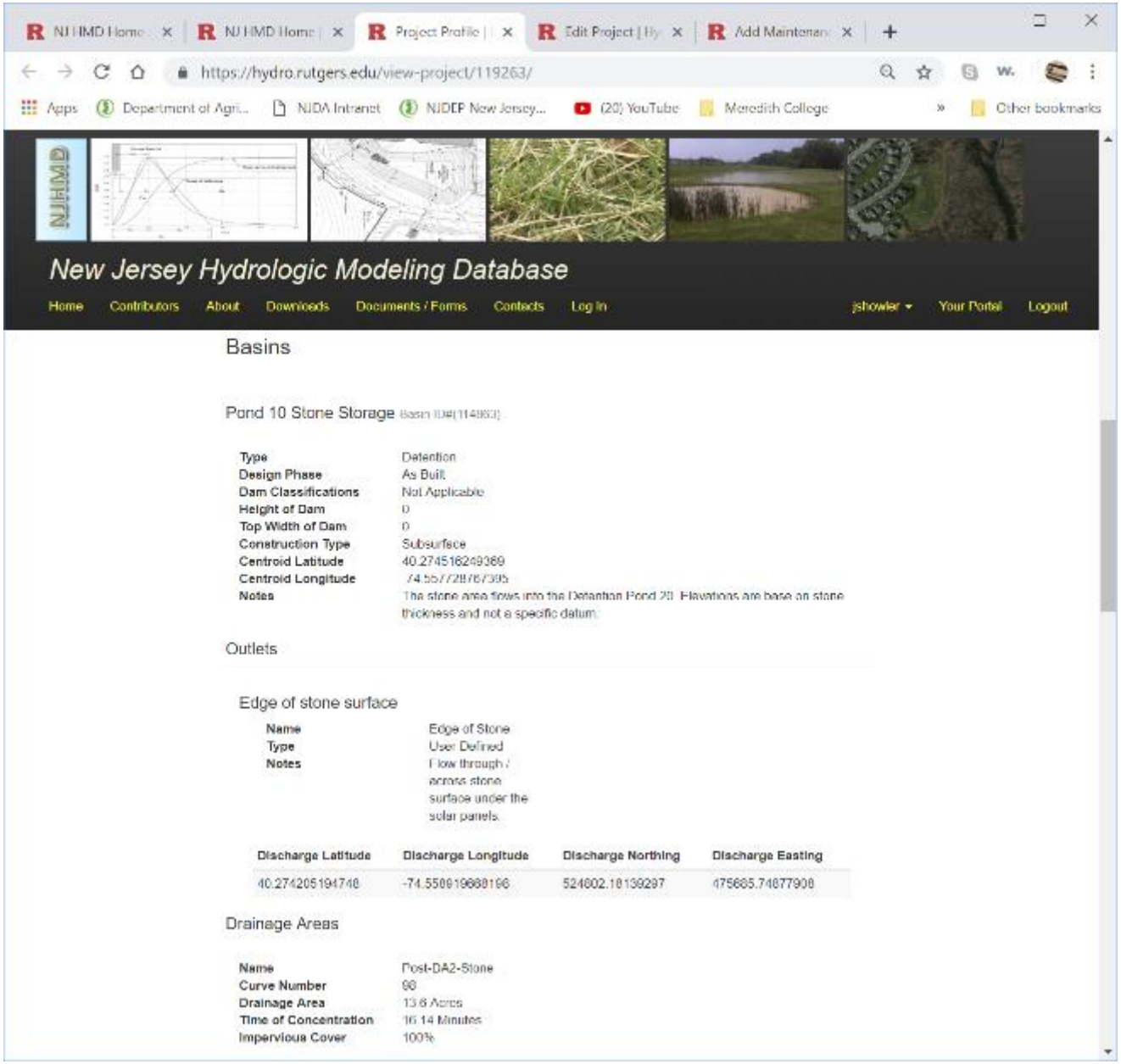
Project Window

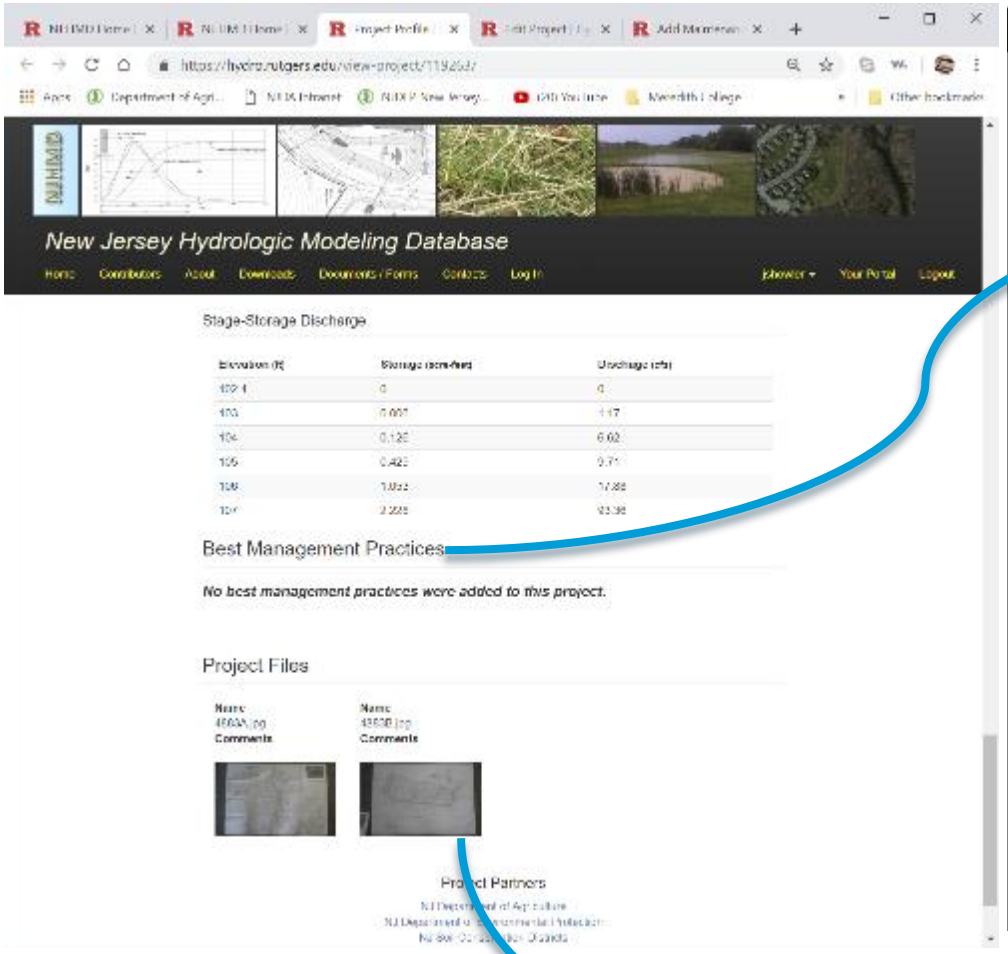
- Aerial View showing project, basin and discharge locations.
- Main data – ownership, land use, location

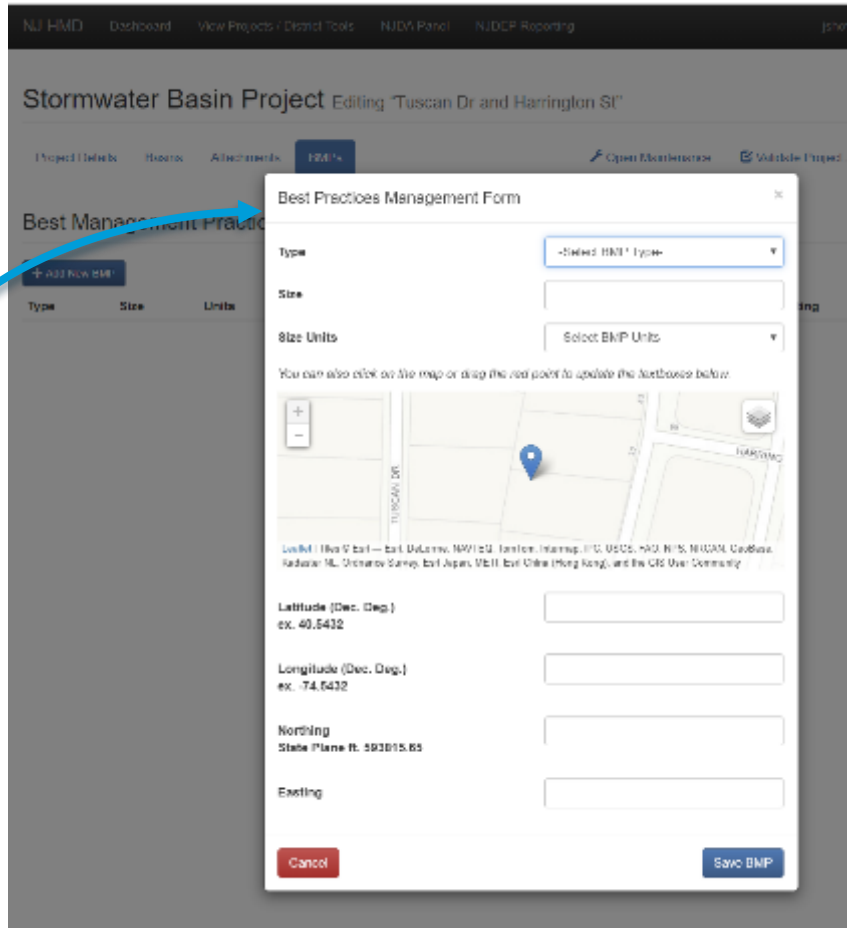


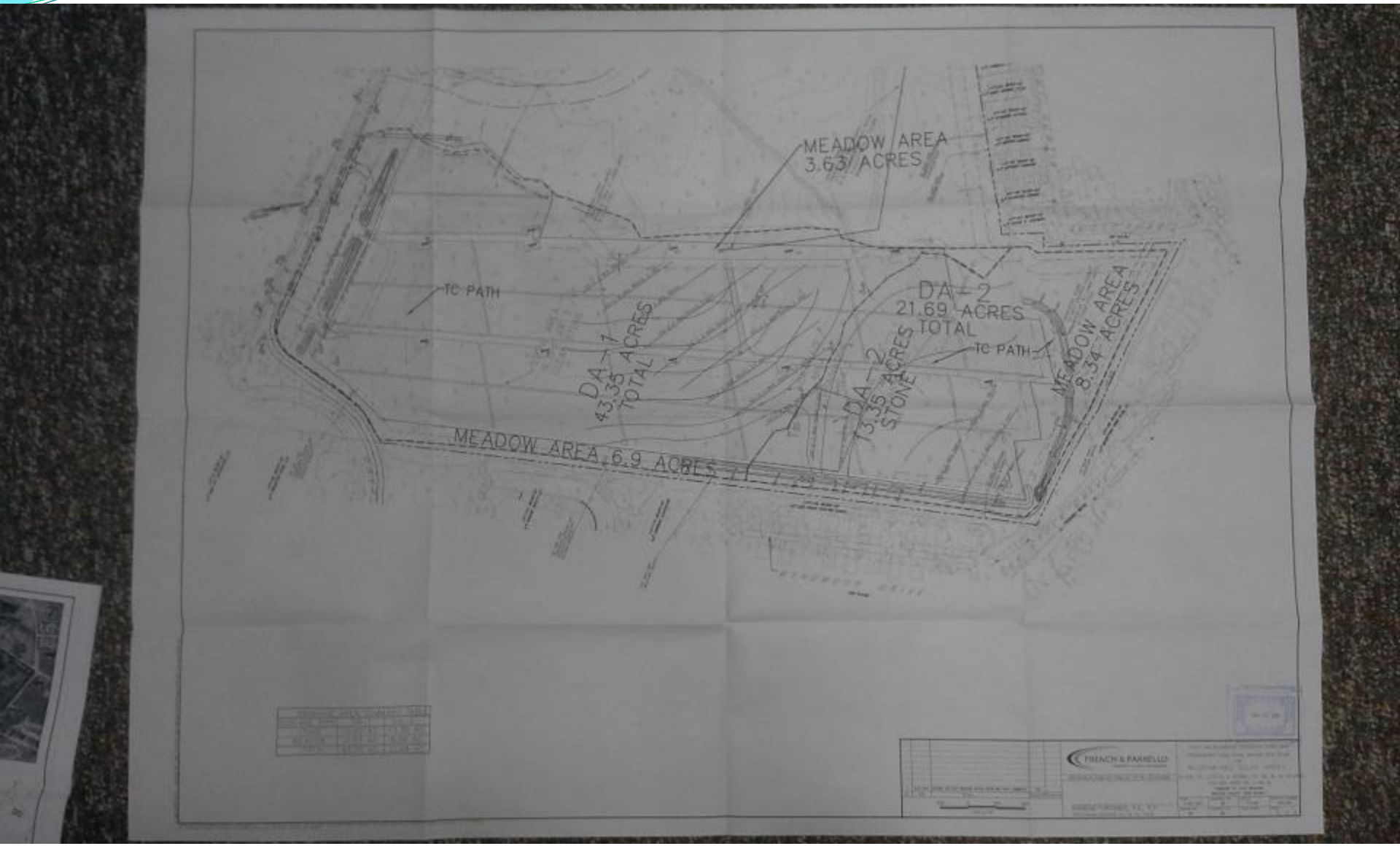
Scroll Down-

- Basin information
  - Design
  - Type
  - Dam class
  - Notes
  - Location
- Outlet information
- Drainage area information
  - CN
  - Tc
  - DA
  - % imp.



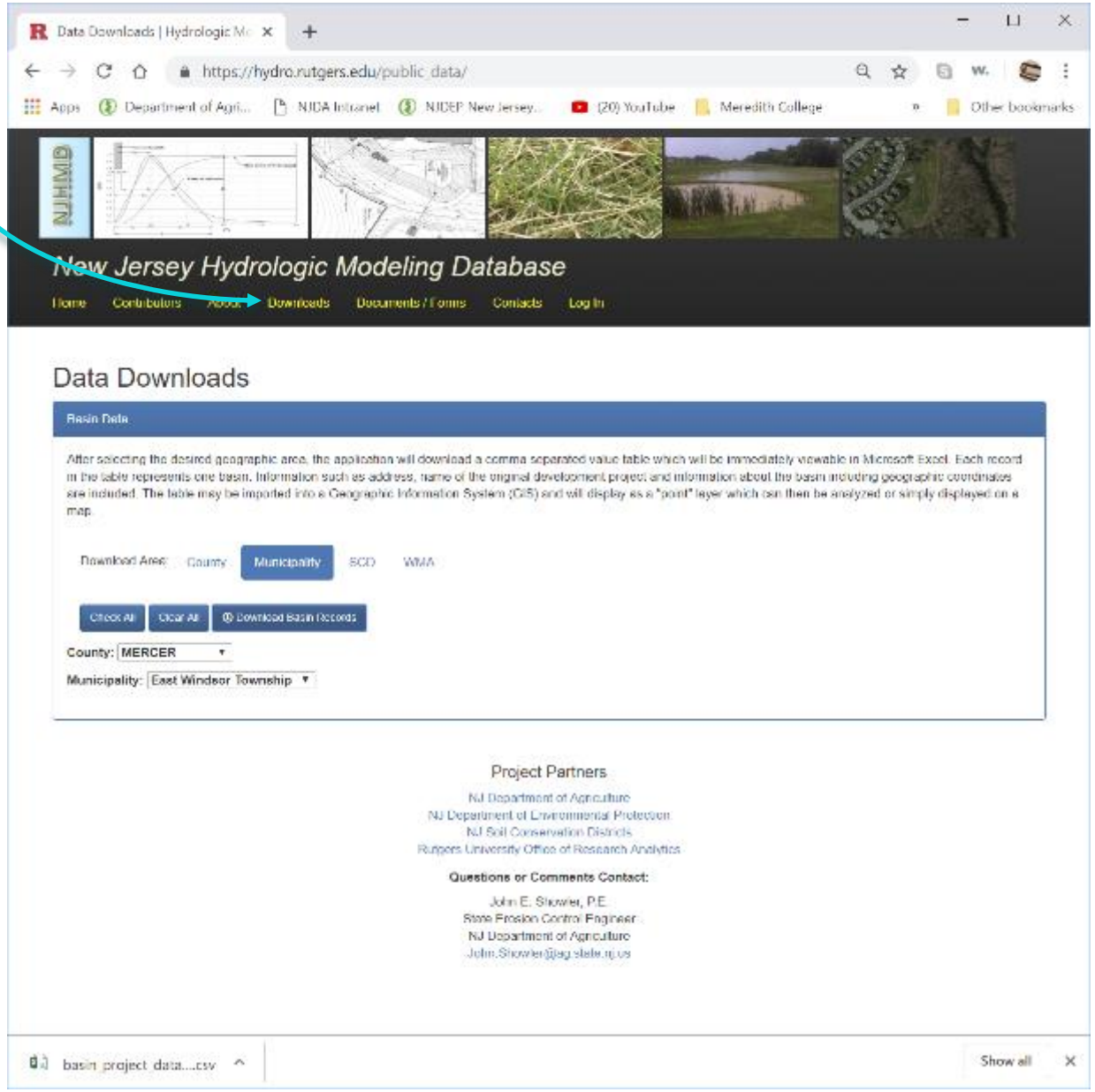

New Jersey Hydrologic Modeling Database
Stage-Storage Discharge
Best Management Practices
No best management practices were added to this project.
Project Files
Project Partners

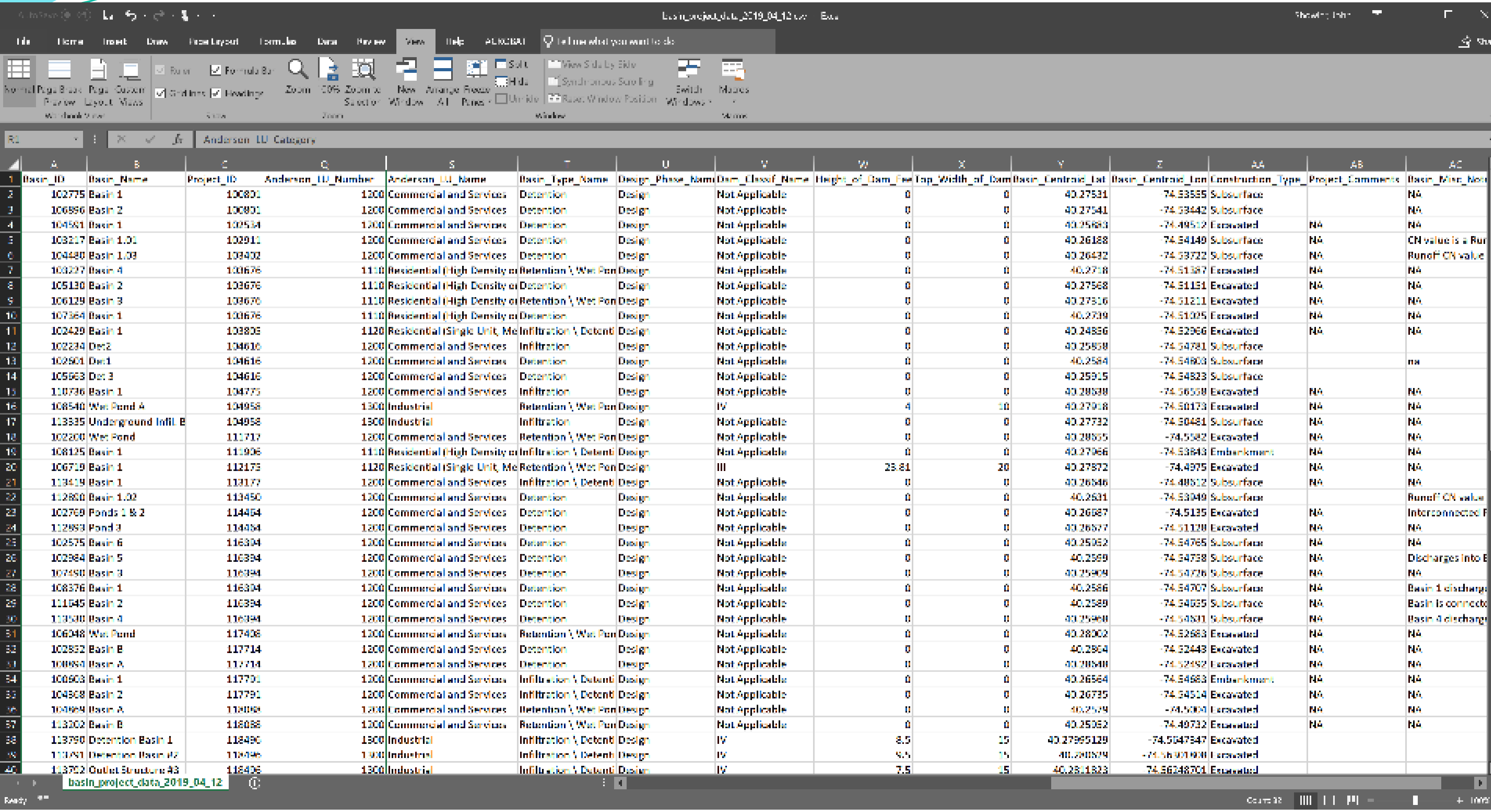

Stormwater Basin Project Editing "Tuscan Dr and Harrington St"
Best Practices Management Form
Type
Size
Size Units
Select BMP Units
Latitude (Dec. Deg.)
ex. 40.5432
Longitude (Dec. Deg.)
ex. -74.5432
Northing
Easting
Cancel
Save BMP


MEADOW AREA
3.63 ACRES
TC PATH
DA-1
43.35 ACRES
TOTAL
DA-2
21.69 ACRES
TOTAL
TC PATH
DA-2
13.35 ACRES
STONE
MEADOW AREA
8.34 ACRES
MEADOW AREA 6.9 ACRES

Downloadable Data

- Filter by geographic location
- 16,000 individual basin records on file
- Download spatial-tabular data (Excel)





	A	B	C	Q	S	T	U	V	W	X	Y	Z	AA	AB	AC
1	Basin_ID	Basin_Name	Project_ID	Anderson_LU_Number	Anderson_LU_Name	Basin_Type_Name	Design_Phase_Nam	Dam_Classif_Name	Height_of_Dam_Fee	Top_Width_of_Dam	Basin_Centroid_Lat	Basin_Centroid_Lon	Construction_Type_	Project_Comments	Basin_Misc_Note
2	102775	Basin 1	100801	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.27531	-74.53535	Subsurface		NA
3	106996	Basin 2	100801	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.27541	-74.53442	Subsurface		NA
4	104581	Basin 1	102534	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.25683	-74.49512	Excavated	NA	NA
5	103217	Basin 1.01	102911	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.26188	-74.54149	Subsurface	NA	CN value is a Run
6	104480	Basin 1.03	103402	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.26432	-74.53722	Subsurface	NA	Runoff CN value
7	103227	Basin 4	103676	1110	Residential (High Density or	Retention \ Wet Pon	Design	Not Applicable	0	0	40.2718	-74.51387	Excavated	NA	NA
8	105130	Basin 2	103676	1110	Residential (High Density or	Detention	Design	Not Applicable	0	0	40.27568	-74.51151	Excavated	NA	NA
9	106129	Basin 3	103676	1110	Residential (High Density or	Retention \ Wet Pon	Design	Not Applicable	0	0	40.27316	-74.51211	Excavated	NA	NA
10	107364	Basin 1	103676	1110	Residential (High Density or	Detention	Design	Not Applicable	0	0	40.2739	-74.51025	Excavated	NA	NA
11	102429	Basin 1	103803	1120	Residential (Single Unit, Me	Infiltration \ Detenti	Design	Not Applicable	0	0	40.24836	-74.52966	Excavated	NA	NA
12	102234	Det2	104616	1200	Commercial and Services	Infiltration	Design	Not Applicable	0	0	40.25858	-74.54781	Subsurface		
13	102501	Det1	104616	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.2584	-74.54803	Subsurface		na
14	105563	Det 3	104616	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.25915	-74.54823	Subsurface		
15	110736	Basin 1	104775	1200	Commercial and Services	Infiltration	Design	Not Applicable	0	0	40.28538	-74.56558	Excavated	NA	NA
16	108540	Wet Pond A	104958	1300	Industrial	Retention \ Wet Pon	Design	IV	4	10	40.27918	-74.50173	Excavated	NA	NA
17	113335	Underground Infil. B	104958	1300	Industrial	Infiltration	Design	Not Applicable	0	0	40.27732	-74.50481	Subsurface	NA	NA
18	102200	Wet Pond	111717	1200	Commercial and Services	Retention \ Wet Pon	Design	Not Applicable	0	0	40.28555	-74.5582	Excavated	NA	NA
19	108125	Basin 1	111906	1110	Residential (High Density or	Infiltration \ Detenti	Design	Not Applicable	0	0	40.27966	-74.53843	Embankment	NA	NA
20	106719	Basin 1	112173	1120	Residential (Single Unit, Me	Retention \ Wet Pon	Design	III	23.81	20	40.27872	-74.4975	Excavated	NA	NA
21	113419	Basin 1	113177	1200	Commercial and Services	Infiltration \ Detenti	Design	Not Applicable	0	0	40.26546	-74.48812	Subsurface	NA	NA
22	112820	Basin 1.02	113450	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.2631	-74.53049	Subsurface		Runoff CN value
23	102769	Ponds 1 & 2	114464	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.26087	-74.5135	Excavated	NA	Interconnected F
24	112893	Pond 3	114464	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.26577	-74.51128	Excavated	NA	NA
25	102575	Basin 6	116394	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.25062	-74.54765	Subsurface	NA	NA
26	102984	Basin 5	116394	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.2589	-74.54738	Subsurface	NA	Discharges into E
27	107450	Basin 3	116394	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.25909	-74.54726	Subsurface	NA	NA
28	108376	Basin 1	116394	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.2586	-74.54707	Subsurface	NA	Basin 1 discharge
29	111645	Basin 2	116394	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.2589	-74.54635	Subsurface	NA	Basin is connecte
30	113530	Basin 4	116394	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.25960	-74.54631	Subsurface	NA	Basin 4 discharge
31	106048	Wet Pond	117406	1200	Commercial and Services	Retention \ Wet Pon	Design	Not Applicable	0	0	40.28002	-74.52583	Excavated	NA	NA
32	102832	Basin B	117714	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.2804	-74.52443	Excavated	NA	NA
33	108894	Basin A	117714	1200	Commercial and Services	Detention	Design	Not Applicable	0	0	40.28048	-74.52492	Excavated	NA	NA
34	100903	Basin 1	117791	1200	Commercial and Services	Infiltration \ Detenti	Design	Not Applicable	0	0	40.26564	-74.54683	Embankment	NA	NA
35	104508	Basin 2	117791	1200	Commercial and Services	Infiltration \ Detenti	Design	Not Applicable	0	0	40.26735	-74.54514	Excavated	NA	NA
36	104969	Basin A	118088	1200	Commercial and Services	Retention \ Wet Pon	Design	Not Applicable	0	0	40.2579	-74.5004	Excavated	NA	NA
37	113202	Basin B	118088	1200	Commercial and Services	Retention \ Wet Pon	Design	Not Applicable	0	0	40.25062	-74.49732	Excavated	NA	NA
38	113790	Detention Basin 1	118490	1300	Industrial	Infiltration \ Detenti	Design	IV	8.5	15	40.27965129	-74.5047347	Excavated		
39	113791	Detention Basin #2	118496	1300	Industrial	Infiltration \ Detenti	Design	IV	5.5	15	40.280829	-74.56301908	Excavated		
40	113792	Outlet Structure #3	118496	1300	Industrial	Infiltration \ Detenti	Design	IV	7.5	15	40.2811823	-74.56248701	Excavated		

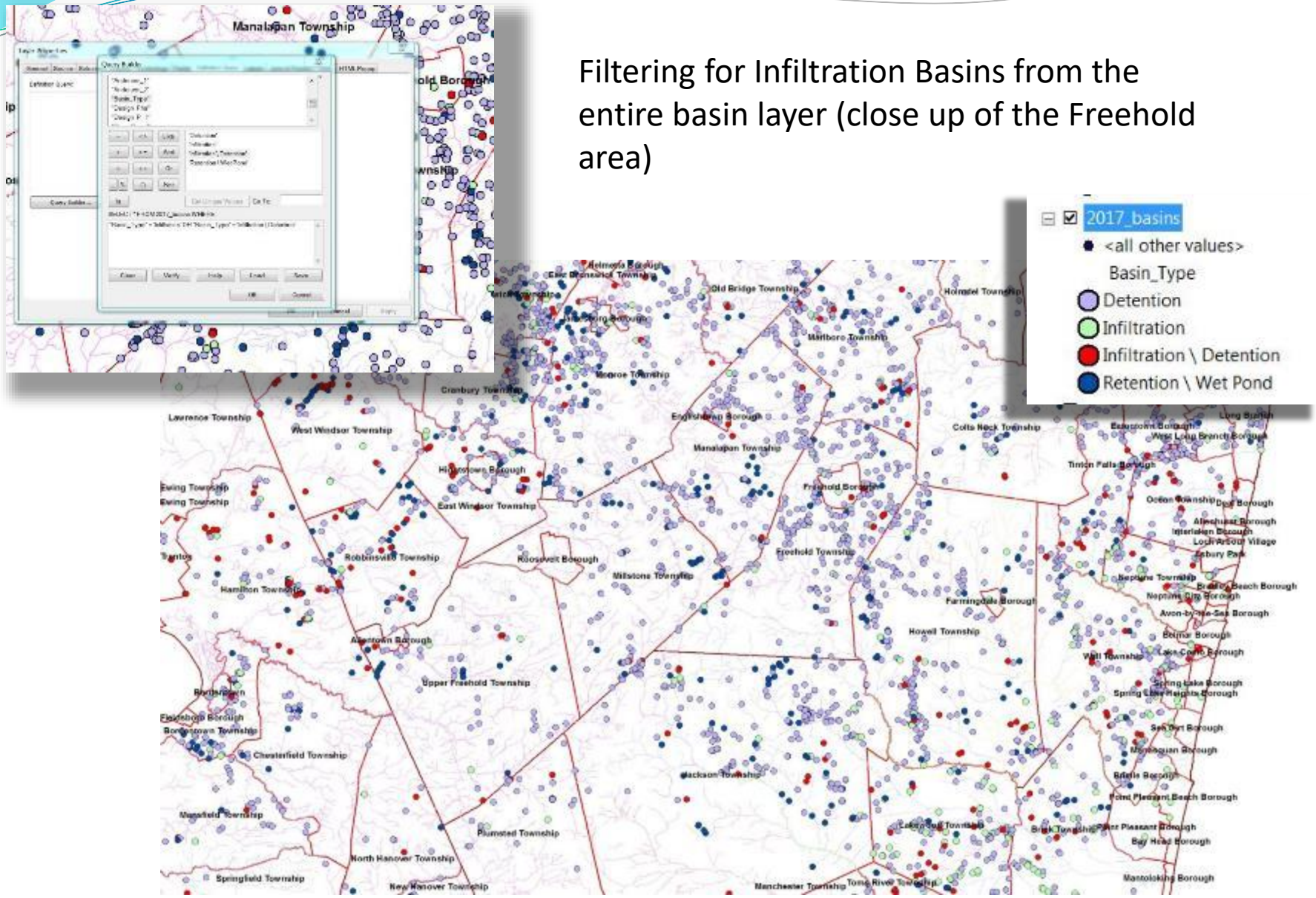
Each row is one basin record with parent site name & data with basin location & data

III. Example of Using NJHMD Basin Download Data in GIS

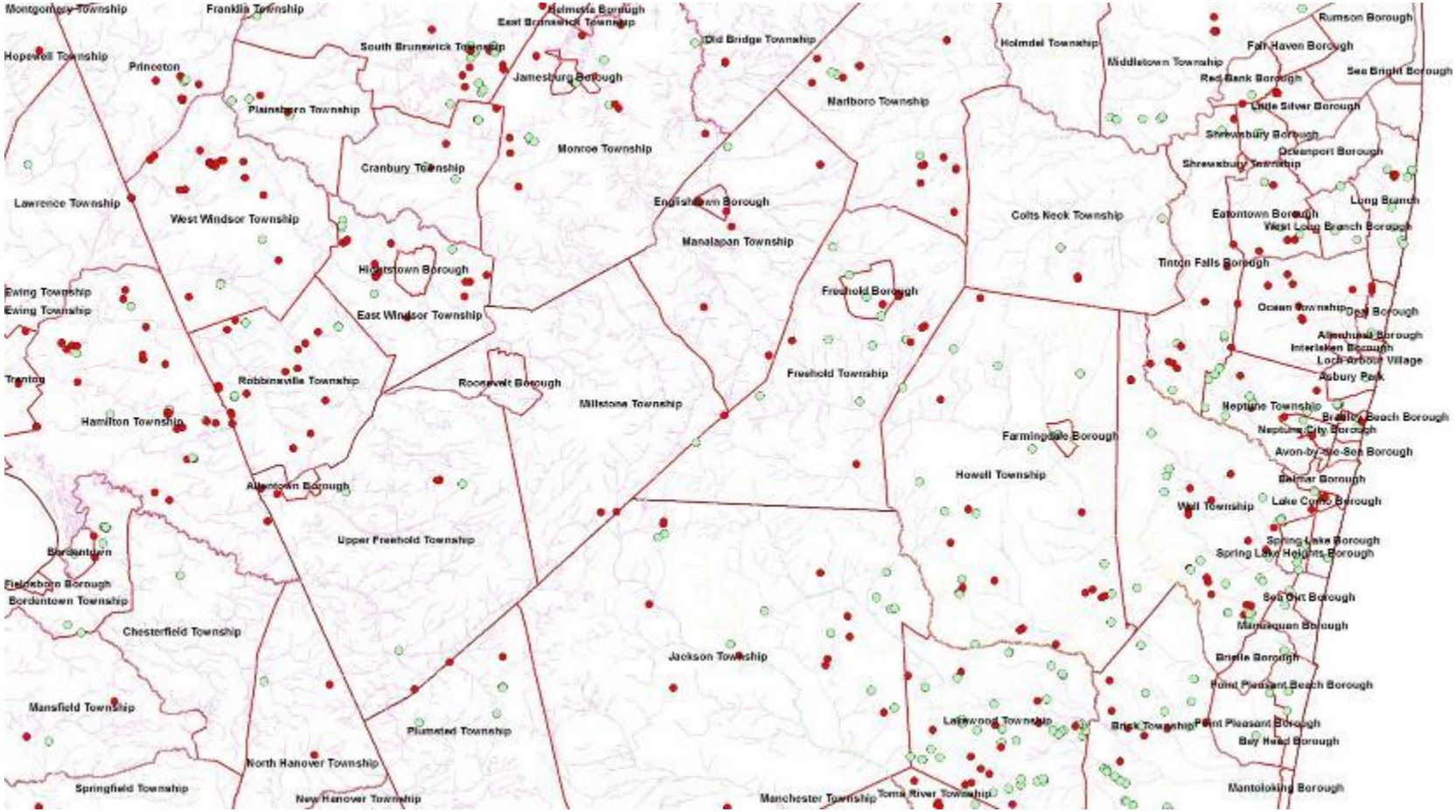
Goal:

- download a basin table
- import to GIS
- identify infiltration basins in proximity to streams.

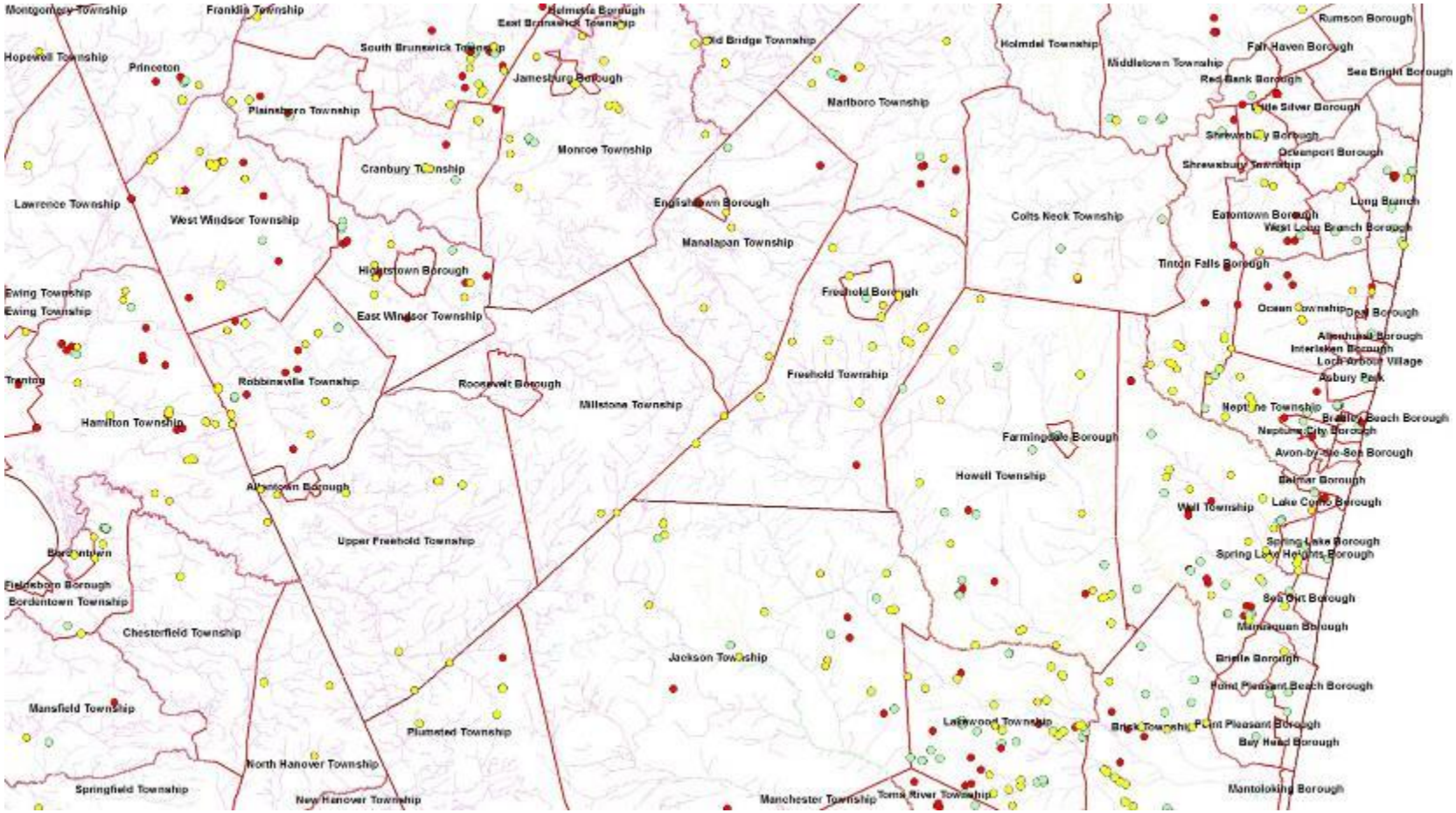
Filtering for Infiltration Basins from the entire basin layer (close up of the Freehold area)



Infiltration Basins Only after filtering



All Infiltration basins selected that are within 1000 feet of the Surface Water Quality Standards Stream Network



Statewide data table (entire table) of Infiltration basins with 1,312 basins selected within 1000 feet of the stream network.

Table

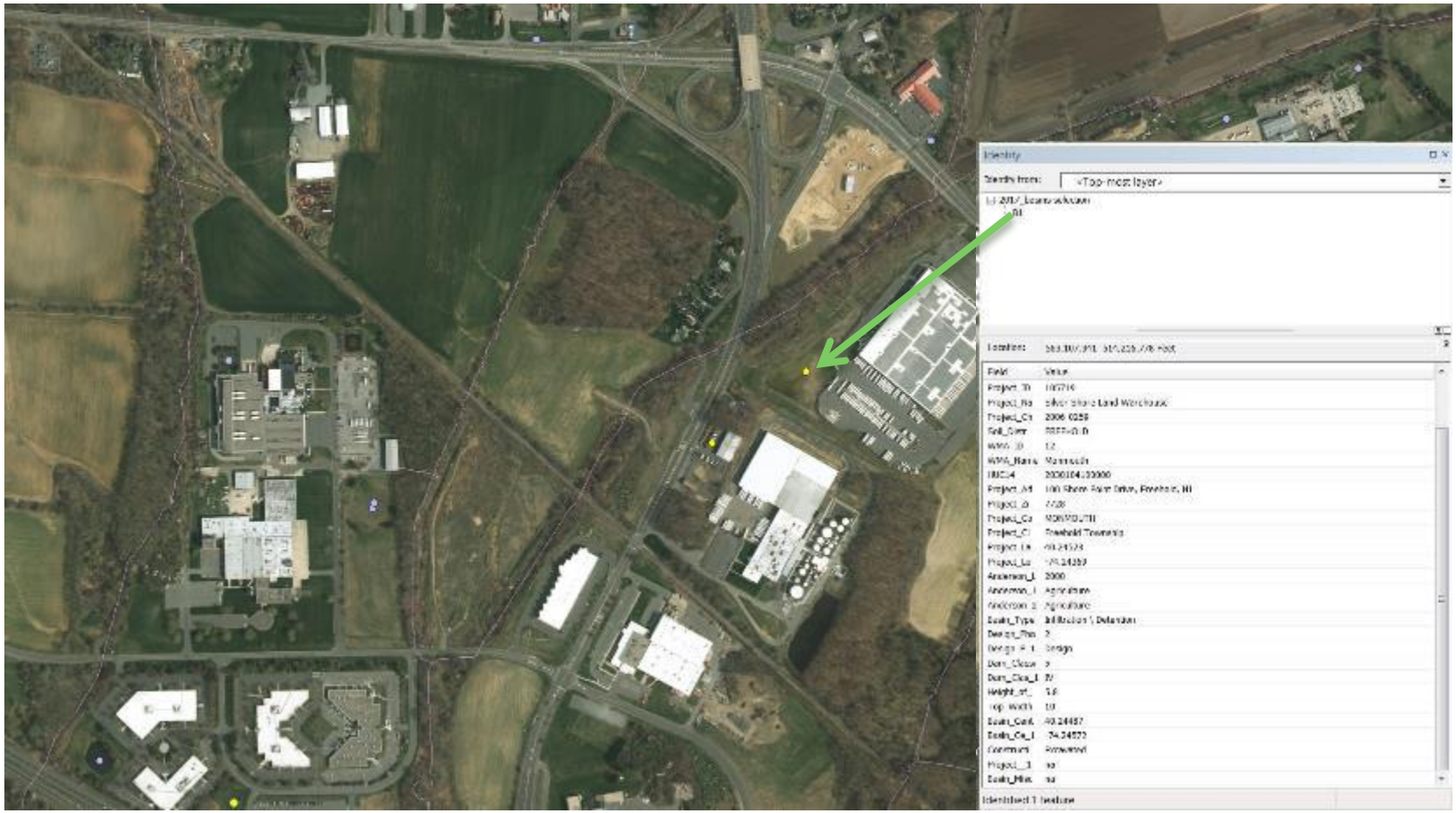
2017_basins

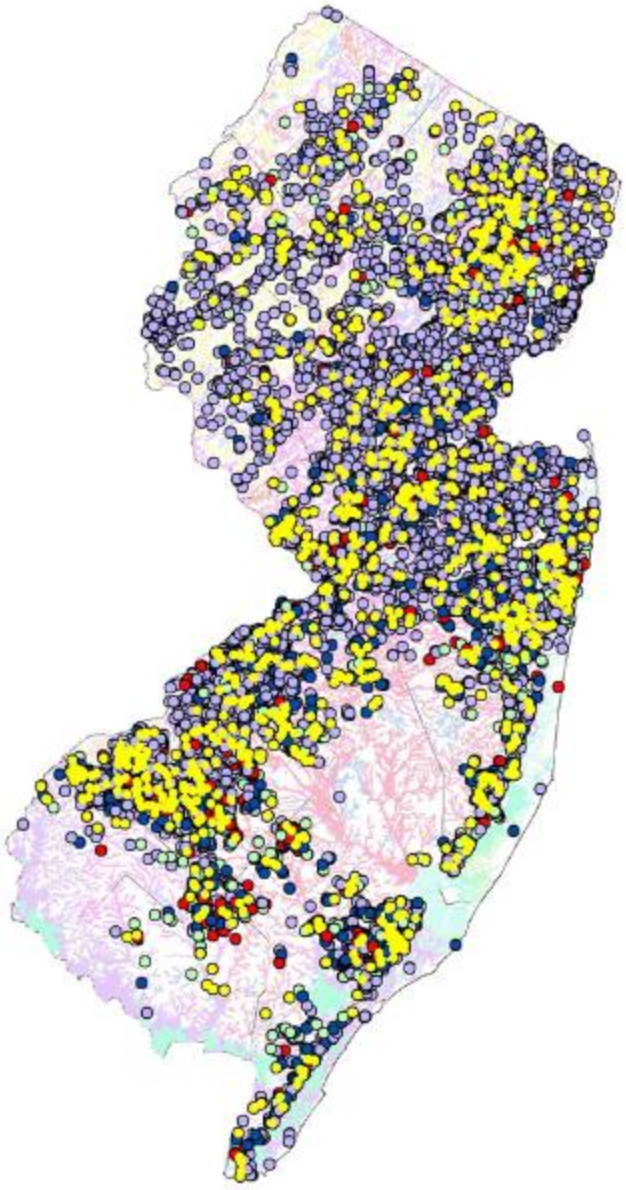
FID	Shape *	Basin_ID	Basin_Name	Project_ID	Project_Na	Project_Ch	Soil_Distr	WMA_ID	WMA_Name
21	Point	103746	Basin L	100133	Becrett	13031	WARREN	1	Upper Delaware
22	Point	109030	Basin C	100133	Becrett	13031	WARREN	1	Upper Delaware
23	Point	109252	Basin B	100133	Becrett	13031	WARREN	1	Upper Delaware
86	Point	101275	B	100595	Hillsborough Estates	2007-9214	SOMERSET-UNION	10	Millstone
89	Point	112278	Basin 1	100600	Alfabex Building Addition	1986-0619	FREEHOLD	9	Lower Raritan, South River, and Lawren
138	Point	113072	Basin 1	100070	Driscoll Warehouse Development	214-P-4054	HUDSON-ESSEX & PASSAIC	4	Lower Passaic and Saddle
199	Point	111802	Basin	100222	Westampton Middle School	25107-007	BURLINGTON	19	Rancocas
211	Point	102265	Basin	100247	Westampton Township	25108-110	BURLINGTON	19	Rancocas
212	Point	111352	Basin	100248	Ocean Pointe	13477	OCEAN	13	Barnegat Bay
247	Point	102220	b1	100317	Evesboro Village	25169-193	BURLINGTON	18	Lower Delaware
256	Point	111024	Basin 1	100347	IBEW	63-97AC	CAPE-ATLANTIC	15	Great Egg Harbor
280	Point	113416	b53	100402	Interchange	6810	OCEAN	13	Barnegat Bay
285	Point	109379	basin	100418	TBS Landscape Supplies	6830	OCEAN	13	Barnegat Bay
290	Point	106808	Infiltration/Detention Basin	100428	CVS Pharmacy Store 5461	2005-0057	FREEHOLD	9	Lower Raritan, South River, and Lawren
300	Point	104675	A2	100447	North Village of Sparta, Roads & Drainage	SP682	SUSSEX	2	Wallkill
301	Point	107299	B4	100447	North Village of Sparta, Roads & Drainage	SP682	SUSSEX	2	Wallkill
302	Point	113005	B1	100447	North Village of Sparta, Roads & Drainage	SP682	SUSSEX	2	Wallkill
303	Point	113012	A1	100447	North Village of Sparta, Roads & Drainage	SP682	SUSSEX	2	Wallkill
306	Point	103309	Basin	100457	Edwards Estates	6770	OCEAN	13	Barnegat Bay
319	Point	105253	Infiltration Basin	100475	Old Tavern Plaza	2005-0122	FREEHOLD	20	Assiscunk, Crosswicks, and Doctors
324	Point	105672	Basin	100486	Old Bridge MUA	2007-0043	FREEHOLD	9	Lower Raritan, South River, and Lawren
336	Point	101575	Detention Infiltration Basin	100514	Federal Hill Apartments	200-P-2396	HUDSON-ESSEX & PASSAIC	3	Pompton, Pequannock, Wanaque, Ram
344	Point	108397	Basin	100529	205 West Branch Avenue	4610-PH-04	CAMDEN	18	Lower Delaware
359	Point	101127	b1	100561	Robey's lawnmower Sales & Service	25190-214	BURLINGTON	19	Rancocas
381	Point	103129	Basin	100632	Yeshiva Mayan Hatorah	9414	OCEAN	13	Barnegat Bay
401	Point	113080	Basin	100691	Harry Wright Blvd Reconstruction	5826	OCEAN	13	Barnegat Bay
407	Point	100732	Basin 3	100702	Creekside Affordable Housing	25106-035	BURLINGTON	19	Rancocas
408	Point	102990	Basin 2	100702	Creekside Affordable Housing	25106-035	BURLINGTON	19	Rancocas
409	Point	106392	Basin 1	100702	Creekside Affordable Housing	25106-035	BURLINGTON	19	Rancocas
410	Point	112326	Basin 4	100702	Creekside Affordable Housing	25106-035	BURLINGTON	19	Rancocas
413	Point	107585	Basin	100708	New Central Ave Subdivision	12886	OCEAN	13	Barnegat Bay
421	Point	102342	Large basin	100726	D&F Barnegat Developers, LLC	10847	OCEAN	13	Barnegat Bay
422	Point	107457	small basin	100726	D&F Barnegat Developers, LLC	10847	OCEAN	13	Barnegat Bay
426	Point	107310	Basin	100733	M&M Associates	25195-013	BURLINGTON	14	Mullica
449	Point	107083	Infiltration Basin	100084	Beachfront North	2000-0660	FREEHOLD	12	Monmouth
458	Point	112831	Basin 1	100344	Waterford at Spring Lake Heights	1996-0565	FREEHOLD	12	Monmouth
459	Point	106432	Basin	100524	Dunkin Donuts	2014-110	GLOUCESTER	18	Lower Delaware
464	Point	105016	B	100044	Colucci Site	2000-9357	SOMERSET-UNION	8	North and South Branch Raritan
469	Point	100491	Basin	100076	McGhee's Pub	214 E 4345	HUDSON-ESSEX & PASSAIC	6	Upper Passaic, Whippany, and Rockaw
476	Point	110047	Basin	100160	Track & Field	213 E 3997	HUDSON-ESSEX & PASSAIC	7	Arthur Kill
495	Point	106705	Basin	100314	Holiday Inn Express	2007-154	GLOUCESTER	18	Lower Delaware

1 (1312 out of 3044 Selected)

2017_basins

Zoom to area of interest – basin is an infiltration, class IV dam





Statewide Basin layer showing basins with infiltration component

Possible Analyses:
-basin type
-Basin age (surrogate for retrofit)
-Land use (TMDL)
-SWQS
-Flooding potential
-groundwater impacts
-H&H research (CN's, PRF's Tc)
-identification of possible dams
-basin maintenance records

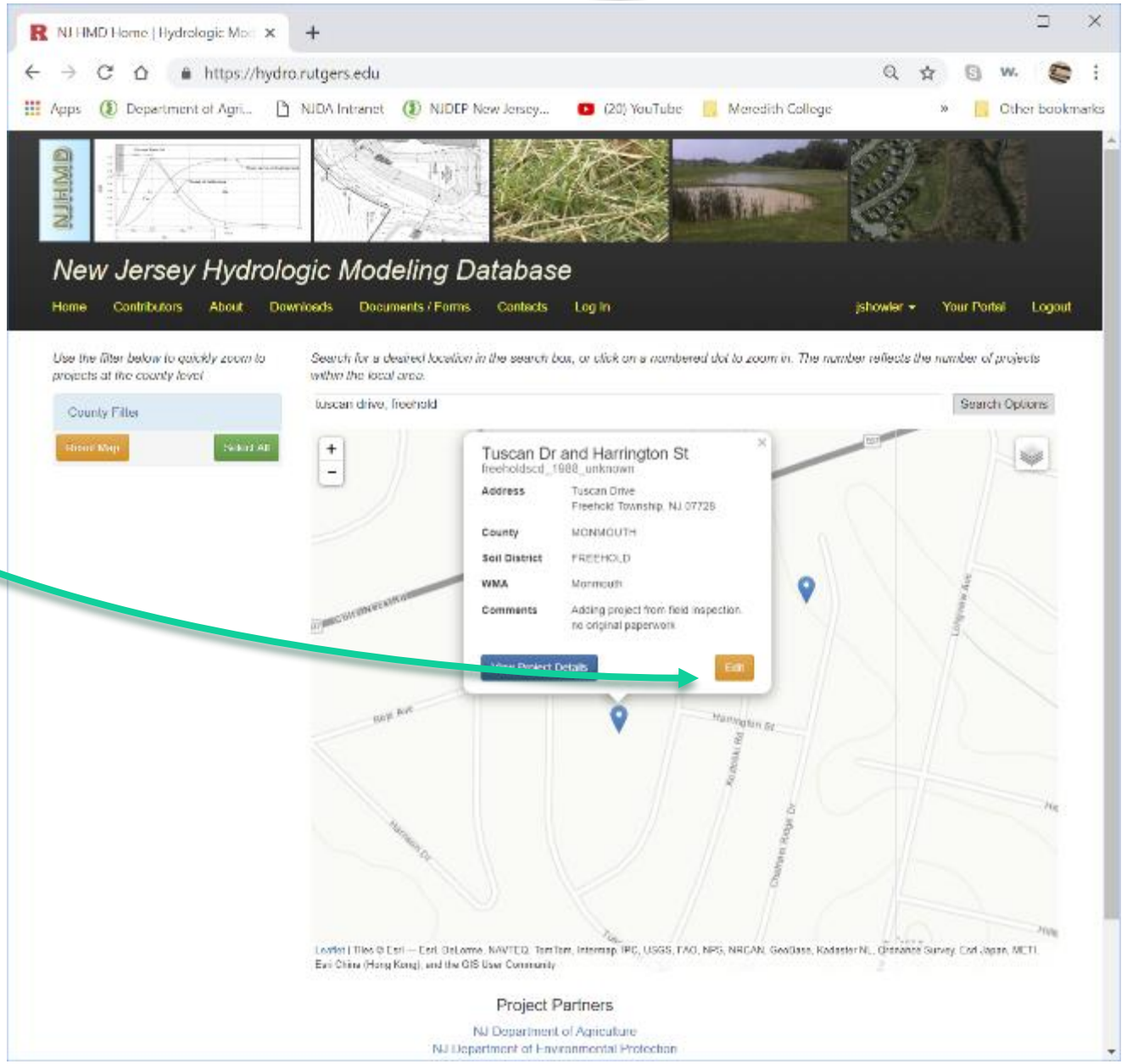
Basin maintenance inspection services are now offered by NJ Soil Conservation Districts -

IV. Basin Maintenance Inspection Services by NJ Soil Conservation Districts

In consultation with and support of NJDEP Municipal Separate Storm Sewer System (MS4) Permit requirements for inspection and maintenance of stormwater management infrastructure

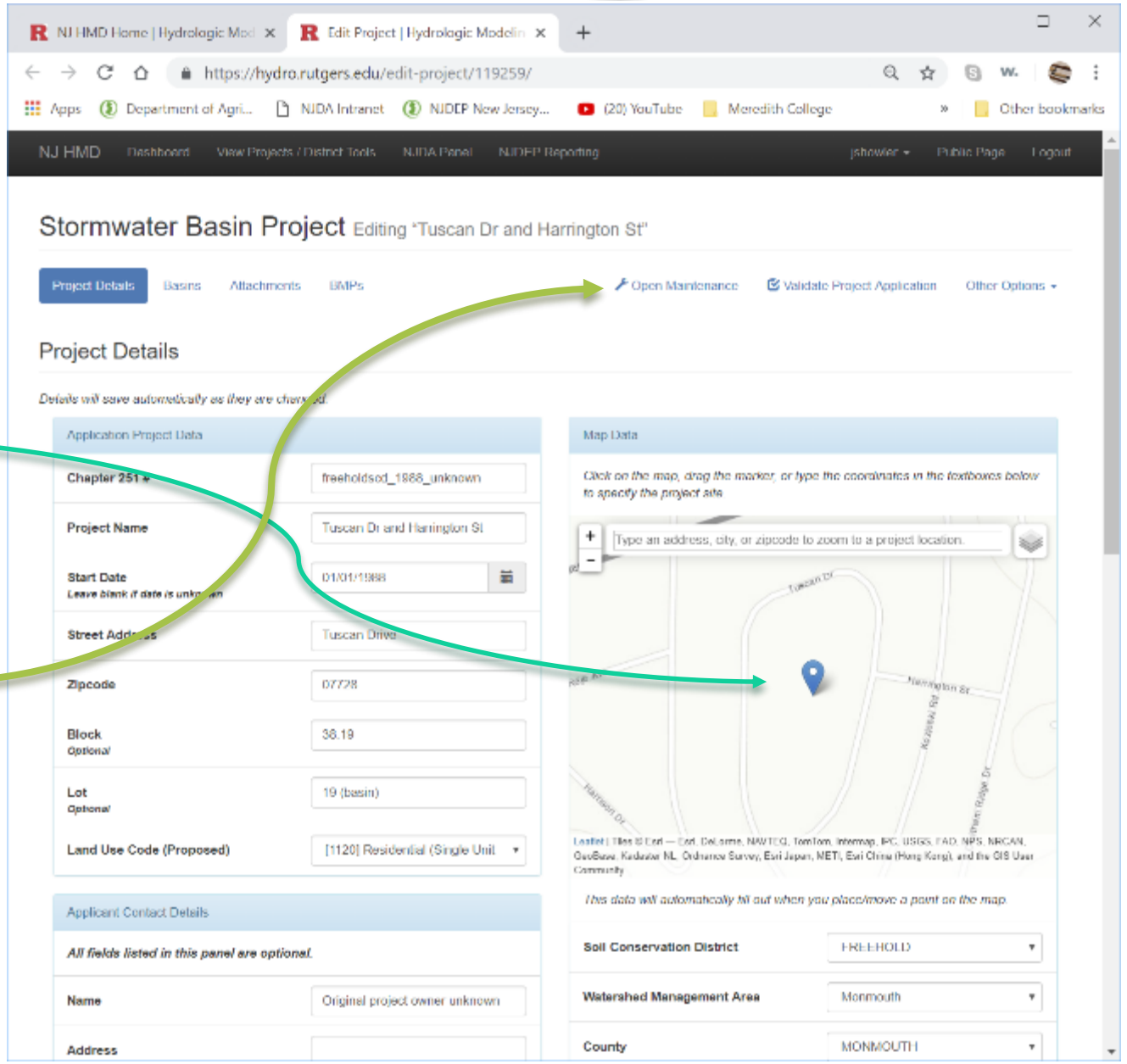
Basin Inspection Function

Locate project and select ‘edit’(admin only)



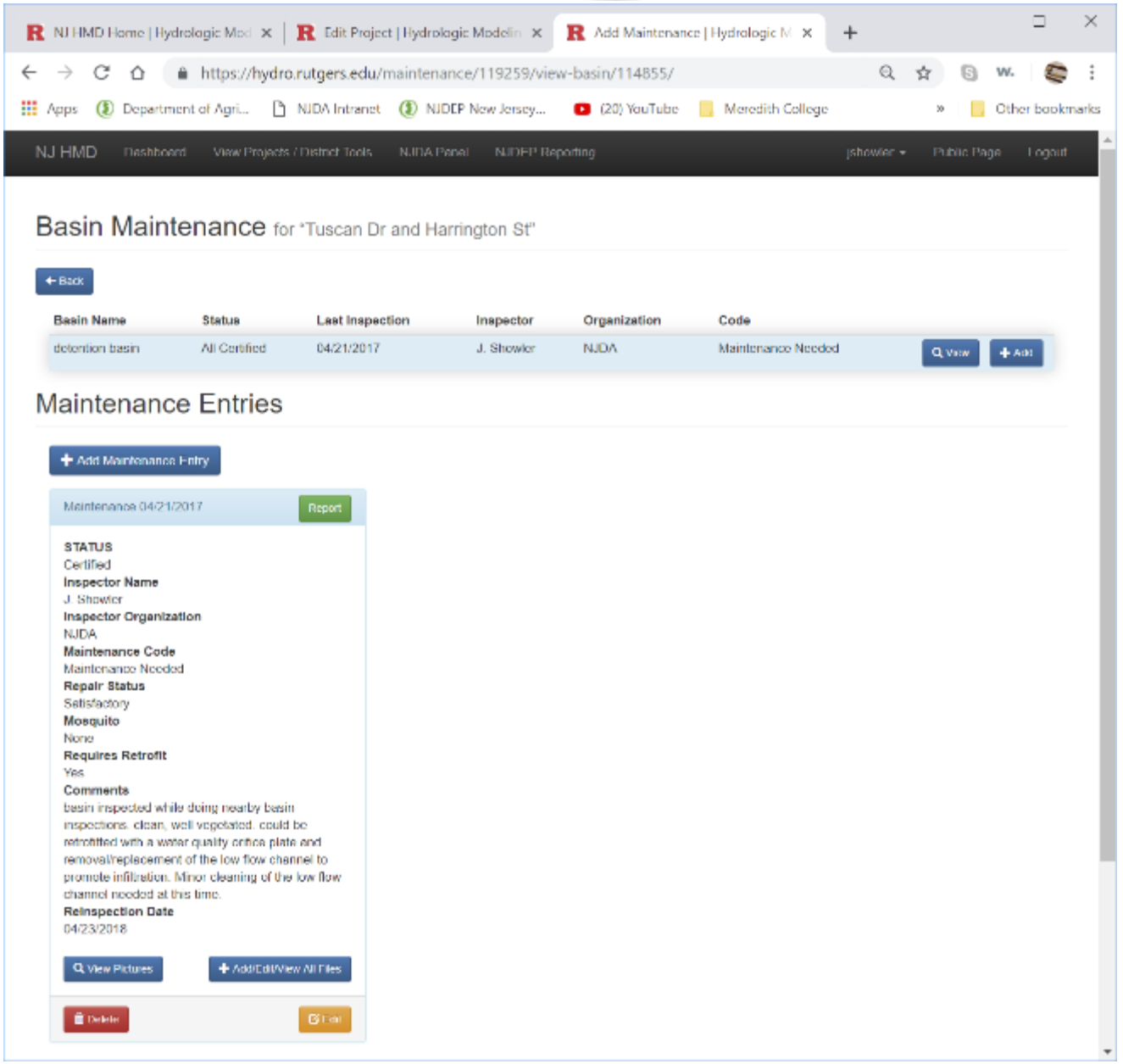
Edit mode allows the admin (SCD or NJDA only) to change, update or remove data as well as relocate positions of the site, basin and basin outfall.

Admins can also access the maintenance inspection window from the menu above



Maintenance Mode

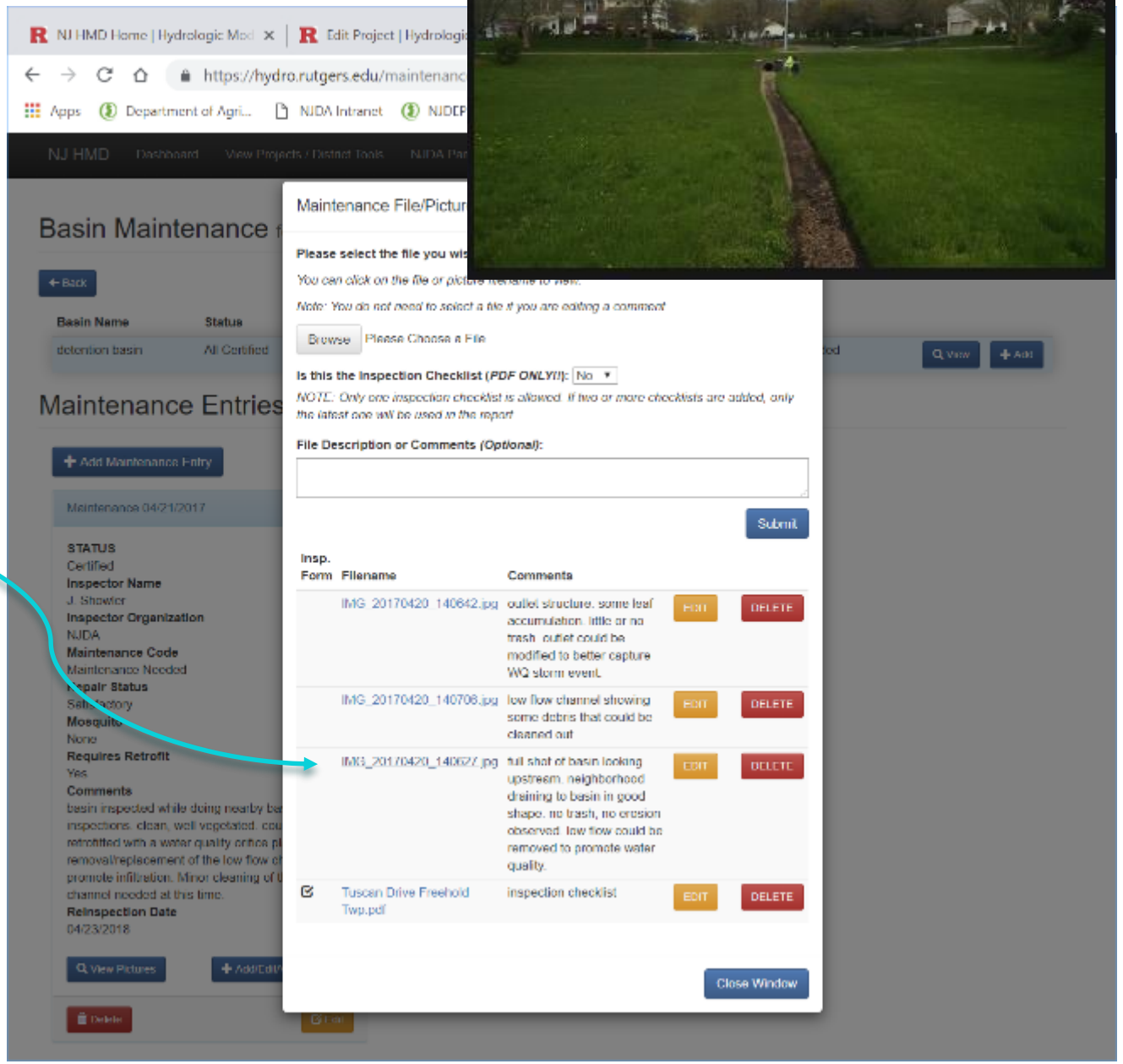
- View
- Edit
- Add
- * field data
- *comment/text
- *images
- *pdf forms/docs



Maintenance Mode

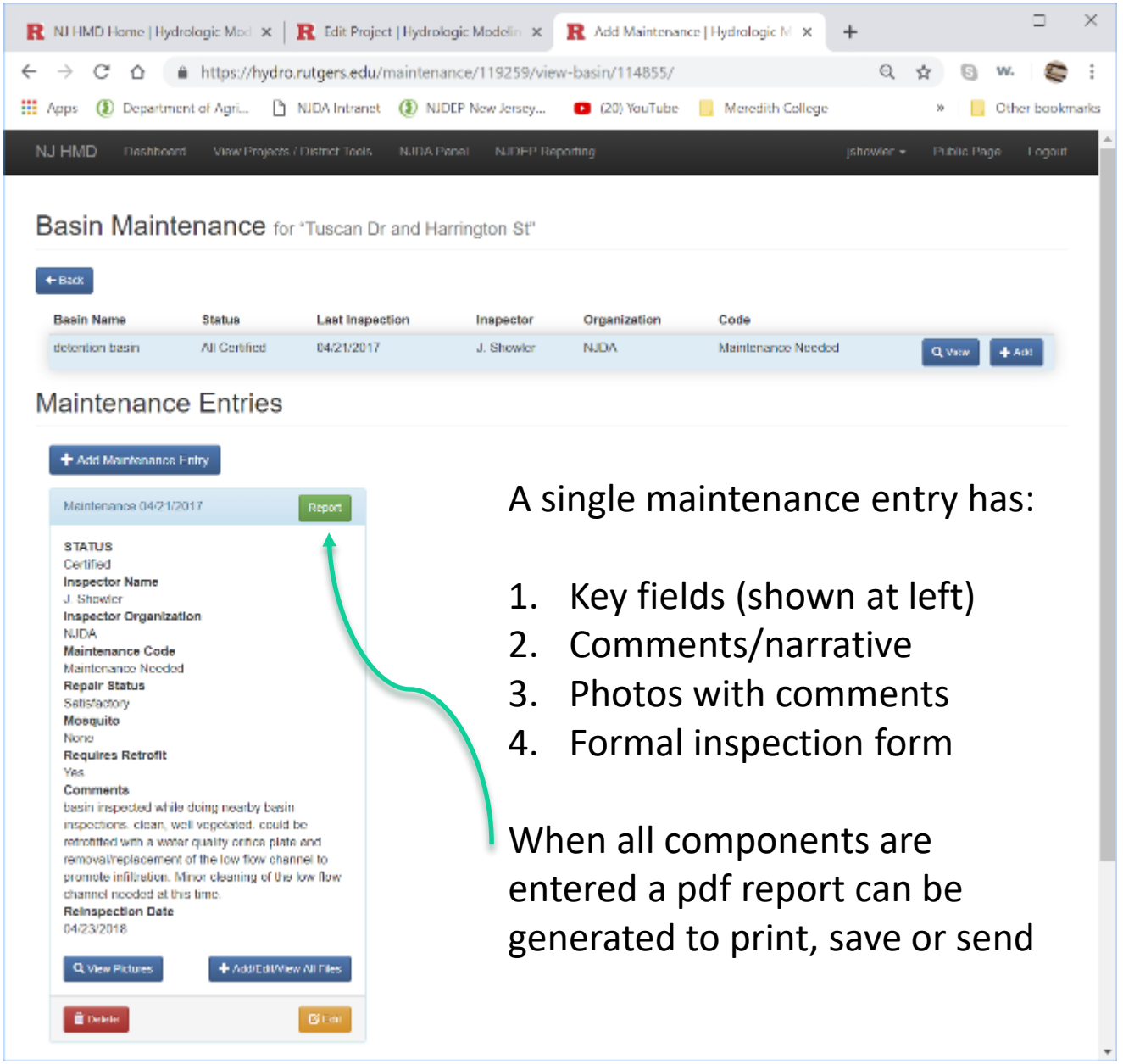
- View
- Edit
- Add
- * field data
- *comment/text
- *images
- *pdf forms/docs

Each image or file can have its own comment/text descriptors



Maintenance Mode

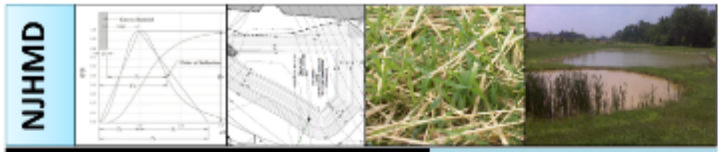
- View
- Edit
- Add
- * field data
- *comment/text
- *images
- *pdf forms/docs



A single maintenance entry has:

1. Key fields (shown at left)
2. Comments/narrative
3. Photos with comments
4. Formal inspection form

When all components are entered a pdf report can be generated to print, save or send



This report has been prepared by the FREEHOLD Soil Conservation District in accordance with requirements set forth in the New Jersey Department of Environmental Protection Municipal Separate Storm Sewer System (MS4) permitting requirements (N.J.A.C. 7:14A et seq.) for the inspection and maintenance of public and privately owned stormwater management facilities. This inspection report provides the necessary verification by a municipality that it is ensuring post-construction operation and maintenance of stormwater facilities under its authority.

The MS4 permit requires that an owner of a stormwater management facility (retention/detention/wet pond etc.) provide an annual inspection of the operating condition of the facility as well as ensure proper maintenance of the facility has taken place.

If maintenance or repair work is identified in this inspection report, the owner has the option of correcting the problems identified by the district and requesting a re-inspection by the district to verify that the outstanding issues have been corrected and that the facility is now in compliance with MS4 regulations for the current year.

Following the initial or secondary inspection, re-inspection of the facility will be scheduled for the following year.

Contact

FREEHOLD Soil Conservation District

4000 Kozloski Road, PO Box 5033

Phone: 732-683-8500

Notice: This report only identifies the condition of the facility. No offer of service to correct any deficiencies is made, expressed or implied. The report indicates the degree of compliance with respect to general maintenance practices and does not comment on nor constitute an analysis of any aspect of structural integrity of the facility. Only maintenance or repair issues which are detectible without the aid of specialized equipment are inspected and reported by the soil conservation district. Where appropriate, the district may suggest that further investigation of the facility be conducted by licensed professionals with experience in structural engineering be engaged for further study.

Stormwater Management Facility Inspection Report Ownership and Design Data

Project Development Information

Project Name: Tuscan Dr and Harrington St

District Application Number: freeholdscd_1988_unknown

Street Address if known: Tuscan Drive

County: MONMOUTH

Municipality: Freehold Township

Zipcode: 07728

Build Date if known: 1988-01-01

Project Location Coordinates: (State Plane Feet)

North: 522354.56086144 **East:** 562958.59447851

Developed Anderson Land Use Code:

1120: Residential (Single Unit, Medium Density)

Ownership Information (if known)

Owner: Twp. of Freehold (basin)

Address: 1 Municipal Plaza

City: Freehold

State: NJ

Zipcode: 07728

Email: http://twp.freehold.nj.us/contact-us

Phone: 732.294.2000

Stormwater Management Facility Information

Facility Database ID: 114855

Facility 'name': detention basin

Facility type: Detention

Construction: Excavated

Dam Classification: Not Applicable

Height of dam: 0

Width of dam at top: 0

Notes: adding basin from field inspection. no hxh data available. tax records show dev't built in 1988. basin located at block 38.19, lot 19

Facility Location Coordinates SPF:

North: 521800.66857908

East: 562693.72634826

Facility Discharge Location Coordinates:

Name: os1, **North:** 521766.68808121, **East:**562617.54738174

Maintenance Inspection Report

Facility Database ID: 114855

Date of Inspection: 04/21/2017

Inspector Name: J. Showler

Maintenance Status: Maintenance Needed

Inspector Organization: NJDA

Repair Status: Satisfactory

Retrofit: Yes

Mosquitos: None

Comments & Recommendations:

basin inspected while doing nearby basin inspections. clean, well vegetated. could be retrofitted with a water quality orifice plate and removal/replacement of the low flow channel to promote infiltration. Minor cleaning of the low flow channel needed at this time.

Interpretation of Inspection Status Codes and Comments:

Maintenance Needed: The facility was found to be below an acceptable level of maintenance. Examples of maintenance failure include: vegetation overgrown or barren, erosion present inside or outside of basin; basin appurtenance structures such as low flow channels, outlet control structures, trash racks and anti-scour (rip rap) protection damage, silted in or missing. Presence of accumulated trash, ponding water (unless designed as a wet pond) and/or visible presence of mosquitos.

In the case of an infiltration basin which is holding water, the basin floor may require the removal of the surface layer of silt and sediment, followed by deep tilling with lightweight equipment to restore infiltration capacity. It is recommended that a licensed professional engineer be retained to evaluate continued ponding which may be the result of structural failure, soil failure, high groundwater tables etc. Additional inspection information may be found on the attached inspection checklist form.

Repair Needed: The facility or certain aspects of the facility were found to be damaged or broken where physical repair is needed to restore functionality. Examples of repairs needed include broken or missing trash racks, damaged outlet control structures, damaged or collapsed pipes or culverts, eroded or otherwise missing rip rap erosion protection at pipe outlets, damaged or failing headwalls at discharge points, etc. In such cases it may be necessary to retain the services of a licensed engineer or contractor familiar with construction techniques to restore the facility to properly functioning conditions.

Mosquitos: Presence of standing water, aquatic vegetation with water or actual presence of mosquitos may be noted and will require immediate attention. Local and/or state mosquito control agencies should be contacted to ensure that no pathenogenic species of mosquitos are present and appropriate action is taken to eliminate current or future infestations.

Retrofit: Independent of other status determinations, a facility which is older may be a 'candidate' for retrofitting outlet controls, appurtenance structures etc. to improve the functionality for flood control, water quality control or other environmental benefits (such as infiltration) etc.

Retrofitting is not a requirement and is noted for information only.

Stormwater Facility Photographs

Facility ID: 114855 **Inspection date:** 04/21/2017

Photo ID: *114855-44*

outlet structure. some leaf accumulation. little or no trash. outlet could be modified to better capture WQ storm event.

Photo ID: *114855-45*

low flow channel showing some debris that could be cleaned out

New Jersey Department of Agriculture – Soil Erosion and Sediment Control Program
Stormwater Basin Inspection Program – Inspection Checklist

Date: 4/21/2017 Inspector: J. Showler Organization: NJDA Current Weather:sun/clouds, 60s Weather, past 72 hours:rain < 1" Basin Database ID:det basin Approximate basin Location: Tuscan Drive, Freehold NJ

Basin Type: ☒ Detention ☐ Infiltration ☐ Infiltration/Detention combo ☐ Wet Pond ☐ Subsurface ☐ Other

DEP Item #	Inspection Criteria	✓	Comments
Forebay	***Embankment failure, leakage, excessive deposits etc***	☐	
A1.1	Inlet scour or erosion	☐	
A1.2	Clogged pipes or excessive sediment	☐	
A1.3	Damaged outlet /overflow structure	☐	
MTD (pretreat) A2	***Inspect as able***	☐	
BMP (pretreat) A3	***Inspect as able***	☐	
Pond Area	***Note conditions for wet and dry ponds may differ***		
B1	Standing Water / algae / floatables / mosquitos present	☐	
B2	Sediment /deltas/emergent vegetation –function failure	☐	
B3	Erosion / Channelization/Rip Rap damaged	☐	
B4	Animal Burrows /wildlife/ waterfowl present	☐	
B5	Uneven Bed (dry basin)	☐	
B6	Sink holes or subsidence –dry or wet basin	☐	
B7	Low flow channel damaged or needs cleaning	☒	low flow channel has some sediment and organics not very bad but needs cleaning
B8	Basin liner or aerator damaged	☐	
Vegetation	***Note if vegetation is being maintained including desirable spp***		
C1	Excessive bare soil = erosion and water quality problem	☐	
C2	Overgrown /invasive / design vegetation present	☐	
C3	Tree growth in basin	☐	
C4	Are grass clippings collected or left?	☒	unknown but doubt they are collected
Embankment D1	***Basin side slopes – erosion, slides, seeps, bare soil etc***	☐	
Outlet	***Note outlet structure and discharge point(s)***		
L1	Outlet trash accumulation (20%+)	☒	actually clean but an accumulation of leaves in front of rack (chain link fence enclosure. see pics)
E2	Damaged Trash rack	☐	
L3	Outlet Orifi damaged or non-functioning/ retrofit?	☐	
F4	Outlet COP damaged or erosion below outlet	☐	
F5	Standing water in the outlet structure	☐	
Emergency Spillway	***Note condition of spillway and spillway lining***		
F1	Trees on spillway	☐	
F2	Damaged/failed/ obstructed /eroded spillway	☐	
Misc.	***Note condition of appurtenant structures etc.***		
G1	Broken or missing security fence/gate	☐	
G3	Damaged/missing sign	☐	
G4	Access to basin blocked (vegetation growth, trash etc)	☐	

Overall Condition: ☐ **Satisfactory** ☒ **Maintenance Required** ☐ **Needs Repair** ☒ **Possible Retrofit Candidate** **Comments:** minor cleaning needed; could be retrofitted for better water quality treatment.

Future Enhancements…

V. Recap & Questions-

- 1950s- SCD's were Ag-Only
- 1976- Still Ag, + Regulatory Non-Ag
- 1986 – Stormwater Data collection
- 2007- H&H Database online
  - https://hydro.Rutgers.edu
- 2019-
  - 16K basins uploaded
  - SCD Basin Inspections

Thanks for hanging in there!

Questions may be addressed to:
John Showler, P.E. NJDA john.showler@ag.nj.gov 609.775.8203

NJ HMD

Designed and Built by:
NJ Agriculture Experiment Station
Office of Research Analytics
Rutgers University
New Brunswick, NJ
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