

1 Proceedings

2 from here.

3 Thank you.

4 MR. PLOTCHYK: Thank you, Mr. Bosco.

5 This is Bob Dylan.

6 MR. DYLAN: I'd like to speak to the
7 issue of the impact that the Thruway
8 Authority has had in the past regarding
9 flooding and the future possibilities of
10 resolving some of those issues.

11 When the Thruway was originally
12 constructed, in the 1950's, in the area of
13 Nyack and West Nyack, a major stream which
14 used to be the primary source of municipal
15 water supply for the Village of Nyack was
16 diverted to the Hackensack River, which
17 contributed to the flooding of the West
18 Nyack area and further points south into
19 the New Jersey and so forth.

20 This is an opportunity for the
21 Thruway Authority to not only re divert
22 that stream, which is a stream that
23 originates in the Mountainview Avenue
24 area, back to the Hudson River, but it's
25 also an opportunity to alleviate a very

10

1 Proceedings

2 serious problem in the Village of Nyack,
3 where the Nyack Creek, which runs
4 substantially underground and people don't
5 appreciate it as a waterway because it's
6 underground, and there's a -- you know,
7 the people of Nyack know that this is a
8 very serious problem. This is an
9 opportunity for correcting mistakes of the
10 past in terms of re diverting waterways
11 that were diverted inappropriately back to
12 their original basin, and also use this
13 opportunity to correct some of the
14 problems which cause flooding in the
15 Village of Nyack today.

16 MR. PLOTCHYK: Okay. Thank you,
17 gentlemen. Thank you, both.

18 So next up we have Mr. Barton Lee.

19 And then Raymond Fein.

20 MR. LEE: Good evening. My name is
21 Barton Lee. I'm a resident of Allendale,
22 New Jersey. I am very interested in
23 signing up for the Stakeholders Advisory
24 Committee. So, by all means, just tell me
25 where to go after this presentation and

**TAPPAN ZEE BRIDGE/I-287
ENVIRONMENTAL REVIEW**

**Comments
Fall 2008 Public Information Meetings**

To:

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From:

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Interest Represented:
Founding Member
Rockland R.A.F.T. (Rockland Residents Against Flooding Tomorrow)

My interest in the Tappan Zee Bridge/I-287 Corridor Project relates to flooding.

General Comment:

Construction of the New York State Thruway in the 1950's contributed significantly to present day flooding in Rockland County, NY.

The Tappan Zee Bridge/I-287 Corridor Project presents opportunities to rectify past mistakes and mitigate flooding in general.

Specific Comments: (See Attached report)

The attached report details flooding in the Hackensack River watershed.

For comments and information most relevant to the Tappan Zee Bridge/I-287 Corridor Project see pages: 2,4,8,10,12,14, (25-37), 40,41.
Highlighted in Yellow

Please add my name to the Tappan Zee Bridge/I-287 Corridor Project Mailing List.

Flooding

By: Bob Dillon

email dillonfloods@verizon.net

Hackensack River Basin Flooding

In Rockland County, NY

Pages 2-13

History of Hackensack River Flooding West Nyack, NY

December 1958 - September 2008 (49yrs. 10mos.)

Pages 14-16

History of Hackensack River Flooding

River Vale, NJ

October 1941 - September 2008 (67yrs.)

Pages 17-19

Reservoirs in the Hackensack River Basin

Pages 20-22

Websites

Pages 23-26

The Lost Stream

Flooding of North Greenbush Road, Route 303, the Route 303 and Route 59 Interchange, Bobby Road, Route 59 and nearby residential and commercial properties, INDEPENDENT OF HACKENSACK RIVER FLOODING.

Pages 27-35

Jeffrey Court and Vicinity Flooding

Page 36

Critique of

Town of Clarkstown Hackensack River Improvement Project

Page 37-40

Additional Information (Research is Ongoing)

Page 41

10-30-08

Hackensack River Basin Flooding In Rockland County, NY

By: Bob Dillon

10-30-08 Edition

email dillonfloods@verizon.net

Development within the Hackensack River Watershed from Lake Lucille in New City, NY to Newark Bay, NJ is the reason for the chronic flooding along the river today.

Most people associate development with urban and suburban sprawl and the blame for flooding ends there.

While this kind of development is a major contributor to flooding, it is not the only cause and it may not be the most significant.

Infrastructure Development in the Nineteenth and Twentieth Centuries

The construction of roadways, railroads, weirs (a low or underwater dam) and dams along the Hackensack has had an enormous negative impact on the river and has greatly aggravated flooding. Development of this type has left a legacy of choke points that cause acute back flooding, and in the case of Lake Tappan has caused chronic back flooding as far upstream as the Nyack Water Company weir in West Nyack. (Back flooding – when an obstruction in the river causes the normal pool elevation upstream to be higher than the normal pool elevation downstream) (Normal pool elevation - the average elevation of the natural surface level of the river)¹

It is important to note that with the possible exception of the Village of Nyack Water Department's weir all of the development cited below was chartered by the New York State Legislature or approved by a New York State commission or department.

Map of Hackensack Watershed – Click on:

<http://maps.google.com/maps/ms?ie=UTF8&hl=en&msa=0&msid=117710290461738968800.00043b65a8fb426b57ff8&ll=41.102857,-73.966135&spn=0.006547,0.001212&t=h&om=1&source=embed>

¹ All elevations NGVD of 1929

Nineteenth Century

The Nyack Turnpike **1824-1826**

From 1824 through 1826, the section of the Nyack Turnpike running through the West Nyack swamp was filled in (Turnpike Tales by Lynn Nannariello). The adjacent wetlands area was then accessible for landfill and development. The elimination of wetlands has put more water into the river faster.

By today's standards the Turnpike's bridge over the Hackensack was at an elevation close to the normal pool elevation of the river and the distance between the bridge abutments was narrow, perhaps only 25 feet or so. This would be one of the earliest examples of a man made choke point causing back flooding.

New York State Route 59 now crosses the Hackensack River just to the south of the old Nyack Turnpike crossing. While the elevation of the current bridge appears to be adequate the channel width is not.

Erie Railroad **1841**

To cross the Hackensack in the vicinity of what is now known as 40 Foot Hole, the Erie Railroad constructed a high embankment and viaduct over the river. The viaduct was approximately 25 feet wide by 50 feet high and acted as a giant funnel. The embankment acted as an enormous dyke and still exists today. Just to the south the original Fifth Avenue Bridge abutments also remain as an obstruction to the river flow.

The Historical Society of Rockland County documents the most dramatic account of back flooding of the Hackensack in the book "Rockland County Century of History".

Berne Sickels recalls his family's account of the October 9, 1903 flood. His father and two uncles walked down the Erie Railroad tracks to the high viaduct over the Hackensack near Sickeltown Road. The water had risen to within three or four feet of the top of that steep embankment. The enormous force of the river rushing through the narrow opening gouged out a 75-foot deep hole on the other side. This later silted in and became the famous 40 Foot Hole known to generations of bathers.

Up river at the back flooded Nyack Turnpike, Edwin Smith was swept away from the Nyack Turnpike Bridge with his horse and wagon. Smith drowned. The horse swam to safety.

Rockland Central Railroad (West Shore Railroad - CSX) **1883**

The Rockland Central railroad crossed the Hackensack at two points in Rockland County. A high trestle approximately 60 feet across was used to transverse the river at Western

Highway. Upstream just north of the Nyack Turnpike a low trestle also approximately 60 feet across was used. It is believed that both trestles were constructed from 1883-1888.

The low trestle's supporting superstructure is only about 5 feet above the normal pool elevation of the Hackensack at this point. As the river rises the superstructure obstructs its flow and acts as a dam.

During the April 15-16, 2007 flood the Hackensack crested within 2 feet of the railroad ties. The pool elevation upstream of the trestle was considerably higher than the downstream side. Consequently, the Lake Lodico levee was topped over resulting in the flooding the Klein Avenue neighborhood and surrounding area.

This is the most constricted choke point north of Lake Tappan.

Twentieth Century

Nyack Water Department Weir **Early Twentieth Century**

Located just north of Route 59 the Village of Nyack Water Department Weir creates a pool for raw water intake; without it, the water treatment plant would be out of business. The Village of Nyack Water Dept. has been in existence well over 100 years. It is suspected that the weir was constructed to serve the slow sand filter plant that provided potable water to the service area of the Village of Nyack Water Department at the turn of the Twentieth Century.

This weir raises the river's pool elevation to approximately 55.8 feet above sea level and causes back flooding and siltation. The Village of Nyack Water Department should elect to obtain its water supply directly from Lake DeForest and this weir should be removed. (See July 23, 1952 Lake DeForest Decision
http://rocklandraft.com/database/Spring_Valley_1952_Decision.pdf page 14)

New York State Thruway **Open December 1955**

The Thruway crosses the Hackensack River just south of the confluence of the river and the Demarest Mill Stream at an elevation of approximately 69.2 feet above sea level. The Thruway bridge abutments are only 60 feet apart.

On April 15-16, 2007 the Hackensack River reached an elevation of approximately 71 feet above sea level in this area causing the flooding of the Jeffrey Court area of West Nyack and the closing of the Thruway for several hours.

Lake DeForest **Storage began in February 1956**

For every inch of rain that falls over Lake DeForest approximately one foot (1ft.) of water is accumulated in the lake during and for some time after a rainfall event.

Normally the bascule gates² (flood gates) allow the storage of five feet of additional water above the concrete spillway. When the pool of water on the lake reaches the top of the bascule gates the reservoir is at 100 percent of capacity. On April 14, 2007 Lake DeForest was already full and water was flowing over the bascule gates. For the previous three or four days the weather forecast called for eight to ten inches of rainfall to come. On April 15-16 over seven inches fell on Lake DeForest resulting in over seven feet of water being added to the pool of water on Lake DeForest.

The bascule gates can be locked in the upright position or automatically operated by an air operated hydraulic cylinder energized by a float mechanism and lowered (deflected) responding to the elevation of the water in the reservoir pool. Additionally, a hydraulically controlled system is provided in the control structures to lower or raise the bascule gates at will. (See Army Corps of Engineers 1978 inspection report for the Lake Deforest Dam http://rocklandraft.com/database/1978_Dam_Stu.pdf pages 1-11)

In the early hours of April 16, 2007 the bascule gates deflected fully causing a sudden release of five feet of stored water.

Five feet of stored water equals 26.5+ percent of the maximum storage capacity of Lake DeForest, approximately one and one-half billion gallons+ (1,502,550,000).³

The sudden release of this massive amount of stored water in addition to the seven plus feet of pooling water combined with the choke points down river caused the inundation of the West Nyack area.

In response to suggestions that United Water should have released water in anticipation of the 4/15- 4/16/07 Nor-Easter to avoid the subsequent flooding of the Hackensack River Basin and the accompanying damage to homes and businesses a United Water Vice President and General Manager instead replied, "It is our priority and duty to insure a continuous supply of water to the residents of Rockland County". (April 28, 2007 Journal News)

² The bascule gates are hinged to the concrete spillway in a manor similar to a drawbridge. The Lake DeForest gates are 5 feet high and are lowered to a deflected position to maintain a constant level on the lake or to lower the pool elevation of the lake as much as 5 feet. The gates can also be locked in an upright position.

³ On January 3, 2007 the author observed that the level of Lake Deforest was equal to the 80ft elevation at the bottom of the bascule gates. The same day The Journal News reported the percent capacity of Lake Deforest at 73.5% of its 5.67 billion gallon capacity.

