

Presented to an advisory committee of the DRBC on April 5, 2016. Contents should not be published or re-posted in whole or in part without the permission of the author(s) or the committee. Opinions herein do not necessarily reflect the opinions of the DRBC or the Commissioners. The accuracy of data, calculations and interpretations are the sole responsibility of the presenter.

## ECONOMIC BENEFITS OF RIVER PROTECTION & EFFECTIVE WATER MANAGEMENT



MATT BATSCHULET  
UPPER DELAWARE RIVER BUSINESS COALITION

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## UPPER DELAWARE RIVER BUSINESS COALITION

*“Working to Ensure The Economic Vitality of the Upper Delaware River”*

The U.D.R.B.C consists of both small and large businesses whose bottom line has a direct correlation to the Tourism Based Economy that revolves around the Upper Delaware River System.

- ✧ Over 60 Small Businesses
  - ✧ Gas Stations
  - ✧ Contractors
  - ✧ Real Estate Agents
  - ✧ Lumber Yards
  - ✧ Hotels
  - ✧ B&B
  - ✧ Restaurants
  - ✧ Boat & Canoe Rental Facilities
  - ✧ Automotive Service Station
  - ✧ Every Industry Benefits from Tourism

***EVERY BUSINESS IN OUR AREA  
DEPENDS ON REVENUE CREATED BY  
THE THOUSANDS OF TOURISTS WHOM  
VISIT THE UPPER DELAWARE RIVER  
ANNUALLY AND THOSE WHO CALL  
THIS THEIR SECOND HOME.***

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## ECONOMIC OVERVIEW



### ❖ DOWNWARD TREND FOR OVER 25 YEARS:

- ❖ Virtually every industry has left the area, creating a void of well needed jobs. Our residence are forced to move in order to find opportunities in other parts of the country, just to support their families.

### ❖ ABANDONED HOMES & BUSINESSES:

- ❖ Decreased tax base for municipalities and schools to provide essential services for our residents
- ❖ Decline in Sales Tax revenue for both state and county governments who desperately need increased revenue

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## MICROECONOMIC TOURISM INDUSTRY

### THE NYC RESERVOIR SYSTEM:

Inadvertently and unintentionally created an economic boom that draws thousands of tourist to the Upper Delaware River annually. This newly created industry allowed existing businesses to adapt, grow and create new job opportunities within our communities.

Simultaneously the reservoir system created an opportunity for new business ventures to open their doors as well as fueling an increase demand for 1<sup>st</sup> and 2<sup>nd</sup> home purchases in the river corridor.

All of these economic benefits are based around a naturally sustainable resource that comes with no additional cost to the state and county residents.

### 2014 ECONOMIC IMPACT STUDY:

#### **22 MILLION IN BUSINESS REVENUE ANNUALLY**

Drastically underestimated  
Realistically in the hundreds of millions

#### **3242 (37%) OF HOMES IN DELAWARE COUNTY**

bought due to the recreational opportunities created by the Upper Delaware River.  
360 MILLION DOLLARS of capital injected into our area.

Unfortunately no study exists that looks at the entire Upper Delaware System as a whole, which would include multiple counties spanning New York & Pennsylvania.

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## 2006 - 2014 STEADY GROWTH

MEDIAN WATER FLOWS AT STILESVILLE

	2006	2007	2008	2009	2010	2011	2012	2013	2014
JANUARY	1796.74	1238.97	1607.74	1495.81	1029.26	299.29	583.96	249.35	1103.48
FEBRUARY	1262.78	744.64	1945.55	483.46	637.54	333.57	499.97	408	553.04
MARCH	511.54	1512.67	2875.80	1111.32	1787.65	2472.65	195.84	440.45	428.77
APRIL	780.46	2490.33	1472.90	624.70	1119.93	2213.67	153.10	263.70	1340.83
MAY	567.25	240.42	208.90	351.77	310.19	2023.80	333.48	365.87	1097.74
JUNE	2931	380.20	300.40	1357.07	382.30	569.67	544.23	1308.03	457.73
JULY	1163.71	338.84	373.74	515.16	425.90	710.71	533.90	689.71	537.48
AUGUST	573.32	417.48	599.29	1422.94	791.39	579.71	378.13	508.90	597.71
SEPTEMBER	781.47	584.80	359.20	461.57	694.27	2850.67	418	474.33	900.96
OCTOBER	1146.03	426.38	538.61	425.73	170.84	951.80	151.71	540.06	582.16
NOVEMBER	1868.67	98.76	119.37	863.07	225.67	237.84	234.63	249.80	591.13
DECEMBER	975.58	726	715.90	757.81	988	1059	213.13	213.13	129.16
AVERAGE	1196.54	770.37	926.45	822.53	713.58	1191.86	353.34	475.94	693.32

**BUSINESS REVENUES INCREASED ON AVERAGE 7-18% ANNUALLY  
NEW BUSINESSES OPENED  
NUMBER OF TOURIST INCREASED YEARLY**

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## WHY WAS THE U.D.R.B.C FORMED

Spring Water Flows  
&  
The Incident at Cannonsville Reservoir

**COMBINED ECONOMIC RESULTS:**

**15-25% LOSS IN REPORTED BUSINESS REVENUES**

**ABANDONED CAPITAL IMPROVEMENT PROJECTS**

**EMPLOYMENT CUTS & HIRING FREEZES**

**LAST BUT NOT LEAST, A VERY SKEPTICAL TOURISM BASE WHO WILL  
NOW LOOK TO TRAVEL SOMEWHERE ELSE TO SPEND THEIR HARD EARNED  
MONEY**

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## 2015 WATER FLOWS:

	AVERAGE MONTHLY FLOW 15' (CFS)	CANNONSVILE CAPACITY %	CPN CAPACITY %
JANUARY	130.48	63.18	70.18
FEBRUARY	102	59.37	66.52
MARCH	96.29	60.54	65.04
APRIL	107.13	97.26	94.03
MAY	176.13	95.83	96.13
JUNE	343.13	96.32	97.06
JULY	1498.32	101	100.1
AUGUST	605.48	69.82	81.82
SEPTEMBER	753.17	60.06	72.04
OCTOBER	673.17	50.07	64.76
NOVEMBER	147.83	60.28	68.7
DECEMBER	143.23	69.95	74.15

- ✧ Virtually no water releases available from January through June based on a long term prediction for drought.
- ✧ Reservoir System Capacity:
  - ✧ April 94%
  - ✧ May 96%
  - ✧ June 97%
    - ✧ No Additional Release
    - ✧ Drought Still Forecasted
    - ✧ Businesses & Communities Suffer
- ✧ July 100.01%

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## WHY WAS THE U.D.R.B.C FORMED


### WATER FLOWS

- ✧ The businesses operating below the reservoir system, both seasonal and full time, earn a majority of their yearly revenue during the months of April, May & June.
  - ✧ These three months can account for as much as 50% of of yearly revenue
  - ✧ When ample water releases are not given during this timeframe, it is catastrophic to our economy, as we unfortunately learned first hand in 2015.
  - ✧ Extremely low river flows and lack of releases crippled area businesses & devastated the local economy due to a severe cut in Tourism Revenue.
- ✧ Multiple Requests for Additional Water Releases were denied based on the predictions of a long term drought. The protection of NY City's water supply trumps all other considerations and needs, regardless of much they are needed.
- ✧ How the "Black Box Equations" calculates these hypothetical droughts remains a mystery to the public, and clearly should not be used as a deciding factor while predicting water released:
- ✧ Over 7 Inches of rain fall in June 2015
- ✧ Cannonsville Reservoir reaches 100% Capacity and begins to spill July 1<sup>st</sup>

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Emily Lloyd  
Commissioner

**FOR IMMEDIATE RELEASE: July 15, 2015**  
CONTACT: [depresso@dep.nyc.gov](mailto:depresso@dep.nyc.gov), (718) 595-6600  
No. XX

**DEPARTMENT OF ENVIRONMENTAL PROTECTION INCREASES RELEASES AT CANNONVILLE RESERVOIR TO FACILITATE NECESSARY REPAIRS**

The New York City Department of Environmental Protection (DEP) today increased drinking water diversions and downstream releases from Cannonville Reservoir to facilitate necessary repairs in response to an ongoing turbid discharge from a rock embankment below Cannonville Dam.

DEP, its regulators, and consulting experts do not believe the turbid flow represents any imminent threat to the safety of the dam. While repairs are made, DEP believes it is prudent to draw down the reservoir through increased releases out of an abundance of caution; reducing storage does not pose a risk to the city's water supply.

The turbid flow below the dam was discovered when workers were drilling borings in preparation for design and construction of the future hydroelectric facility to be built there. During the drilling, workers noticed a flow of turbid water coming from a rock embankment near the release chamber. They immediately contacted DEP engineers and ceased all work.

A preliminary investigation indicated that the drilling released ground water under natural pressure several feet below surface level, causing an upward flow of water and sediment that is reaching the West Branch Delaware River.

Since then, DEP has met with its regulators, consulting engineers, and other experts to further investigate the condition, and to identify next steps for monitoring and repair. In addition to reducing storage at Cannonville Reservoir, DEP is taking several steps to minimize any potential risks. These include 24-hour monitoring by employees at the site, regular analysis of dam-safety instrumentation, and testing of the turbid sediment to identify and understand its origin.

DEP is also working with the Federal Energy Regulatory Commission and the New York State Department of Environmental Conservation on the design and implementation of repairs to stop the flow of water and sediment below Cannonville Dam.

Federal, state, county and local officials – including officials from New Jersey and Pennsylvania – have been made aware of the condition at Cannonville Dam. These officials will be updated as DEP continues to examine and address the flow condition. DEP also plans to host a series of public meetings to further inform downstream residents in the days and weeks ahead. Details on those meetings will follow soon.

[www.nyc.gov/dep](http://www.nyc.gov/dep)

***Quoted Statement:***

“While repairs are made, DEP believes it is prudent to draw down the reservoir through increased releases out of an abundance of caution; reducing storage does not pose a risk to the city's water supply”

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## 2015 “WASTED WATER”:

JULY 2015 STILESVILLE USGS	DAILY FLOW CFS	LESS 550 CFS (THEORETICAL)	JULY 2015 STILESVILLE USGS	DAILY FLOW CFS	LESS 550 CFS (THEORETICAL)
1	863	313	15	1440	890
2	2060	1510	16	1550	1000
3	2720	2170	17	1550	1000
4	2540	1990	18	1550	1000
5	2180	1630	19	1550	1000
6	1850	1300	20	1550	1000
7	1630	1080	21	1550	1000
8	1440	890	22	1550	1000
9	1140	590	23	1550	1000
10	882	332	24	1550	1000
11	720	170	25	1550	1000
12	713	163	26	1550	1000
13	712	162	27	1550	1000
14	718	168	28	1550	1000
			29	1440	890
			30	1550	1000
			31	1550	1000
			8-1, 8-2, 8-3	3254	1604
		12,468 CFS			19,424 CFS
		8.06 BILLION GALLONS			12.56 BILLION GALLONS

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## 2015 "WASTED WATER":

JULY & EARLY AUGUST 2015 CANNONVILLE RESERVOIR "WASTED WATER"	
JULY 1ST-14TH RELEASE/SPILL ABOVE 500CFS	8.06 BILLION GALLONS
JULY 15 - AUGUST 3 RELEASE	12.57 BILLION GALLONS
	20.63 BILLION GALLONS RELEASED OR SPILLED

2014-2015 COMPARISON CANNONVILLE DIVERSION TO NYC	
2014 JULY 15 - AUGUST 3	948 MILLION GALLONS
2015 JULY 15 - AUGUST 3	8.888 BILLIONS GALLONS
2015 EXCESS DIVERSION	7.940 BILLIONS GALLONS

### WHAT WOULD 28.57 BILLION GALLONS OF CONSISTENT RELEASE MEAN TO OUR ECONOMY ?

300 CFS	464.1 MILLION GALLONS
28.539 BILLION GALLONS EQUALS	44.32 DAYS OF 300 CFS FLOW

**MORE THAN ENOUGH WATER TO PREVENT THE ECONOMIC LOSS WE SUFFERED IN 2015 CAUSED BY A LONG TERM FORECAST AND "SECRET" EQUATION THAT DETERMINES OUR FLOW PLAN. THIS MODEL IS CLEARLY NOT ACCURATE AND SHOULD NOT DETERMINE OUR FUTURE.**

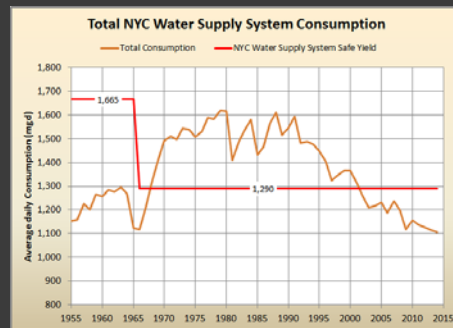
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### WATER DIVERSION USAGE COMPARED TO SAFE YIELD

NYC SAFE YIELD	1,290 BILLION GALLONS PER DAY
ACTUAL CONSUMPTION AVERAGE 2015	1.1 BILLION GALLONS
SURPLUS WATER	190 MILLION GALLONS PER DAY
	293.93 EXCESS CFS AVAILABLE DAILY
AVERAGE USAGE DIVERSION 3/27/16	950 MILLION GALLONS PER DAY
ACTUAL EXCESS 3/27/17	340 MILLION GALLONS PER DAY
	525.98 EXCESS CFS AVAILABLE DAILY

**IF 25% OF THIS EXCESS WAS MADE AVAILABLE: RELEASE WOULD EQUAL 131.50 CFS PER DAY**



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## **WHO BENEFITS FROM A PROPERLY MANAGED RIVER SYSTEM**

### **STATE & COUNTY GOVERNMENTS:**

Millions in additional funding through land, sales & occupancy taxes

### **EDUCATION PROGRAMS & SCHOOL SYSTEMS:**

Huge increase in tax base & funding through new home sales tax revenues. Schools can upgrade equipment & hire new staff without any additional expense to already depleted grants offered by state and federal governments.

### **NEW YORK STATE DEC:**

License sales have a direct correlation to water flows. A consistent and fair release plan would draw more tourists year after year. This increase in revenues could help fund additional staffing and new conservation projects without any cost to state budgets

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## **WHO BENEFITS FROM A PROPERLY MANAGED RIVER SYSTEM**

### **RESIDENTS:**

Every person sitting at this table, representing the states of New York, Pennsylvania, New Jersey, & Delaware, has thousands of its citizens who come to the Upper Delaware River as tourists to enjoy the outdoor recreational opportunities.

NYC Residents represent the highest percentage of tourists that come to the area

### **LOCAL BUSINESSES:**

Opportunities for expansion & growth as long as a flow plan is put into affect that takes into consideration how important the river system is below the reservoirs.

### **EVERYONE WINS:**

With a revised and well thought out flow management plan that incorporates not only scientific data as well as "common sense" practices, we can achieve a balance of water flows that not only provides the water needed to satisfy the decree parties, but one that can allow the downstream economy to flourish. This is possible without comprising any water needs from NYC.

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## HOW CAN THIS BE DONE?

### ITS TIME TO FACE THE FACTS:

NYC WATER CONSUMPTION IS DRASTICALLY OVER ESTIMATED

PROJECTED IN-COMING WATER TO THE SYSTEM IS UNDERESTIMATED

### CROTON SYSTEM:

ADDITIONAL 92+ BILLION GALLONS OF ADDITIONAL WATER SUPPLY

INACCURACY OF LONG TERM PRECIPITATION & WEATHER FORECASTING

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## LOOKING INTO THE FUTURE:



THE ECONOMIC FUTURE OF THE COMMUNITIES AND BUSINESSES LOCATED BELOW YOUR RESERVOIRS ARE DIRECTLY CORRELATED TO THE WATER MANAGEMENT POLICIES AND RELEASE MODELS DETERMINED BY THIS PANEL.

### **APRIL 2016:**

LOCAL ECONOMY PREPARING FOR FIRST ROUND OF CRUCIAL TOURISM REVENUE

CANNONSVILLE CAPACITY: 91.4 %  
OVERALL CAPACITY: 93 %

**109 CFS**  
**REPEAT OF 2015?**

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## IN CLOSING:

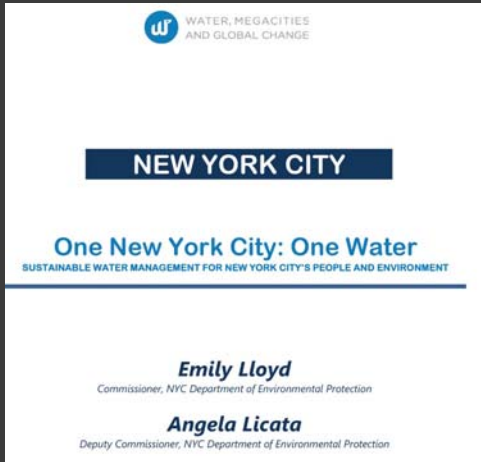
### WE ARE ASKING YOU TO:

**IMPLEMENT A MINIMUM DAILY RELEASE OF 300 CFS FOR APRIL, MAY & JUNE, FOR THE MOST PART THE WATER EXISTS AND THE BENEFITS FAR OUTWEIGH THE RISK**

**IN ADDITION, WE ASK THAT YOU WORK WITH FUDR TO IMPLEMENT A REVISED RELEASE PLAN THAT IS RELEVANT, TRANSPARENT AND CUTTING EDGE. A FLOW PLAN THAT WILL PAVE THE GROUND FOR GROWTH AND PROSPERITY IN ARE AREA.**

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ONE NEW YORK CITY: ONE WATER  
(Page 13 & 14)

In 2015, the New York City Panel on Climate Change (NPCC), released updated projections for the region in its publication *Building the Knowledge Base for Climate Resiliency*. Among them, the city can expect to see, by the 2050s, **increased average temperatures (4.1 to 5.7° F, or 2.3 to 3.2° C), increased average precipitation (4 to 11 percent)**, and rising sea levels (11 to 21 inches, or 28 to 53 cm). The average number of days per year above 90° F (32° C) is expected to at least double. Due to sea level rise alone, coastal flood events will increase in both frequency and intensity. The frequency and number of intense hurricanes across the North Atlantic Basin is also expected to increase. **Each of these changes will increase the risk of the city's residents, neighborhoods, businesses, and infrastructure to potential adverse public health, environmental and financial impacts.**

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