



# Updated Study Report Meeting

September 29, 2016



**NY Power  
Authority**

# Agenda

9:00 Introduction; Purpose of the Meeting

9:15 Recreation Use/User Contact Study

10:00 *Break*

10:15 Socioeconomics Study

11:45 Wrap-up

12:00 *Adjourn*

# Purpose of Meeting

- On September 6, 2016, FERC approved amending the filing date of the reports for the Socioeconomics Study and the Recreation Use/User Contact Survey.
- To present results of these two studies, and
- To answer questions that will assist licensing participants in developing any written proposed study plan modifications.

# Relicensing Process – Next Steps

October 15, 2016	Power Authority will file meeting summary
November 14, 2016	Public may file with FERC written proposed study plan modifications and/or disagreements with the Power Authority's meeting summary
December 14, 2016	Power Authority will respond to written study plan modifications and disagreements
January 13, 2017	FERC will issue study plan determination and amend approved study plans, as appropriate
February 18, 2017	Updated Study Report due date for Flooding Study

# Requirements for Proposed Study Plan Modifications (18 C.F.R. 5.15(f))

- Any proposal to modify the FERC-approved Study Plan must contain the following elements:
  - A showing of good cause why the proposal should be approved; and
  - A demonstration that:
    - The Power Authority did not conduct the approved study as provided in the FERC-approved study plan; or
    - The Power Authority conducted the study under anomalous environmental conditions

# Requirements for Proposed New Studies (18 C.F.R. 5.15(e), (f))

- Any proposal for new information gathering or studies must contain the following elements:
  - A showing of “extraordinary circumstances warranting approval”; and
  - A statement explaining:
    - Any material changes in the law or regulations applicable to the information request;
    - Why the goals and objectives of any approved study could not be met with the approved study methodology;
    - Why the request was not made earlier;
    - Significant changes in the project proposal or that significant new information material to the study objectives has become available; and
    - Why the new study request satisfies the study criteria in 18 C.F.R. 5.9(b)

# Recreation Use/User Contact Study and Assessment of Effects the Project has on Recreation Use

## Study Objectives

- Determine amounts and types of recreational use at the Project
- Survey recreationists at the Project to determine their opinions regarding their recreational use of B-G Project sites and facilities
- Evaluate recreational demand and whether the sites are meeting current demand
- Evaluate whether Project operation and maintenance affects recreational use and usability of the recreation sites and facilities, including effects of debris accumulation on recreational access

## Study Area:

### Lower Reservoir

#### Lansing Manor Complex:

Visitors Center, Lansing Manor House Museum, picnic area, trails, overlook, interpretive displays

#### Mine Kill State Park:

Overlooks, ballfields, basketball court, boat launch, swimming pool, playgrounds, picnic areas, disc golf, trails, interpretive displays, winter recreation

#### Mine Kill Falls Overlook

Picnic area, trails, overlook



### Upper Reservoir

#### Upper Reservoir Access Area

North: Angler access

South: Angler access

Boat Launch: Boat launch

### Lower Reservoir Tailrace

#### Schoharie Creek Fishing

Access: Angler access

## Methodology – Fieldwork

- Spot Counts
  - One weekday and one weekend day per month at varying times
  - **24 days of spot counts** conducted at each site
- Calibration Counts
  - One weekday and one weekend day per month
  - Additional count on the holiday weekends and peak summer season
  - **35 days of calibration counts** conducted at each site
- Traffic Counts
  - Installed May 22, 2015 at Upper Reservoir Access Area – Boat Launch, Schoharie Creek Fishing Access and Lansing Manor House Complex
  - Removed October 30, 2015
  - Utilized NYSOPRHP counters at Mine Kill State Park and Mine Kill Falls Overlook
- User Contact Surveys
  - Administered to one person per party
  - **160 surveys were completed**

## Methodology - Statistical Analysis

- Recreation Site Use
  - Calculated from attendance logs at the Visitors Complex and Mine Kill State Park
  - Calculated from spot counts, calibrations, and traffic counters at other sites
- Recreation Activity Types
  - Estimates developed from direct observations during spot and calibration counts, with additional information from attendance logs at interpretative centers and the pool.
  - Use at Lansing Manor House and Visitors Center were attributed to interpretive center activities
- Recreation Site Capacity
  - Utilized parking capacity and average summer weekend utilization
- Recreation User Survey
  - Calculations such as percentages of various activities were calculated
  - Percentages were calculated to present responses for questions asking for a rating

# Results



## Recreation Use



## Overall Recreation Use

- Majority of use occurred in summer
- Mine Kill State Park had the greatest amount of annual recreation use
- Visitors Center had the 2<sup>nd</sup> amount of greatest use
- Upper Reservoir sites were lightly used

Use at the B-G Project Recreation Sites;  
Annual and Seasonal Use for March 2015 through February 2016

Recreation Site	Annual Use	Winter Use		Spring Use		Summer Use		Fall Use	
		Users	Percent	Users	Percent	Users	Percent	Users	Percent
Mine Kill State Park	73,125	6,394	9%	5,575	8%	47,879	65%	13,277	18%
Visitors Center	28,331	4,637	16%	2,438	9%	10,510	37%	10,746	38%
Mine Kill Falls Overlook	14,487	330	2%	729	5%	10,035	69%	3,393	23%
Lansing Manor House	3,619	-	0%	394	11%	1,857	51%	1,368	38%
Schoharie Creek Fishing Access	2,685	112	4%	262	10%	1,424	53%	887	33%
Upper Reservoir Access—North	836	42	5%	91	11%	594	71%	109	13%
Upper Reservoir Access—Boat Launch	713	-	0%	98	14%	515	72%	100	14%
Upper Reservoir Access—South	693	22	3%	109	16%	501	72%	61	9%
<b>Total</b>	<b>124,489</b>	<b>11,537</b>	<b>9%</b>	<b>9,696</b>	<b>8%</b>	<b>73,315</b>	<b>59%</b>	<b>29,941</b>	<b>24%</b>

Percentages shown may not sum to 100% due to rounding.

Recreation Use by Activity Type based on Spot Counts, Calibration Counts, and  
Use Records, March 2015 through February 2016

Recreation Activity	Use (Recreation Days)	Percent (%) of Recreation Use
Interpretative Center	31,950	26%
Walk/Hike/Running	22,409	18%
Picnic	12,842	10%
Sightseeing	10,914	9%
Pool Swimming	10,649	9%
Disc Golf	10,576	8%
Playground	5,256	4%
Soccer Camp	3,090	2%
Fishing	2,526	2%
Photography	1,441	1%
Ride Bikes	751	1%
Motor Boat	667	1%
Non Motor Boat	388	0%
Cross country Skiing	291	0%
Hunt*	77	0%
Snowmobile	-	0%
Other Use**	10,662	9%
<b>Total</b>	<b>124,489</b>	

\*A total of 89 hunting permits were issued. Hunters with permits are assigned specific areas of the B-G Project and were typically not observed hunting or parking in the recreation sites included in the spot or calibration counts. Based on observations, an estimated 27 hunters utilized parking spaces at the Upper Reservoir recreation sites. The remaining 62 are estimated to have used other locations for parking.

\*\*Other Use includes special events, meetings, geocaching, and general relaxation. Other Use also includes use that was unidentified, which may include both recreation-related and non-recreation use.

## Recreation Use by Activity

- Most popular recreation activity was visiting an interpretive center (26%)
- Walking/hiking/running accounted for 18% of use followed by picnicking with 10%
- Sightseeing, pool swimming, disc golf, playground, soccer camp, fishing, photography, bike riding, and motor boating also occur within the B-G Project boundary

Average Summer Weekend and Peak Use by Site

## Recreation Use by Site

- All sites were found to have utilization below the parking design capacity.

Recreation Site	Available Spaces	Average Summer Weekend		Peak Use Observed	
		Spaces in Use*	Percent Capacity	Spaces in Use	Percent Capacity
Mine Kill State Park	406	46	11%	166	41%
Lansing Manor House and Visitors Center	45	5	11%	13	29%
Mine Kill Falls Overlook	23	4	17%	18	78%
Schoharie Creek Fishing Access	8	1	13%	2	25%
Upper Reservoir Access—North	3	1	33%	1	33%
Upper Reservoir Access—Boat Launch	2	1	50%	2	100%
Upper Reservoir Access—South	6	1	17%	1	17%

\*The average number of spaces in use was rounded up to the nearest whole number.

## Future Recreation Use

Based on average use during summer weekends, all recreation sites have the capacity to meet projected increases in use through 2060

### Projected 2060 Average Summer Weekend Use by Site

Site	Percent Growth, 2015 to 2060	Available Spaces	2060 Projected Spaces in Use, Summer Weekend	2060 Projected Average Percent Capacity
Mine Kill State Park	25%	406	58	14%
Lansing Manor House and Visitors Center	27%	45	6	14%
Mine Kill Falls Overlook	26%	23	5	22%
Schoharie Creek Fishing Access	19%	8	1	15%
Upper Reservoir Access—North	21%	3	1	41%
Upper Reservoir Access—Boat Launch	22%	2	1	60%
Upper Reservoir Access—South	22%	6	1	20%
<b>Total</b>	26%	<b>493</b>		

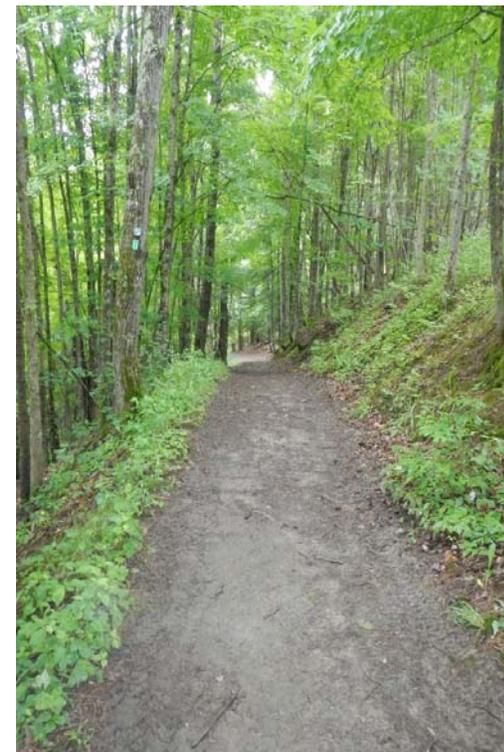
# Results

## Recreation User Survey



## Informational Questions

- Average group size was 3.6 people
- Average number of vehicles per party was 1.4
- 63% of respondents had been to the B-G Project previously
- Average number of visits per year were 12.4
- Median distance traveled to the B-G Project was 32 miles
- Average length of stay 1.6 hours
- 70% of respondents were not aware of changing water levels
- Most frequently mentioned primary activities at the time of the survey
  - ✓ Hiking
  - ✓ Sightseeing
  - ✓ Walking



## Yes/No Opinion Questions

Opinion Question	Number of Responses*	Response Summary
Would you return to this recreation site over the course of the next year?	153	Yes = 95% No = 5%
Does the recreation site/facility serve your interests?	55	Yes = 100% No = 0%

\*Not all those surveyed answered each question.

- 95% of respondents would return to the site over the course of the next year
- 100 % of respondents said the site/facility served their interests

## Opinion Questions asking for ratings

- Availability of parking and site condition were rated very highly by respondents.
- The majority of respondents rated the variety of facilities/ amenities and available access to project waters positively.

### Recreational User Ratings of Recreation Sites, Facilities and Amenities, Reported as Percent of Respondents

Site/Facility/Amenity	Number of Responses	5 Excellent	4	3 Fair	2	1 Poor
Availability of parking	157	79%	12%	8%	1%	0%
Site condition	157	89%	9%	3%	0%	0%
Variety of facilities/amenities	130	61%	27%	7%	2%	3%
Available access to Project waters	77	43%	40%	13%	4%	0%

\*Percentages shown may not sum to 100% due to rounding.

## Opinion Questions asking for ratings

### Summary of Responses to: “Please explain any low ratings”

Response	Number of Responses	Location(s)
Lack of amenities/facilities	3	Upper Reservoir Access—North (2); Upper Reservoir Access—Boat Launch (1)
Tight Parking	2	Lansing Manor House/Visitors Center
Bathroom needed	1	Mine Kill Falls Overlook
Locked gates	1	Upper Reservoir Access—North
Regulations for boating and ease of use	1	Lansing Manor House/Visitors Center
No turn around space	1	Upper Reservoir Access—South
<b>Total</b>	<b>9</b>	

## Opinion Questions asking for ratings

- Recreationists perceived the amount of use at B-G Project recreation sites to be Not Crowded (69%), Not Crowded to Somewhat Crowded (14%) or Somewhat Crowded (10%).
- All but one of the 150 respondents were Extremely Satisfied, Moderately Satisfied, or Satisfied with the number of recreation facilities.
- All respondents were either Extremely Satisfied, Moderately Satisfied or Satisfied with water levels during their visit.

## Open-ended Questions

- Most frequent responses were scenery/beauty, weather, family and friends, and educational experiences

### Summary of Open-ended Responses to the Survey Question: “What did you like most about your recreational experience today?”

Response	Number of Comments
Scenery/beauty	44
Weather	35
Family and friends	19
Educational experiences	16
Being outdoors/exercise	6
Not crowded/quiet	6
Fishing	4
Location	4
Disc golf	3
People/helpful personnel	3
Access trails marked well	1
Affordable aka free!	1
Building a bridge	1
Diving Board	1
Everything	1
Great Swimming Lessons	1
New benches, restrooms	1
Park is fully open - trails are well groomed.	1
Picnicking	1
Rock Throwing	1
<b>Total</b>	<b>150</b>

## Open-Ended Questions

- Most frequent responses were weather, lack of bathrooms/locked bathrooms, insects, and parking

### Summary of Open-ended Responses to: “What did you like least about your recreational experience today?”

Response	Number of Comments
Weather	12
Lack of bathrooms/locked bathrooms	2
Insects	2
Parking	2
Carrying our chairs down	1
Lifting my boat into my truck	1
Manual labor	1
No eagles yet	1
Pool isn't open	1
Total	23

## Effects of Project Operation and Maintenance on Recreation

- Mine Kill State Park Boat Launch, Schoharie Creek Fishing Access, and Upper Reservoir Access Areas remain accessible over the full range of B-G Project operations.
- Floating debris was not identified as an issue that impacted recreationists' boating experiences on the Lower Reservoir.

## The results of the Recreation Use/User Contact Survey are consistent with the findings in the Recreational Boating Desktop Feasibility Assessment

- Based on Spot Counts, Calibration Counts, and Use Records non-motorized boating was participated in by less than 1% of users
- Of the 160 user contact survey participants who indicated the recreational activity in which they have participated, four respondents identified that in the past they have participated in canoeing or kayaking at the B-G Project
- The opinion questions yielded no responses indicating a desire for additional boating opportunities or access points

## Summary

- Majority of use occurs in the summer, followed by fall, winter, then spring.
- Visiting interpretive centers was the most popular recreation use, followed by walking/hiking/running and picnicking.
- Majority of use occurred at Mine Kill State Park, Lansing Manor Complex and Mine Kill Falls Overlook.
- Recreation Sites are used well below design capacity, allowing room for future growth.
- User ratings were high for the amount of parking, site condition, variety of facilities/amenities and available access to B-G Project waters.
- Boat launches and access areas provide access under a full range of project operations

# Socioeconomic Study



## Overall Goals

- Develop a demographic and economic profile of the local and neighboring communities
- Evaluate the effects of the Project on the electric market and the potential socioeconomic impacts resulting from the production of power by the Project
- Evaluate potential impacts on the local communities from the Power Authority's tax-exempt status
- Evaluate potential impacts associated with the local and neighboring communities providing first responder services

# Demographic, Housing, and Economic Profiles



## Demographic and Housing Profile

- Age
  - Median age in Schoharie County is 43.4 years, with most of the towns having an older median age. New York State's median age is 38.1, slightly higher than the median age of the US population of 37.4 years old.
- Race and Ethnicity
  - Local and neighboring communities are predominantly white (94% or more) and non-Hispanic (95% or more).
- Education
  - 84% to 91% of the population in the local and neighboring communities have a high school degree or higher, with 12% to 23% of the population having an undergraduate degree or higher.
- Housing
  - Units in the local and neighboring communities were typically built in the 1970s (younger than the state's housing stock; median values are in the mid-\$100,000s)
  - Significant numbers of housing units are for seasonal use in Blenheim, Gilboa, Conesville, and Roxbury, where more than half of homes are classified as *vacant*.

## Demographics: Historical Population

Place	1970	1980	1990	2000	2010	2014	Average Annual
<b>United States (thousands)</b>	203,302	226,542	248,718	281,422	308,746	318,857	1.0%
<i>Percentage change</i>		11%	10%	13%	10%	3%	
<b>New York State (thousands)</b>	18,237	17,558	17,990	18,976	19,378	19,746	0.2%
<i>Percentage change</i>		-4%	2%	5%	2%	2%	
<b>B-G Region</b>	662,488	665,764	678,399	680,336	701,359	700,927	0.1%
<i>Percentage change</i>		0%	2%	0%	3%	0%	
<b>Local Communities</b>							
<b>Blenheim</b>	260	292	375	330	377	371	0.8%
<i>Percentage change</i>		12%	28%	-12%	14%	-2%	
<b>Gilboa</b>	854	1,078	1,270	1,215	1,307	1,277	0.9%
<i>Percentage change</i>		26%	18%	-4%	8%	-2%	
<b>Gilboa-Conesville CSD</b>	NA	NA	NA	NA	2,703	N/A	N/A
<i>Percentage change</i>							
<b>Schoharie County</b>	24,750	29,710	31,840	31,582	32,749	31,566	0.6%
<i>Percentage change</i>		20%	7%	-1%	4%	-4%	

## Demographics: Historical Population

Place	1970	1980	1990	2000	2010	2014	Average Annual
<i>Neighboring Communities</i>							
<b>Conesville</b>	489	681	684	726	734	710	0.9%
<i>Percentage change</i>		39%	0%	6%	1%	-3%	
<b>Jefferson</b>	840	1,108	1,190	1,285	1,410	1,377	1.1%
<i>Percentage change</i>		32%	7%	8%	10%	-2%	
<b>Middleburgh</b>	2,486	2,980	3,290	3,515	3,746	3,607	0.8%
<i>Percentage change</i>		20%	10%	7%	7%	-4%	
<b>Roxbury</b>	2,252	2,291	2,388	2,509	2,502	2,427	0.2%
<i>Percentage change</i>		2%	4%	5%	0%	-3%	
<i>Source: U.S. Census Bureau 2016</i>							
<i>Note: Annexations may have affected the population counts of some of the local and neighboring communities.</i>							

## Demographics: Population Projections

Place	2020	2030	2040	2050	2060	Average Annual
<b>New York State (thousands)</b>	20,714	22,297	23,696	25,049	26,599	0.6%
<i>Percentage change</i>		7.60%	6.30%	5.70%	6.20%	
<b>B-G Region</b>	712,834	753,251	782,678	797,281	828,228	0.4%
<i>Percentage change</i>		5.70%	3.90%	1.90%	3.90%	
<i>Local Communities</i>						
<b>Blenheim</b>	377	412	438	467	490	0.7%
<b>Gilboa</b>	1,364	1,492	1,586	1,690	1,774	0.7%
<b>Gilboa-Conesville CSD</b>	2,633	2,881	3,063	3,262	3,426	0.7%
<b>Schoharie County</b>	32,135	35,159	37,387	39,818	41,817	0.7%
<i>Percentage change</i>		9.4%	6.3%	6.5%	5.0%	
<i>Neighboring Communities</i>						
<b>Conesville</b>	716	783	833	887	932	0.7%
<b>Jefferson</b>	1,568	1,715	1,824	1,943	2,040	0.7%
<b>Middleburgh</b>	3,681	4,028	4,283	4,561	4,790	0.7%
<b>Roxbury</b>	2,524	2,663	2,763	2,809	2,916	0.4%
<i>Percentage change</i>		5.50%	3.80%	1.70%	3.80%	

Source: REMI modeling.

## Economic Profile

- Occupation and Industry
  - *Management, business, science, and arts* was cited most frequently in the American Community Survey within the local and neighboring communities
  - *Educational services, and health care and social assistance* was the most often mentioned industry.
- Labor Force and Employment
- Income Levels and Poverty

## Economics: Employment, February 2016

Place*	Civilian Labor Force	Total Employed	Unemployment Rate
United States	158,279,000	150,060,000	5.2%
New York State	9,748,023	9,225,397	5.4%
B-G Region	313,866	298,652	4.8%
Schoharie County	15,070	14,106	6.4%

\*The BLS does not publish employment data at the town level.

Source: U.S. Bureau of Labor Statistics

## Economics: Employment, 2010-2014

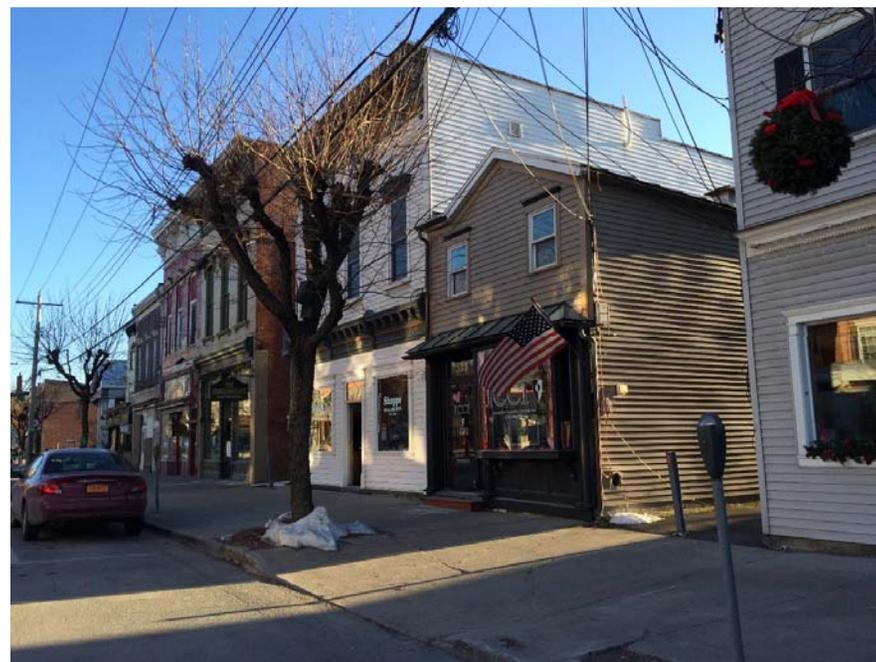
Place	Civilian Labor Force	Total Employed	Unemployment Rate
United States	157,940,014	143,435,233	9.2%
New York State	10,030,632	9,137,540	8.9%
B-G Region	361,090	331,904	8.1%
Local Communities			
Blenheim	161	140	13.0%
Gilboa	687	593	13.7%
Gilboa-Conesville CSD	1,183	1,061	10.3%
Schoharie County	16,375	14,469	11.6%
Neighboring Communities			
Conesville	340	311	8.5%
Jefferson	804	736	8.5%
Middleburgh	1,931	1,605	16.9%
Roxbury	916	749	18.2%
* Vintage 2014 data covering the period from 2010 through 2014. Source: U.S. Census Bureau			

## Economics: Income and Poverty

Place	Median Family Income	Per Capita Income	Persons below Poverty Level
United States	\$65,443	\$28,555	15.6%
New York State	\$71,419	\$32,829	15.6%
B-G Region	N/A	\$29,035	15.6%
<i>Local Communities</i>			
Blenheim	\$59,231	\$23,543	13.2%
Gilboa	\$72,426	\$28,398	9.3%
Gilboa-Conesville CSD	\$58,958	\$25,144	14.7%
Schoharie County	\$66,272	\$26,097	12.9%
<i>Neighboring Communities</i>			
Conesville	\$60,000	\$25,180	17.5%
Jefferson	\$60,800	\$26,037	13.1%
Middleburgh	\$62,668	\$25,596	17.8%
Roxbury	\$55,042	\$22,318	15.6%
* Vintage 2014 data covering the period from 2010 through 2014			

# Economic Effects of the Project

- Direct Effects on Local and Neighboring Economies
- Direct Effects on New York Electric Markets



## Direct Effects on Local Economies: Employment and Expenditures

- Employment (2015)
  - 57% of Project employees live in Schoharie County
  - ZIP codes 12112, 12076, and 12157 are the most frequent places of residence
- Expenditures (2014)
  - \$17.7 million in total expenditures
  - \$13.6 million in labor costs and benefits (77% of spending).
  - \$1.5 million in materials (8.6 % of spending)
- Payroll (2014)
  - 55% of Project payroll was to employees who reside in Schoharie County.
  - 93% of Project payroll was to employees who reside in the B-G Region.

## Direct Effects on Local Economies: Payments to First Responders

First Responder Organization	2009	2010	2011	2012*	2013
Blenheim Hose Company	\$4,000	\$4,000	\$0	\$23,000	\$0
Conesville Fire/EMS	\$4,000	\$4,000	\$4,000	\$64,526	\$5,000
Grand Gorge Fire/EMS (Town of Roxbury)	\$0	\$6,000	\$0	\$55,000	\$5,000
Jefferson Fire/EMS	\$0	\$4,000	\$4,000	\$4,000	\$0
Middleburgh Fire/MEVAC	\$4,000	\$0	\$2,000	\$36,000	\$5,000
<b>Total</b>	<b>\$12,000</b>	<b>\$18,000</b>	<b>\$10,000</b>	<b>\$182,526</b>	<b>\$15,000</b>
*Payments in 2012 were in support of recovery efforts from the effects of Hurricane Irene. Additional payments were made for the siren system.					

# Forecast of Value of the B-G Project to the New York Electric Grid



## Nature and Operation of the New York Power Grid

- The New York electric grid is an electric system comprising high-voltage transmission lines and hundreds of electric generating plants.
  - More than 11,000 miles of transmission lines
  - More than 500 electric power generators (including B-G) providing
  - Over 39,000 MW of electrical generation
  - New York electric system's peak demand (consumer usage) was roughly 31,000 MW (2015)
  - With an energy consumption of 162 million megawatt-hours (MWh)
    - 162 BILLION kilowatt-hours (KWh)
- Many owners of the components of the electric grid
  - AKA the “bulk power grid”

## Nature and Operation of the New York Power Grid, continued

- All these components of the bulk power grid are operated as if it was one system and owned by one entity – great efficiency and cost savings results
- The New York Independent System Operator (NYISO) is responsible for operation - but not ownership – of the bulk power grid
  - Dispatch of power plants, operation of transmission lines and sub-stations, etc.
  - NYISO also administers wholesale electricity markets in New York that provide for electric users to pay and owners of the bulk power grid components to receive compensation

## Integrated Planning Model<sup>®</sup> (IPM)

- The Integrated Planning Model (IPM) was used to evaluate the direct effect of the Project on energy and capacity prices in New York through 2060
- The model is a production cost and capacity expansion simulation model designed to project competitive market prices of electricity
- The model simulates the NYISO operation of the bulk power grid
- The model includes a detailed representation of
  - characteristics of existing and planned power plants
  - electric consumer use (“electric load”)
  - fuel prices
  - environmental allowance and compliance costs
  - operating constraints on power plants and the electric transmission system

## Integrated Planning Model (IPM)

- Inputs for the IPM model include projections of:
  - Peak Load and Energy demand, from the NYISO 2015 Load and Capacity Data Report (the “Gold Book”) and extended forward
  - Power Plant fuel prices: ICF assumptions with consideration of Power Authority planning assumptions
  - Environmental Assumptions: incorporating goals of US EPA, New York State, as well as the Regional Greenhouse Gas Initiative (RGGI)
  - Renewable Energy Targets: Reflects Governor’s NY-Sun initiative
  - Cost of New Power Plant construction: assumed to increase at the rate of inflation

## Integrated Planning Model (IPM)

- Outputs from IPM include projections of:
  - Power Plant (Generation) dispatch
  - Electric market prices
  - Need for and timing of addition of new grid components or retirement of existing ones
- Prices and build decisions are used in the next step of the study using the REMI model. That step involves the assessment of the economies of New York State, the B-G Region, Local Communities, and Neighboring Communities.

## Integrated Planning Model ( IPM)

- The study modeled two scenarios:
  - one considering the B-G Project's continued operation between 2019 and 2060, and
  - one hypothetically assuming its absence (i.e., the No Project scenario).

## IPM Modeling Results

- The hypothetical No Project scenario (i.e., assuming the absence of the B-G Project after 2019) indicates that New York would require replacement of ALL of the B-G Project generating capacity.
- 1,100 MW would need to be built during the period 2024 through 2030 to replace the capacity of the B-G Project.

## IPM Modeling Results:

Estimated Annual Savings on Electricity Bills by Customer Class with the B-G Project's Continued Operation

	2020	2030	2040	2050	2060
<b>Average Annual Typical Residential Bill Savings (\$ per year)</b>	\$64.53	\$36.26	\$13.3	\$0.53	\$1.86
<b>Total Savings, All Residential Customers (\$ million)</b>	\$291.3	\$164.0	\$59.6	\$2.3	\$8.2
<b>Total Savings, All Commercial Customers (\$ million)</b>	\$436.9	\$246.0	\$89.4	\$3.5	\$12.2
<b>Total Savings, All Industrial Customers (\$ million)</b>	\$80.9	\$45.6	\$16.6	\$0.7	\$2.3
<b>Total Savings, All Customers (\$ million)</b>	\$809.1	\$455.5	\$165.5	\$6.5	\$22.6

## IPM Modeling Results:

### Summary of the B-G's Project Value to Consumers in the New York Power Market

These projections represent the market value (reduction in costs) that the B-G Project provides to New York consumers.

Market Type	NPV of Effect on Power Market Costs, 2019 - 2060
Wholesale Energy	-\$61,979,000
Capacity	-\$6,534,434,000
Ancillary Services	-\$33,246,000
<b>Total</b>	<b>-\$6,629,659,000</b>
<b>Total Annualized Basis</b>	<b>-\$492,822,000</b>
NPV=net present value, assumes a 7 percent discount rate	

Note: Negative value reflects reduction in cost resulting from continued operation of the B-G Project. Does not reflect actual revenue received by the Power Authority from power produced during future operations of B-G.

## The B-G Project's Annual Expenditures and Revenues

\$ Millions per Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Operating Revenue	\$107.7	\$103.4	\$53.2	\$53.5	\$36.5	\$44.3	\$83.8	\$112.5	\$75.5
Operating Expenditure	\$94.1	\$91.9	\$49.1	\$61.4	\$55.9	\$56.6	\$63.2	\$78.0	\$69.3
Net Operating Income	\$13.6	\$11.5	\$4.0	-\$7.8	-\$19.5	-\$12.3	\$20.6	\$34.4	\$6.3
Net Income*	\$14.7	\$12.4	\$5.1	-\$7.4	-\$19.3	-\$12.1	\$20.9	\$35.2	\$7.9
*Net Operating Income including 'Investment and Other Income' and 'Interest and Other Expense.'									

# Socioeconomic Effects



## REMI Background

- Regional Economic Models, Inc. (REMI)'s Policy Insight Plus model is a commonly used tool for socioeconomic impact modeling
- REMI was founded in 1980 and quickly became the industry standard and remains so today
- REMI was used for the modeling of the socioeconomic effects of the Niagara Power Project
- Model can be customized with a variety of industrial sectors and different modeling regions
- REMI provides the ability to forecast economic impacts over time
- For the US, current version has the ability to forecast impacts to 2060
- More model details, including detailed documentation can be found at [www.remi.com](http://www.remi.com)

## Modeling Energy Infrastructure Effects

- REMI was used in conjunction with IPM modeling to study the socioeconomic impacts of the B-G Project
  - IPM outputs that were used in REMI include:
    - Changes in energy prices and demand
    - Capital and O&M expenditures for new generation units
    - Bill savings
    - Others

## Outputs of the REMI Model

- Jobs
- Income
- Gross Regional Product (GRP)
- Population

## Jobs Supported by the B-G Project

	2020	2030	2040	2050	2060
New York State	5,620	4,220	3,138	1,816	2,053
B-G Region	903	1,030	996	1,086	1,222
Rest of New York	4,717	3,190	2,142	730	831
<i>Local Communities</i>					
Blenheim	4	5	5	6	6
Gilboa	18	22	22	26	28
Gilboa-Conesville CSD*	31	38	38	46	50
Schoharie County	423	516	516	622	682
<i>Neighboring Communities</i>					
Conesville	8	10	10	12	13
Jefferson	21	25	25	31	34
Middleburgh	50	61	61	73	80
Roxbury	1	1	1	1	2

\*The Gilboa-Conesville CSD includes portions of the towns of Blenheim and Gilboa.

## Income Supported by the B-G Project (\$Millions)

	2020	2030	2040	2050	2060
New York State	\$502.9	\$482.6	\$372.4	\$275.0	\$354.2
B-G Region	\$56.7	\$93.1	\$107.0	\$143.4	\$195.8
Rest of New York	\$446.2	\$389.5	\$265.4	\$131.6	\$158.4
<i>Local Communities</i>					
Blenheim	\$1.1	\$2.4	\$2.9	\$4.6	\$6.2
Gilboa	\$1.7	\$3.7	\$4.5	\$7.1	\$9.5
Gilboa-Conesville CSD*	\$1.9	\$4.2	\$5.1	\$8.0	\$10.7
Schoharie County	\$28.9	\$64.2	\$78.1	\$124.1	\$165.9
<i>Neighboring Communities</i>					
Conesville	\$0.7	\$1.6	\$1.9	\$3.0	\$4.0
Jefferson	\$1.2	\$2.7	\$3.3	\$5.2	\$6.9
Middleburgh	\$2.3	\$5.2	\$6.3	\$10.1	\$13.5
Roxbury	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01

\*The Gilboa-Conesville CSD includes portions of the towns of Blenheim and Gilboa.

## Gross Regional Product (GRP) Supported by the B-G Project (\$Millions)

	2020	2030	2040	2050	2060
New York State	\$676.2	\$635.6	\$612.0	\$463.3	\$561.8
B-G Region	\$158.4	\$212.9	\$245.0	\$300.7	\$380.9
Rest of New York	\$517.9	\$422.7	\$367.0	\$162.6	\$180.8
<i>Local Communities</i>					
Blenheim	\$3.7	\$4.7	\$5.2	\$6.3	\$7.5
Gilboa	\$5.4	\$7.0	\$7.7	\$9.4	\$11.2
Gilboa-Conesville CSD*	\$5.6	\$7.1	\$7.9	\$9.7	\$11.5
Schoharie County	\$76.0	\$97.4	\$108.1	\$131.6	\$156.2
<i>Neighboring Communities</i>					
Conesville	\$3.0	\$3.8	\$4.2	\$5.1	\$6.1
Jefferson	\$3.3	\$4.3	\$4.7	\$5.8	\$6.8
Middleburgh	\$14.6	\$18.8	\$20.8	\$25.4	\$30.1
Roxbury	\$0.03	\$0.04	\$0.05	\$0.06	\$0.07

\*The Gilboa-Conesville CSD includes portions of the towns of Blenheim and Gilboa.

## Population Supported by the B-G Project

	2020	2030	2040	2050	2060
New York State	2,648	9,179	7,447	5,321	4,620
B-G Region	496	2,077	2,386	3,148	3,630
Rest of New York	2,152	7,102	5,061	2,173	990
<i>Local Communities</i>					
Blenheim	4	17	21	32	38
Gilboa	14	63	77	115	136
Gilboa-Conesville CSD*	26	121	148	223	263
Schoharie County	323	1,478	1,810	2,716	3,215
<i>Neighboring Communities</i>					
Conesville	7	33	40	61	72
Jefferson	16	72	88	133	157
Middleburgh	37	169	207	311	368
Roxbury	1	2	2	2	2

\*The Gilboa-Conesville CSD includes portions of the towns of Blenheim and Gilboa.

## Summary of Socioeconomic Results

- B-G Project has a significant positive effect on the economy in terms of jobs, income, GRP, and population.
- Continued Project operation is expected to support more than 1,000 jobs annually.
- The contributions of the B-G Project to the region are significantly greater than its direct effect on jobs.
  - Expected to provide annual economic output (GRP) between \$160 million in 2020 and \$380 million in 2060 in the B-G Region
    - roughly 40 to 50 percent of that output is expected to benefit the residents of Schoharie County directly
    - the remaining benefit throughout the surrounding six counties.
  - Forecasted to support personal income of between \$56.7 million in 2020 and \$195.8 million in 2060
    - Roughly 50 to 85 percent of that income is expected to be earned by residents of Schoharie County
    - the remaining benefit is throughout the surrounding six counties.

# Direct Effects of Power Authority's Tax Exempt Status



## B-G Project Tax Exempt Lands

- Approximately  $\frac{1}{2}$  of Project lands are located in Blenheim and  $\frac{1}{2}$  are located in Gilboa.
- Project lands constitute about 75 % of the acreage exempt from town and school district taxes in Gilboa and about 59 % in Blenheim.
- Project lands constitute approximately 18 % of the total acreage exempt from county property taxes in Blenheim and 41 % in Gilboa.
- Non-project tax exempt parcels include school property, religious land, buildings owned by government entities, cultural facilities, recreational facilities, and cemeteries.

## Total Tax Base by Taxing Jurisdiction

	Blenheim	Gilboa	Gilboa-Conesville CSD	Schoharie County
Total Assessed Value	\$30,158,396	\$7,087,020	\$565,634,128	\$2,280,721,289
Total Equalization Rate	80%	1.81%	Not applicable	Not applicable
Total Value of Tax Base	\$37,697,995	\$391,548,066	\$565,634,128	\$2,280,721,289
<b>Value of B-G Project Lands</b>	<b>\$100,641,875</b>	<b>\$1,077,680</b>	<b>\$101,719,555</b>	<b>\$101,719,555</b>
Value of Tax Base with B-G Project Lands	\$138,339,870	\$392,625,746	\$667,353,683	\$2,382,440,844
<i>Project Lands as Percentage of Tax Base</i>	<i>72.7%</i>	<i>0.3%</i>	<i>15.2%</i>	<i>4.3%</i>

Sources: Schoharie County Real Property Tax Services Office, New York State Office of Real Property Tax Services

## Hypothetical Change in Tax Rates on Value of Local Communities (per \$1,000 Value)

	2015 Rates (\$/1,000)	Hypothetical Rates With Tax Payments on the Value of B-G*	Change in Tax Rate*
<b>Blenheim</b>	\$7.40	\$2.02	-72.70%
<b>Gilboa</b>	\$2.94	\$2.93	-0.34%
<b>Schoharie County</b>	\$8.78	\$8.40	-4.33%
<b>Gilboa-Conesville CSD</b>	\$10.79	\$9.15	-15.20%

\*ICF calculations: Rates expressed for each \$1,000 of Value as identified on the towns' tax rolls; calculations account for municipalities' equalization rates.

## Hypothetical Tax Payments on B-G Project Lands

	2020	2030	2040	2050	2060
<b>Blenheim</b>	\$235,454	\$301,400	\$385,818	\$493,880	\$632,208
<b>Gilboa</b>	\$4,035	\$5,165	\$6,612	\$8,463	\$10,834
<b>Schoharie County</b>	\$991,480	\$1,269,178	\$1,624,655	\$2,079,696	\$2,662,186
<b>Gilboa-Conesville CSD</b>	\$1,078,819	\$1,380,980	\$1,767,771	\$2,262,896	\$2,896,698
<b>Total Tax Bill</b>	<b>\$2,309,787</b>	<b>\$2,956,723</b>	<b>\$3,784,855</b>	<b>\$4,844,935</b>	<b>\$6,201,926</b>

## Alternative Analysis: Undeveloped Land

- An alternative valuation approach that relied on the average value of all undeveloped land in Blenheim and Gilboa was also used to calculate the B-G Project's hypothetical tax burden, effect on local tax rates, and projected tax payments.
- Value of the B-G Project land and the levy to be collected was based on the weighted average land value of all undeveloped land in Blenheim and Gilboa (from data provided by the Schoharie County Real Property Tax Office)
- Average value of undeveloped land was calculated to be \$1,806/acre.
- This approach yields the following values for the B-G Project lands:
  - Blenheim: \$2.7 million
  - Gilboa: \$2.6 million
  - Gilboa-Conesville CSD: \$5.3 million
  - Schoharie County: \$5.3 million

## Hypothetical Change in Tax Rates on Value of Local Communities (per \$1,000 Value), Undeveloped Land Valuation Approach

	2015 Rates*	Hypothetical Rates With Tax Payments on the Value of B-G Project	Change in Tax Rate
Blenheim	\$7.40	\$6.98	-5.71%
Gilboa	\$2.94	\$2.92	-0.75%
Schoharie County	\$8.78	\$8.76	-0.25%
Gilboa-Conesville CSD	\$10.79	\$10.69	-0.95%

*\*Accounts for municipalities' equalization rates.*

## Hypothetical Tax Payments on B-G Project Lands, Undeveloped Land Valuation Approach

	2020	2030	2040	2050	2060
Blenheim	\$22,287	\$26,930	\$31,573	\$36,216	\$40,859
Gilboa	\$9,267	\$11,198	\$13,128	\$15,059	\$16,990
Schoharie County	\$55,789	\$67,412	\$79,035	\$90,658	\$102,281
Gilboa-Conesville CSD	\$68,079	\$82,262	\$96,445	\$110,628	\$124,811
Total bill	<b>\$155,422</b>	<b>\$187,801</b>	<b>\$220,181</b>	<b>\$252,561</b>	<b>\$284,940</b>

# Socioeconomic Effects of Power Authority's Tax Exempt Status



## Jobs Effects of Hypothetical Tax Payments (on the B-G Project as it exists)

	2020	2030	2040	2050	2060
New York State	8	34	57	106	149
B-G Region	19	50	72	114	149
Rest of New York	-11	-16	-16	-8	0
<i>Local Communities</i>					
Blenheim	3	7	10	17	21
Gilboa	6	16	23	38	47
Gilboa-Conesville CSD	10	27	40	65	81
Schoharie County	22	59	86	139	173
<i>Neighboring Communities</i>					
Conesville	2	5	7	12	15
Jefferson	0	1	2	3	4
Middleburgh	1	3	4	7	9
Roxbury	0	1	1	2	2

## Income Effects (\$Millions) of Hypothetical Tax Payments (on the B-G Project as it exists)

	2020	2030	2040	2050	2060
New York State	\$0.1	\$3.5	\$7.3	\$18.7	\$31.6
B-G Region	\$1.8	\$6.6	\$11.5	\$24.3	\$38.1
Rest of New York	-\$1.7	-\$3.1	-\$4.2	-\$5.6	-\$6.5
<i>Local Communities</i>					
Blenheim	\$0.3	\$1.2	\$2.2	\$4.6	\$6.8
Gilboa	\$0.8	\$2.8	\$4.9	\$10.4	\$15.4
Gilboa-Conesville CSD	\$1.3	\$4.8	\$8.4	\$17.8	\$26.3
Schoharie County	\$2.8	\$10.2	\$18.1	\$38.0	\$56.2
<i>Neighboring Communities</i>					
Conesville	\$0.3	\$0.9	\$1.6	\$3.4	\$5.0
Jefferson	\$0.1	\$0.2	\$0.3	\$0.7	\$1.0
Middleburgh	\$0.1	\$0.4	\$0.6	\$1.3	\$2.0
Roxbury	\$0.03	\$0.13	\$0.22	\$0.46	\$0.69

## GRP Effects (\$Millions) of Hypothetical Tax Payments (on the B-G Project as it exists)

	2020	2030	2040	2050	2060
New York State	-\$0.02	\$1.26	\$2.88	\$7.74	\$12.70
B-G Region	\$1.16	\$3.49	\$5.34	\$9.32	\$13.35
Rest of New York	-\$1.18	-\$2.23	-\$2.46	-\$1.58	-\$0.65
<i>Local Communities</i>					
Blenheim	\$0.17	\$0.51	\$0.80	\$1.45	\$1.92
Gilboa	\$0.39	\$1.17	\$1.82	\$3.28	\$4.35
Gilboa-Conesville CSD	\$0.66	\$1.99	\$3.11	\$5.61	\$7.44
Schoharie County	\$1.42	\$4.27	\$6.67	\$12.02	\$15.93
<i>Neighboring Communities</i>					
Conesville	\$0.14	\$0.41	\$0.64	\$1.15	\$1.52
Jefferson	\$0.03	\$0.08	\$0.13	\$0.23	\$0.30
Middleburgh	\$0.12	\$0.35	\$0.55	\$0.99	\$1.32
Roxbury	\$0.02	\$0.05	\$0.08	\$0.15	\$0.20

## Annual Population Effects of Hypothetical Tax Payments (on the B-G Project as it exists)

	2020	2030	2040	2050	2060
New York State	71	299	491	918	1,219
B-G Region	78	328	526	956	1,246
Rest of New York	-8	-29	-35	-37	-27
<i>Local Communities</i>					
Blenheim	10	43	69	128	167
Gilboa	22	97	156	290	378
Gilboa-Conesville CSD	38	166	267	496	647
Schoharie County	82	355	572	1,062	1,385
<i>Neighboring Communities</i>					
Conesville	7	31	51	94	122
Jefferson	2	7	12	22	29
Middleburgh	4	17	28	52	68
Roxbury	1	4	7	13	17

## Summary, Socioeconomic Effects of Hypothetical Tax Payments (on the B-G Project as it exists)

- Local and neighboring communities would be anticipated to have increases in jobs, income, GRP, and population
- Increases would be larger for local communities than for neighboring ones
- Reductions in effective tax rates would increase the region's attractiveness for other businesses
- Slight decreases in population are projected in the rest of New York
- Overall changes in population for the state are relatively small
  - 1,219-person increase in 2060
  - 0.005 percent increase over the baseline population projections for New York State

# First Responders

## First Responder Analysis

- In 2015, the Power Authority reviewed the emergency services that volunteer FROs have provided to the Power Authority's Northern Generating Facilities, including the B-G Project.
- These services typically are funded by villages, towns, donations, and other agreements.
- The Power Authority has provided financial payments to support local FROs for many years in recognition of the services they provide to the B-G Project.

## Power Authority Payments to FROs

Entity/First Responder Organization	Power Authority Total Payments 2009-2011, and 2013
Town of Blenheim / Blenheim Hose Company	\$8,000
Town of Conesville/Conesville Fire & EMS	\$17,000
Grand Gorge Hamlet (part of Roxbury)/Grand Gorge Fire & EMS	\$11,000
Town of Jefferson/Jefferson Fire & EMS	\$8,000
Town of Middleburgh/ Middleburgh Fire & EMS	\$11,000
<b>Total</b>	<b>\$55,000</b>

Notes: Additional payments in support of the siren system were made in 2010 – 2012.  
Payments made in 2012 were in support of Hurricane Irene recovery efforts.

## Average Annual First Responder Organization Call Volume

Entity/First Responder Organization	Average Annual Number of Total Calls	2009-2014 Total Calls to B-G Project
Town of Blenheim / Blenheim Hose Company	15	19
Town of Conesville/Conesville Fire & EMS	150	
Grand Gorge Hamlet (part of Roxbury)/Grand Gorge Fire & EMS	70	
Town of Jefferson/Jefferson Fire & EMS	305	
Town of Middleburgh/ Middleburg Fire & EMS	635	
Total	1,175	

- Total call volume associated with the B-G Project was less than 1% of the calls received by the FROs.

## Average Value of First Responder Organization Services

- For purposes of the REMI analysis, FRO payments were modeled based on the total anticipated 2016 payments to FROs in the amount of \$7,344.
- The Power Authority's 2016 anticipated payments to FROs through 2060 were projected by adjusting for inflation.
- In other words, the 2016 anticipated payments were another input to the REMI modelling effort in evaluating the socioeconomic effects of the B-G Project.

## Relicensing Process – Next Steps

October 15, 2016	Power Authority will file meeting summary
November 14, 2016	Public may file with FERC written proposed study plan modifications and/or disagreements with the Power Authority's meeting summary
December 14, 2016	Power Authority will respond to written study plan modifications and disagreements
January 13, 2017	FERC will issue study plan determination and amend approved study plans, as appropriate
February 18, 2017	Updated Study Report due date for Flooding Study

## Requirements for Proposed Study Plan Modifications (18 C.F.R. 5.15(f))

- Any proposal to modify the FERC-approved Study Plan must contain the following elements:
  - A showing of good cause why the proposal should be approved; and
  - A demonstration that:
    - The Power Authority did not conduct the approved study as provided in the FERC-approved study plan; or
    - The Power Authority conducted the study under anomalous environmental conditions

## Requirements for Proposed Study Plan Modifications (18 C.F.R. 5.15(e), (f))

- Any proposal for new information gathering or studies must contain the following elements:
  - A showing of “extraordinary circumstances warranting approval”; and
  - A statement explaining:
    - Any material changes in the law or regulations applicable to the information request;
    - Why the goals and objectives of any approved study could not be met with the approved study methodology;
    - Why the request was not made earlier;
    - Significant changes in the project proposal or that significant new information material to the study objectives has become available; and
    - Why the new study request satisfies the study criteria in 18 C.F.R. 5.9(b)