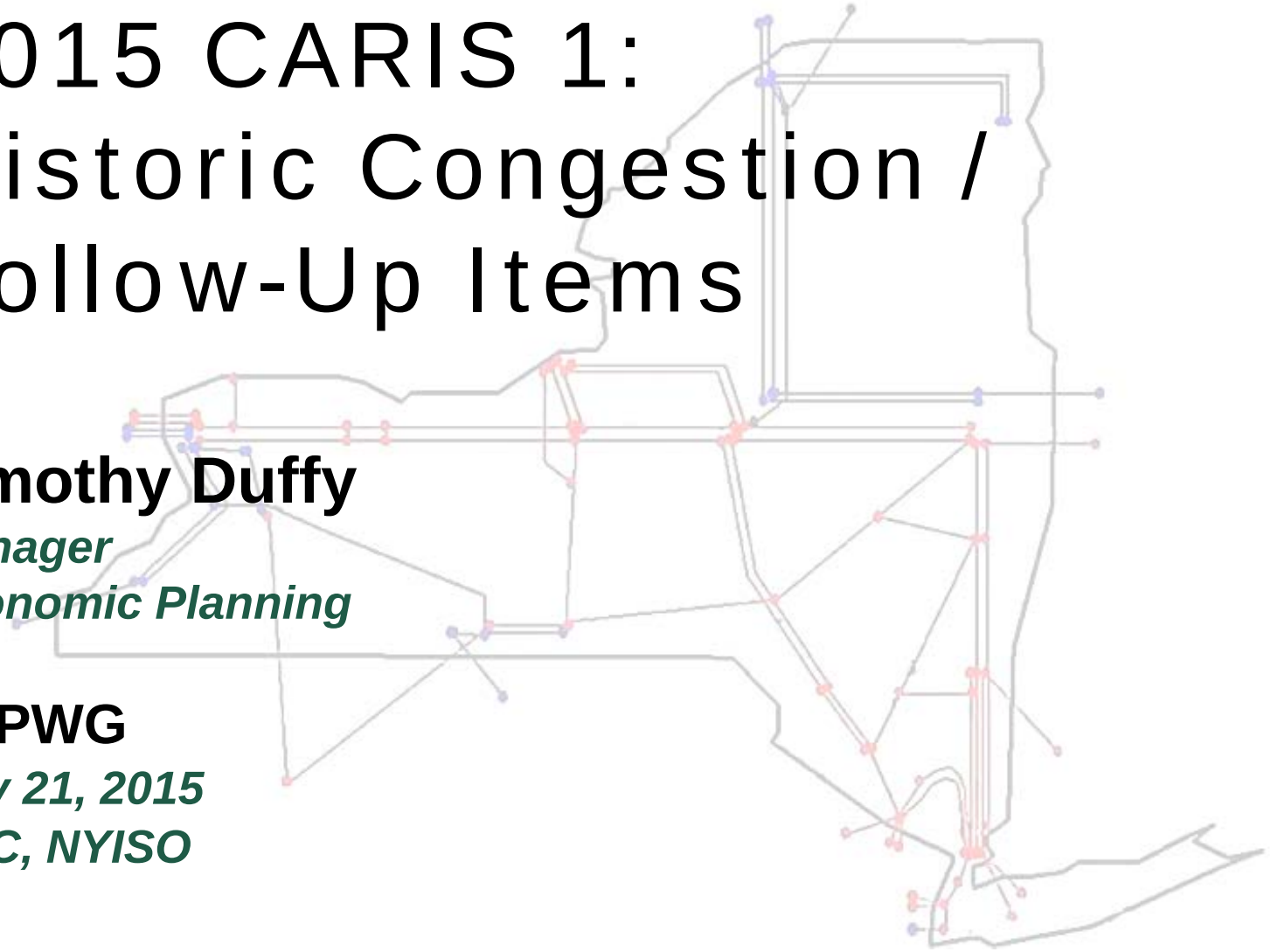
2015 CARIS 1: Historic Congestion / Follow-Up Items



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ESPWG
May 21, 2015
KCC, NYISO

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Methodology

- **NYISO utilizes the CROS ("Congestion Reporting for Off-Line") to calculate Demand$ Congestion NYCA-wide and by individual constraints**
- **CROS replicates the production SCUC, incorporating historic generator bids and forecasted loads but relaxing all transmission constraints**
- **NYISO posts quarterly congestion reports:**

  http://www.nyiso.com/public/markets_operations/services/planning/documents/index.jsp

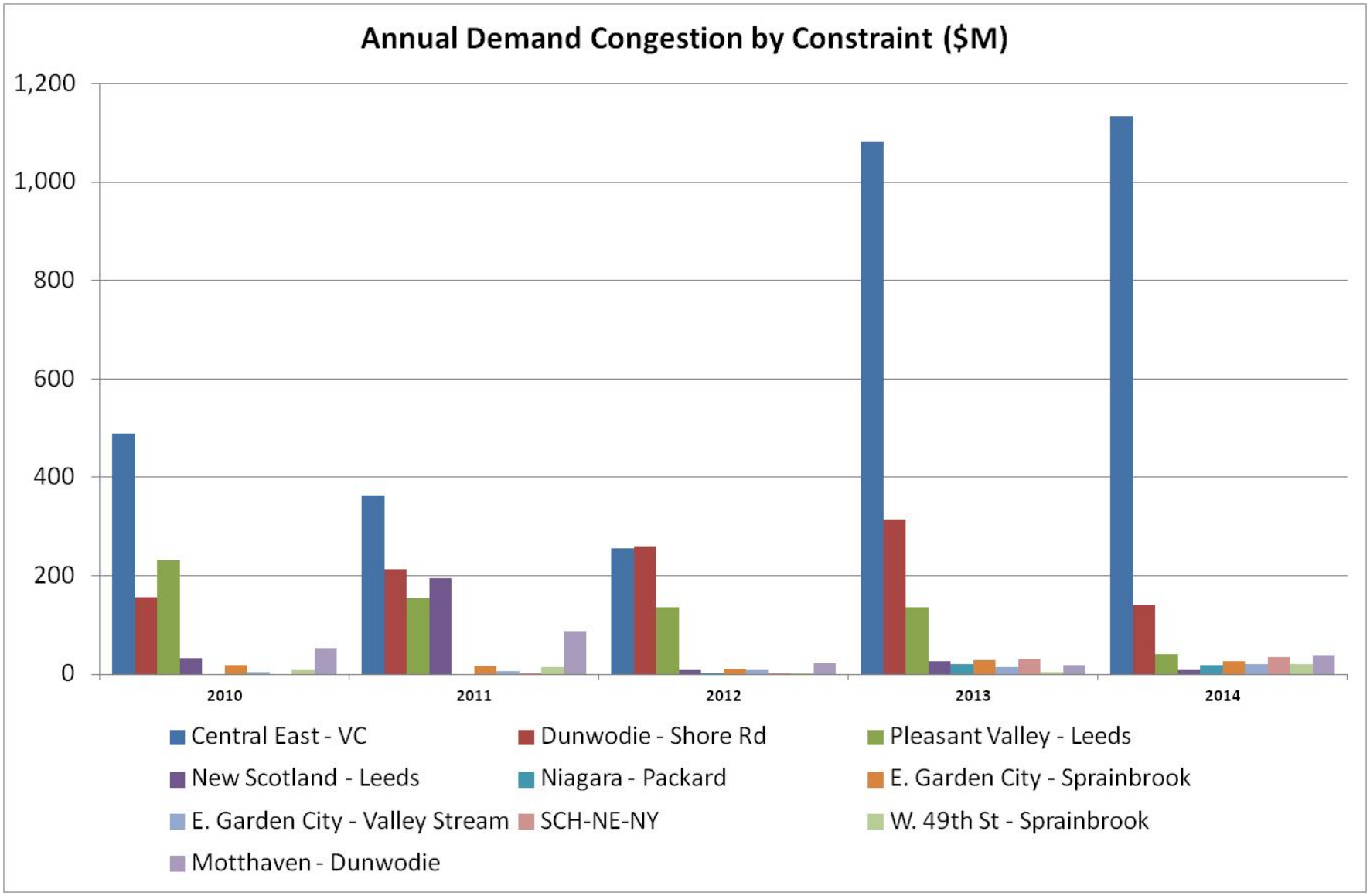
CARIS Phase 1 Process

- **Historic congestion values are utilized in conjunction with forecasted congestion to rank constrained interfaces or system elements for study**
  - ***5 years of historic congestion + 10 years forecasted congestion***
  - ***2010-2014 (historic)***
  - ***2015-2024 (forecasted)***
- **Forecasted congestion is pending completion of GE-MAPS Base Case production cost simulations**
  - ***Results are planned to be reviewed at June 11th ESPWG***

Demand$ Congestion

Annual Demand Congestion by Constraint ($M)

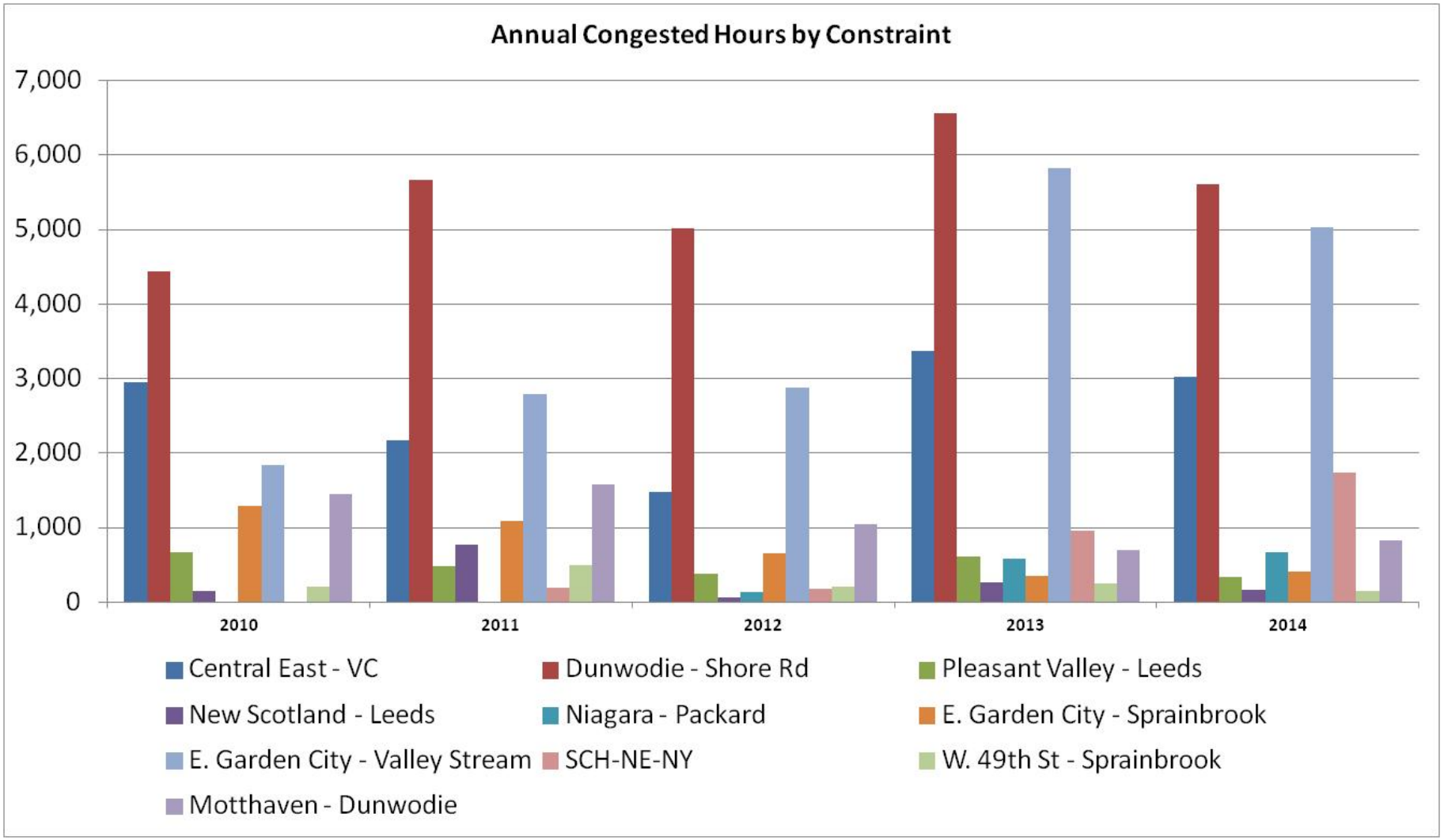
Constraint	2010	2011	2012	2013	2014	Average
Central East - VC	489.8	364.1	255.4	1,082.0	1,133.7	665.0
Dunwodie - Shore Rd	155.5	213.2	259.0	313.9	139.9	216.3
Pleasant Valley - Leeds	230.8	155.2	135.3	136.6	40.3	139.6
New Scotland - Leeds	32.7	195.8	8.7	26.7	7.6	54.3
Niagara - Packard	0.0	0.0	2.9	20.7	18.2	8.3
E. Garden City - Sprainbrook	18.9	16.7	10.9	28.7	26.8	20.4
E. Garden City - Valley Stream	3.3	7.3	7.9	13.6	20.2	10.5
SCH-NE-NY	0.0	0.4	0.7	31.6	34.1	13.4
W. 49th St - Sprainbrook	7.4	13.7	0.6	3.7	20.7	9.2
Motthaven - Dunwodie	52.2	87.5	21.9	17.8	39.7	43.8
Total NYCA Demand Congestion	**1,157.4**	**1,177.7**	**769.4**	**1,802.6**	**1,492.6**	**1,279.9**



Congested Hours

Annual Congested Hours by Constraint

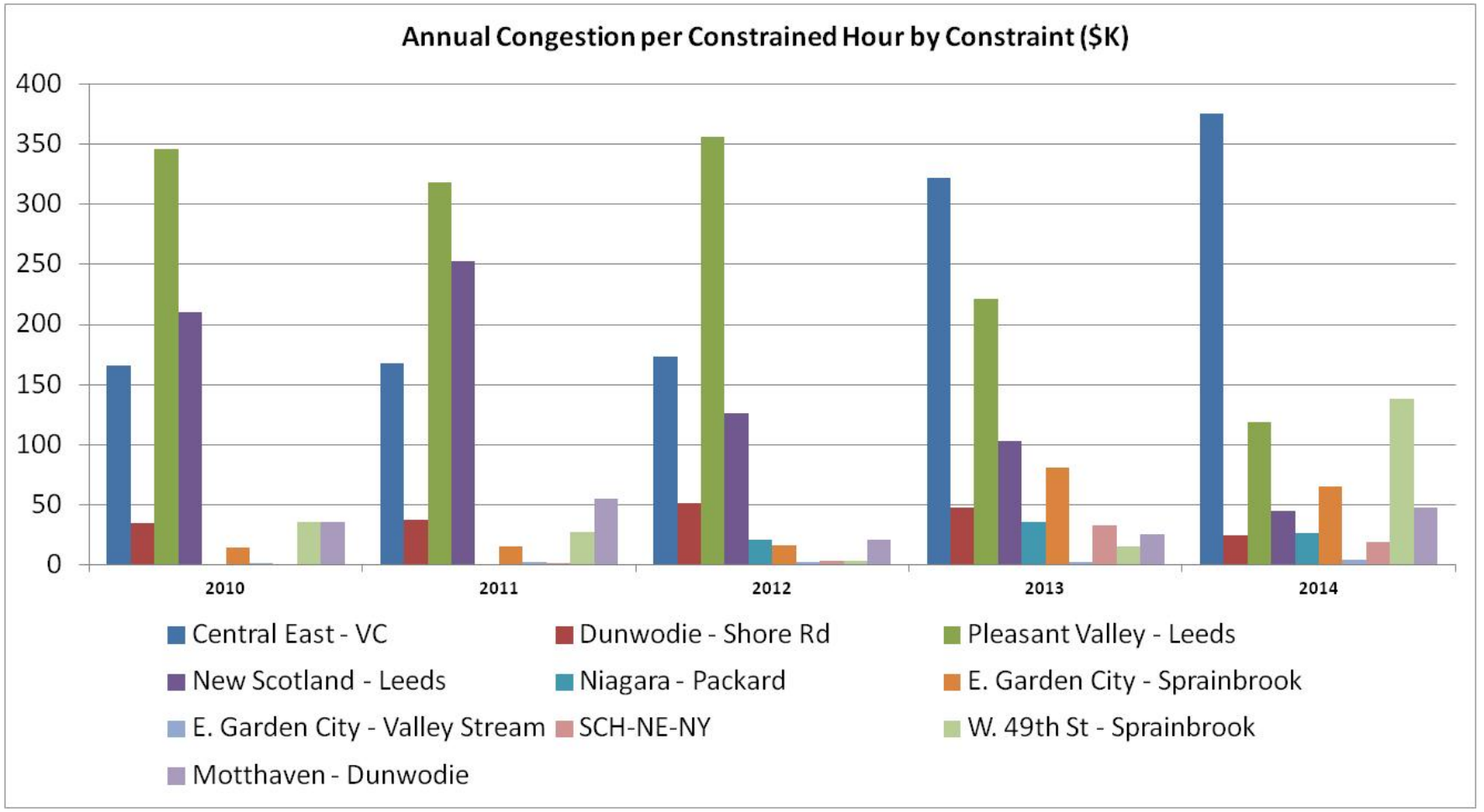
Constraint	2010	2011	2012	2013	2014	Average
Central East - VC	2,956	2,166	1,471	3,363	3,019	2,595
Dunwodie - Shore Rd	4,438	5,673	5,021	6,563	5,602	5,459
Pleasant Valley - Leeds	668	487	380	618	340	499
New Scotland - Leeds	156	774	69	258	170	285
Niagara - Packard	0	0	138	584	673	279
E. Garden City - Sprainbrook	1,296	1,081	651	354	412	759
E. Garden City - Valley Stream	1,832	2,792	2,875	5,823	5,038	3,672
SCH-NE-NY	0	191	182	956	1,732	612
W. 49th St - Sprainbrook	208	498	204	244	150	261
Motthaven - Dunwodie	1,451	1,576	1,041	704	829	1,120



Per Hour Demand$ Congestion

Annual Congestion per Constrained Hour by Constraint ($K)

Constraint	2010	2011	2012	2013	2014	Average
Central East - VC	165.7	168.1	173.7	321.7	375.5	240.9
Dunwodie - Shore Rd	35.0	37.6	51.6	47.8	25.0	39.4
Pleasant Valley - Leeds	345.5	318.6	356.1	221.0	118.6	272.0
New Scotland - Leeds	209.9	252.9	126.3	103.6	45.0	147.5
Niagara - Packard	N/A	N/A	21.1	35.4	27.0	27.8
E. Garden City - Sprainbrook	14.6	15.5	16.7	81.2	65.1	38.6
E. Garden City - Valley Stream	1.8	2.6	2.8	2.3	4.0	2.7
SCH-NE-NY	N/A	2.1	3.9	33.0	19.7	14.7
W. 49th St - Sprainbrook	35.7	27.5	3.1	15.1	138.1	43.9
Motthaven - Dunwodie	36.0	55.5	21.1	25.3	47.9	37.1

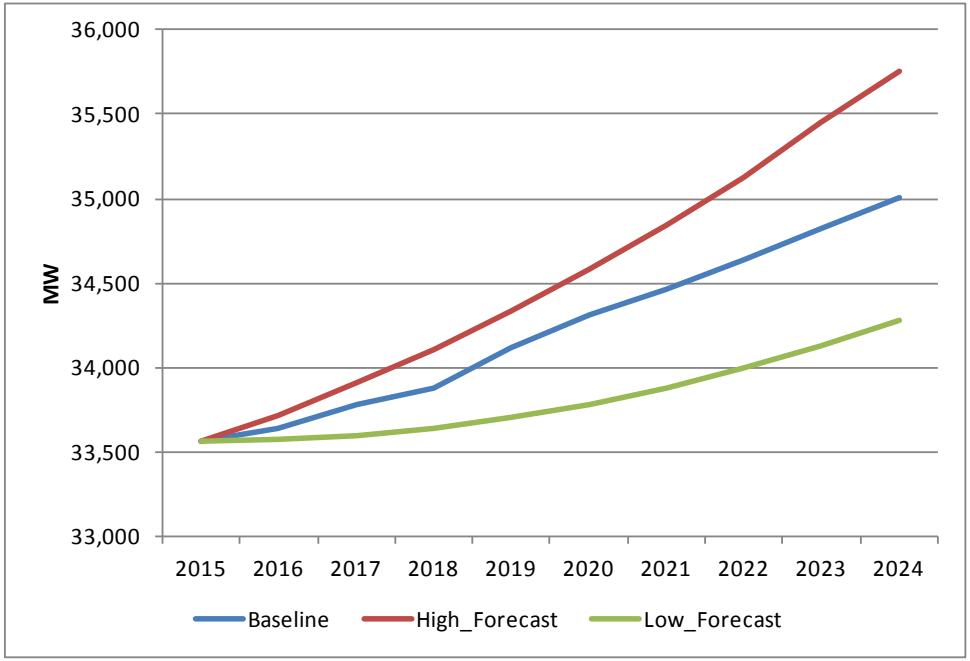


Load Forecast Scenario

- **Modified approach to constructing high and low Load Forecast scenarios**
- **No longer based on 90/10 Gold Book Forecasts**
- **Now reflect reasonable proportional adjustments to base forecast growth rates**
- **For example, the simple average growth in NYCA non-coincident peaks from 2015-2024:**
  - ***Base: 0.47%***
  - ***Low: 0.24%***
  - ***High:0.70%***

NYCA Coincident Peak Forecast

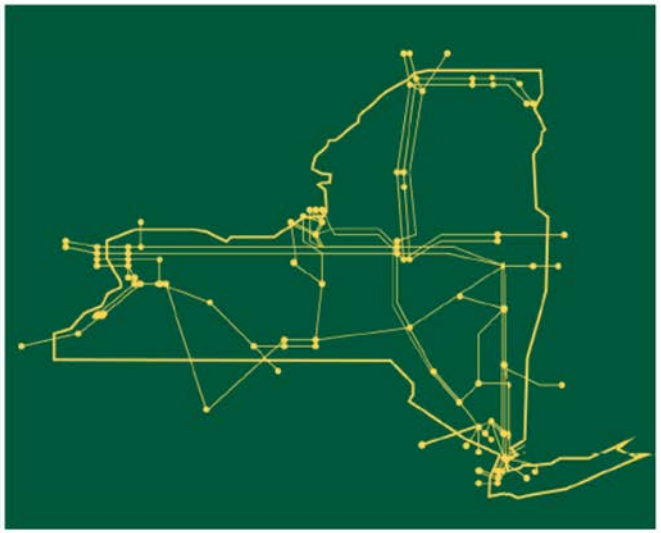
	Baseline	High_Forecast	Low_Forecast
2015	33,567	33,567	33,567
2016	33,636	33,711	33,574
2017	33,779	33,906	33,596
2018	33,882	34,110	33,638
2019	34,119	34,335	33,700
2020	34,309	34,579	33,779
2021	34,469	34,844	33,878
2022	34,639	35,128	33,996
2023	34,823	35,447	34,124
2024	35,010	35,753	34,280



Hurdle Rate Derivation

- **Question raised at 5/4 ESPWG as to hurdle rate derivation and whether the market transaction rate was utilized as "starting point" for commitment or dispatch hurdle rate**
- **Market transaction rates were in fact utiilized as starting point for dispatch hurdle rate**
  - ***Commitment hurdle rate = Dispatch hurdle rate + $2***

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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