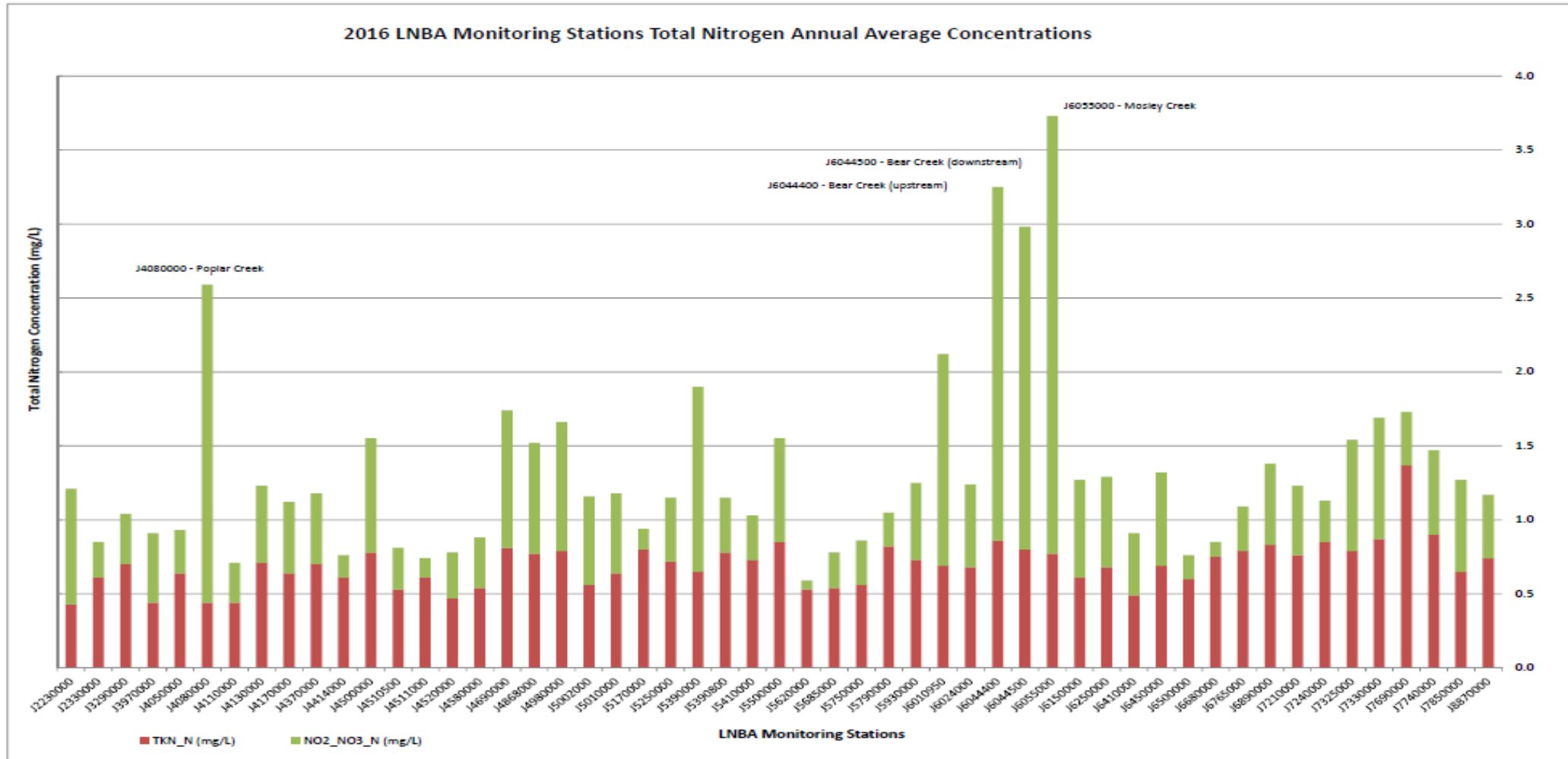
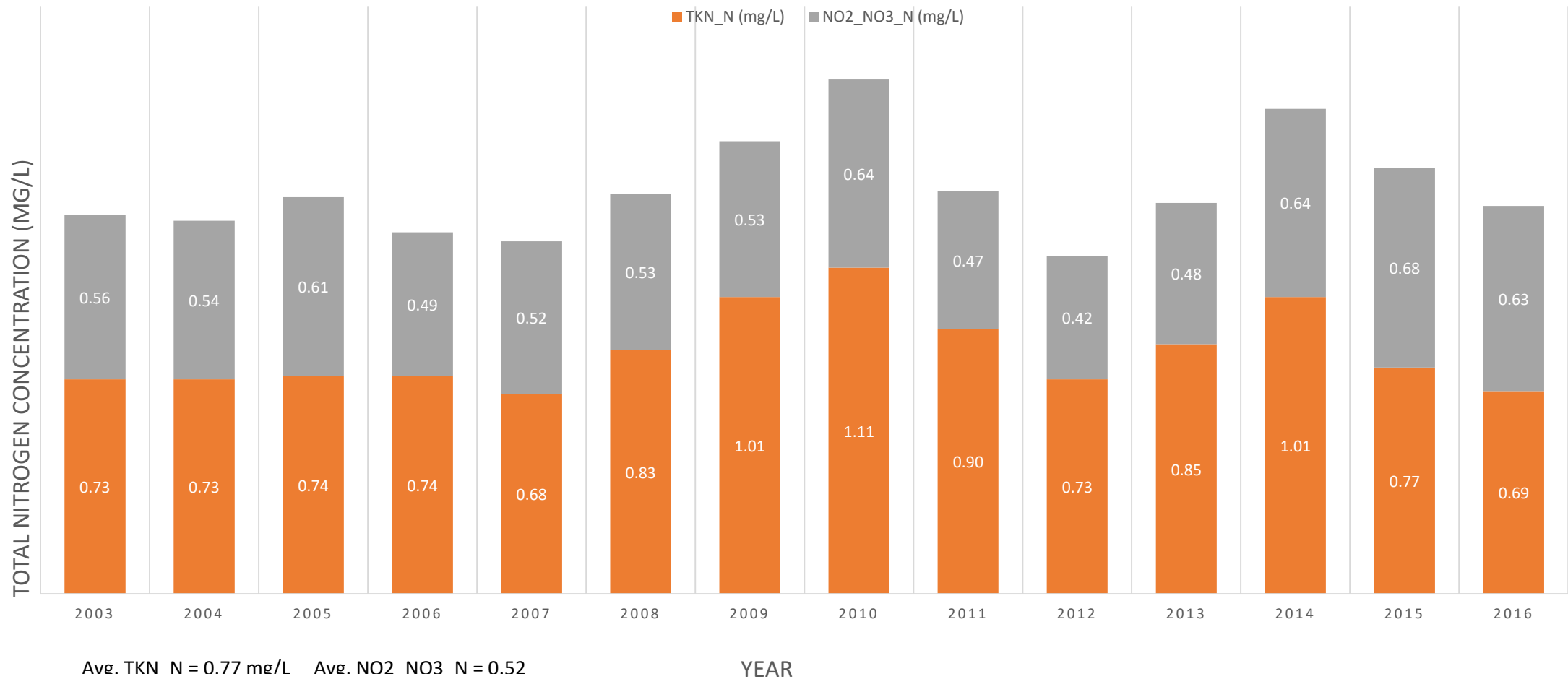


# 2016 TN Concentrations for LNBA Monitoring Sites



# 2003-16 Average TN Concentrations for LNBA Sites

2003-16 AVERAGE TOTAL NITROGEN CONCENTRATIONS FOR LNBA SAMPLING SITES



# 2016 NRCA TN Summary

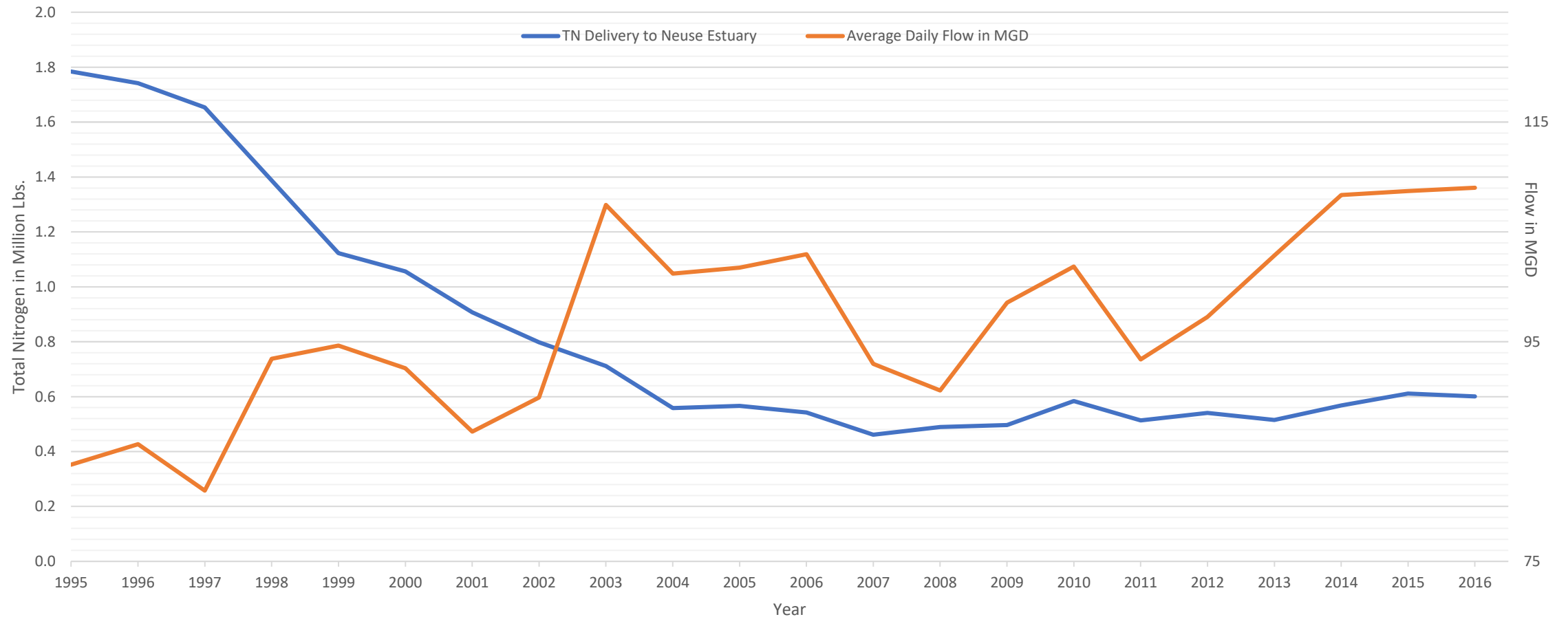
NPDES Permit #: NCC00001		END OF PIPE				ESTUARY					
FACILITY	NPDES Permit #	Permit Flow (MGD)	2016 Avg. Flow (MGD)	Member TN Allocation (Lbs/Yr.)	Member TN Discharge (Lbs/Yr.)	Transport Factor	Annual Lease (Estuary Lbs.)	Member Estuary Allocation	Adjusted TN Allocation 2016 (Lbs/Yr.)	2016 TN Delivery (Lbs/Yr.)	% of Estuary Allocation
SGWASA	NC0026824	5.500	2.019	58,599	14,111	10%	0	5,860	0	1,411	24
Town of Apex	NC0064050	3.600	1.087	40,547	12,451	50%	0	20,274	0	6,226	31
Town of Benson	NC0020389	1.900	1.063	33,070	10,724	50%	0	16,535	0	5,362	32
Town of Cary ~ North	NC0048879	12.000	5.659	143,246	38,968	50%	0	71,623	0	19,484	27
Town of Cary ~ South	NC0065102	12.800	5.369	180,211	34,452	50%	0	90,105	0	17,226	19
City of Raleigh ~ Smith Creek	NC0030759	3.000	1.872	70,814	20,752	50%	0	35,407	0	10,376	29
City of Raleigh ~ Neuse	NC0029033	60.000	46.106	687,373	422,673	50%	0	343,687	0	211,337	74
Raleigh ~ Ground Water	NA	NA	NA	NA	89,002	50%		NA		44,501	
City of Raleigh ~ Little Creek	NC0079316	2.200	0.805	26,660	4,388	50%	0	13,330	0	2,194	16
Town of Clayton	NC0025453	2.500	1.439	22,832	20,408	50%	0	11,416	0	10,204	89
Neuse Colony, (Aqua NC)	NC0064564	0.350	0.243	8,447	6,655	50%	0	4,224	0	3,328	79
Johnston County	NC0030716	9.500	4.610	71,476	50,391	50%	0	35,738		25,196	71
Town of Kenly	NC0064891	0.630	0.401	7,096	3,080	50%	0	3,548	0	1,540	43
Town of Farmville	NC0029572	3.500	2.003	42,211	7,481	50%	0	21,106	0	3,741	18
City of Wilson	NC0023906	14.000	9.497	157,886	65,558	50%	0	78,943	0	32,779	42
Duke Energy ~ Lee Facility	NC0003417	NA	0.041	0	34	70%	0	2,282	0	24	1
City of Goldsboro	NC0023949	14.200	9.807	199,822	68,193	70%	0	139,876	0	47,735	34
Town of LaGrange	NC0021644	0.750	0.642	8,447	8,734	70%	1,000	6,913	0	6,113	88
City of Kinston (Regional)	NC0024236	11.850	6.278	126,711	46,487	70%	0	88,697	0	32,541	37
Contentnea MSD	NC0032077	3.500	2.137	37,100	10,369	70%	0	25,970	0	7,258	28
Dupont-Kinston, Inc.	NC0003760	3.600	0.307	25,493	1,381	70%	0	17,845	0	967	5
City of New Bern	NC0025348	6.500	3.957	64,210	56,515	100%	0	64,210	0	56,515	88
MCAS Cherry Point	NC0003816	3.500	1.743	39,421	22,115	100%	0	39,421	0	22,115	56
City of Havelock	NC0021253	1.900	1.326	21,400	15,461	100%	0	21,400	0	15,461	72
Carolina Water Service, Inc.	NC0033111	0.600	0.321	11,263	9,510	100%	0	11,263	0	9,510	84
		177.880	108.734	2,084,335				1,169,673		593,145	51

# NRCA Total Nitrogen Projections

- 1997-98 Members' Permitted Flow = 177.820 million gallons/day
- 2017 Members' Permitted Flow = 177.880 million gallons/day
- Member investment in facility improvements (2013): \$430 million
- Assumptions: Increases in permitted flow will result in increase in total nitrogen discharge (based on current technology).

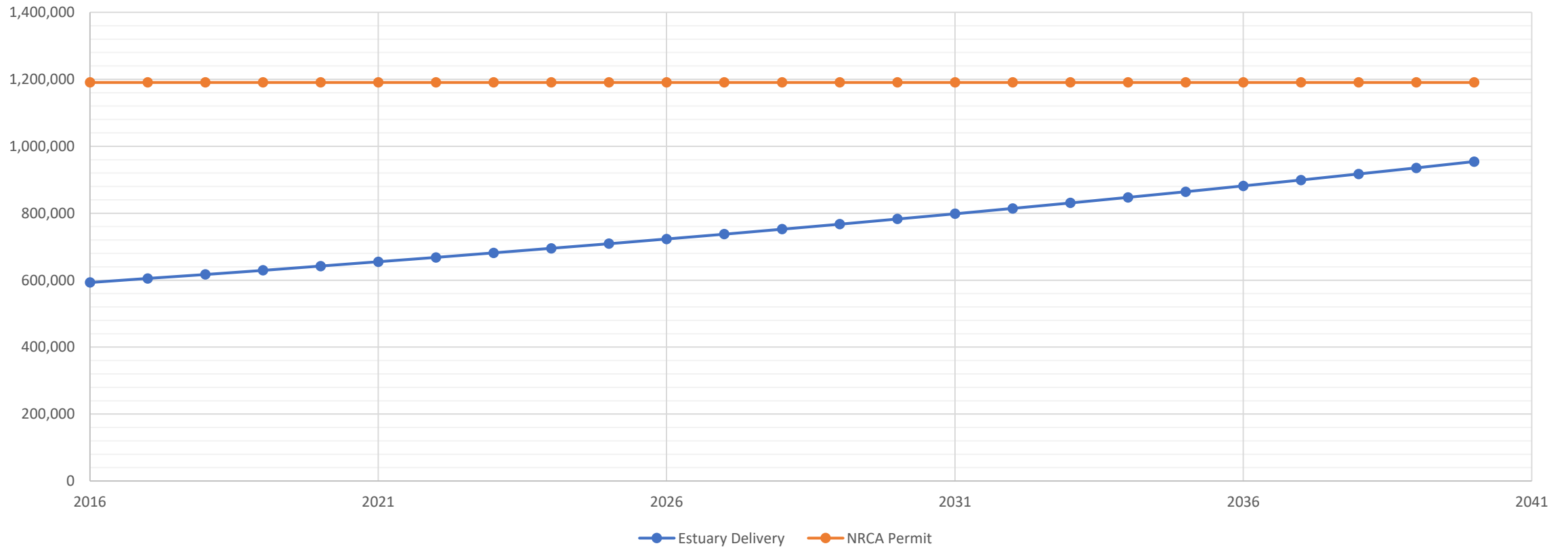
# Total Nitrogen Delivered vs. Average Daily Flow

Total Nitrogen Delivery to Neuse Estuary with Facility Average Daily Flow



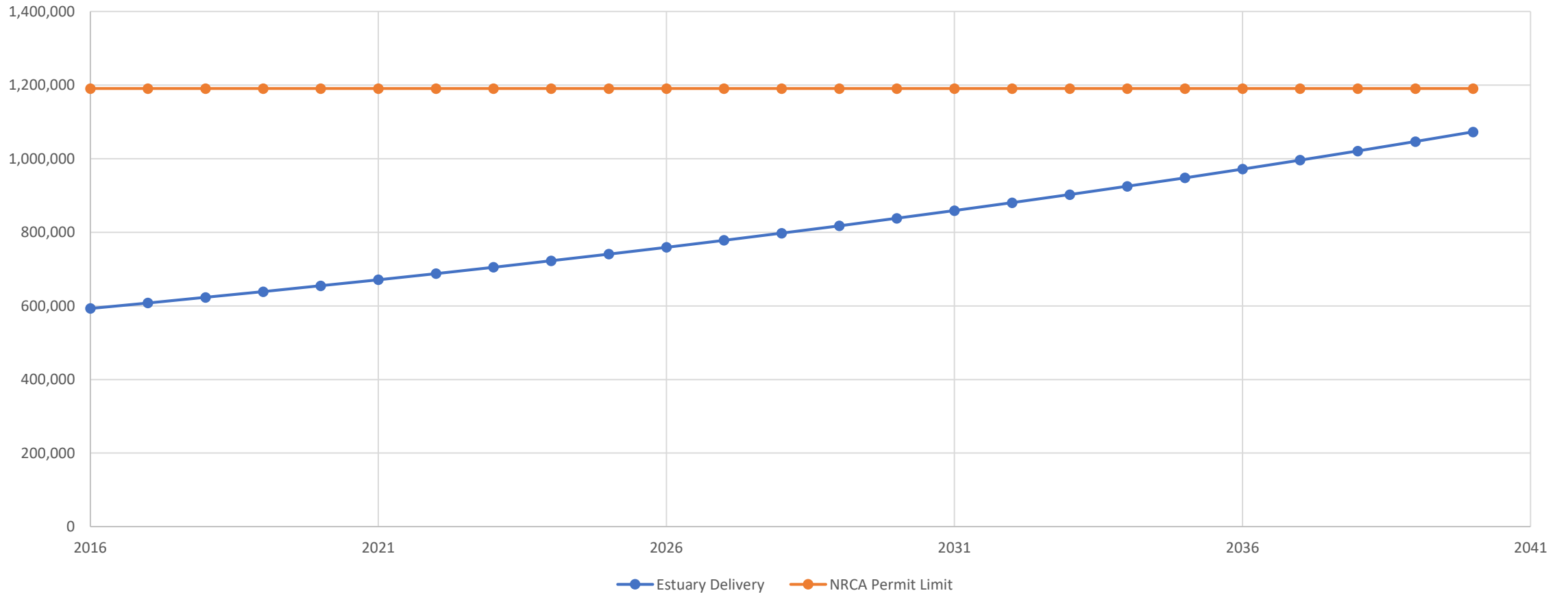
# 2% Growth in TN Delivery to Neuse Estuary

NRCA TN Delivery with 2% Growth in TN Discharge



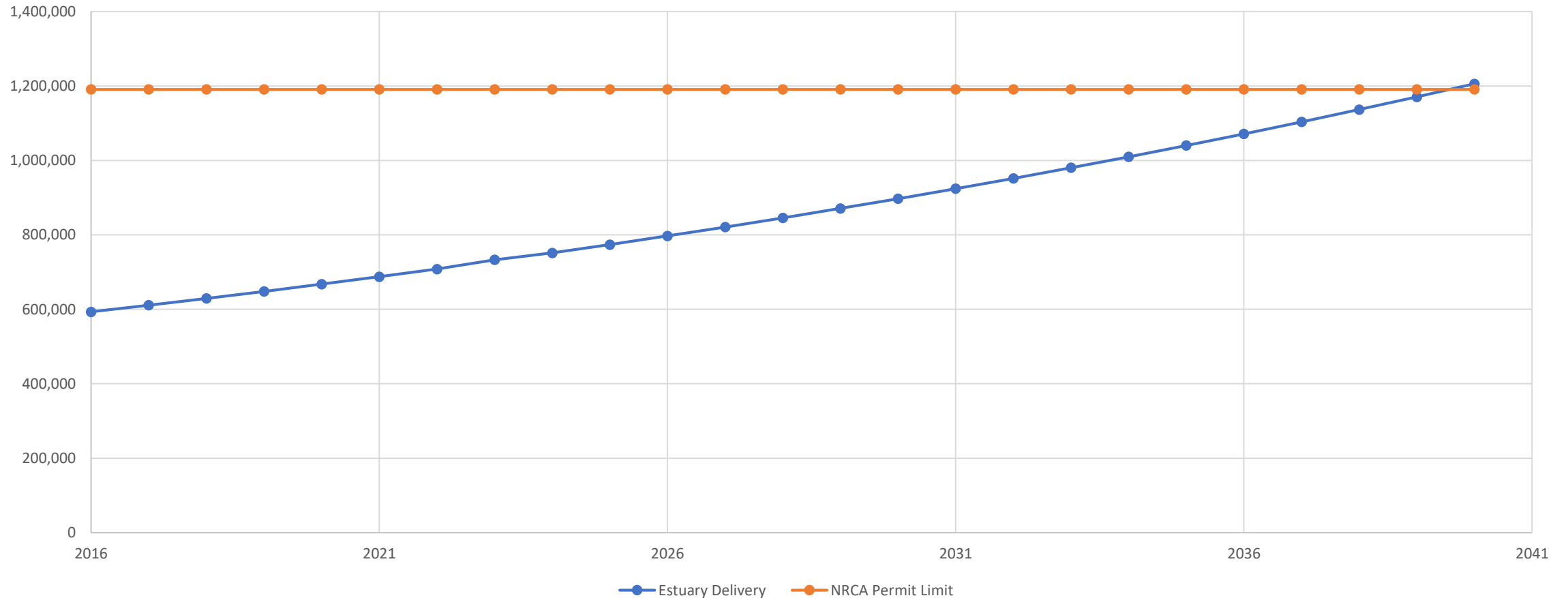
# 2.5% Growth in TN Delivery to Neuse Estuary

NRCA TN Delivery with 2.5% Growth in TN Discharge

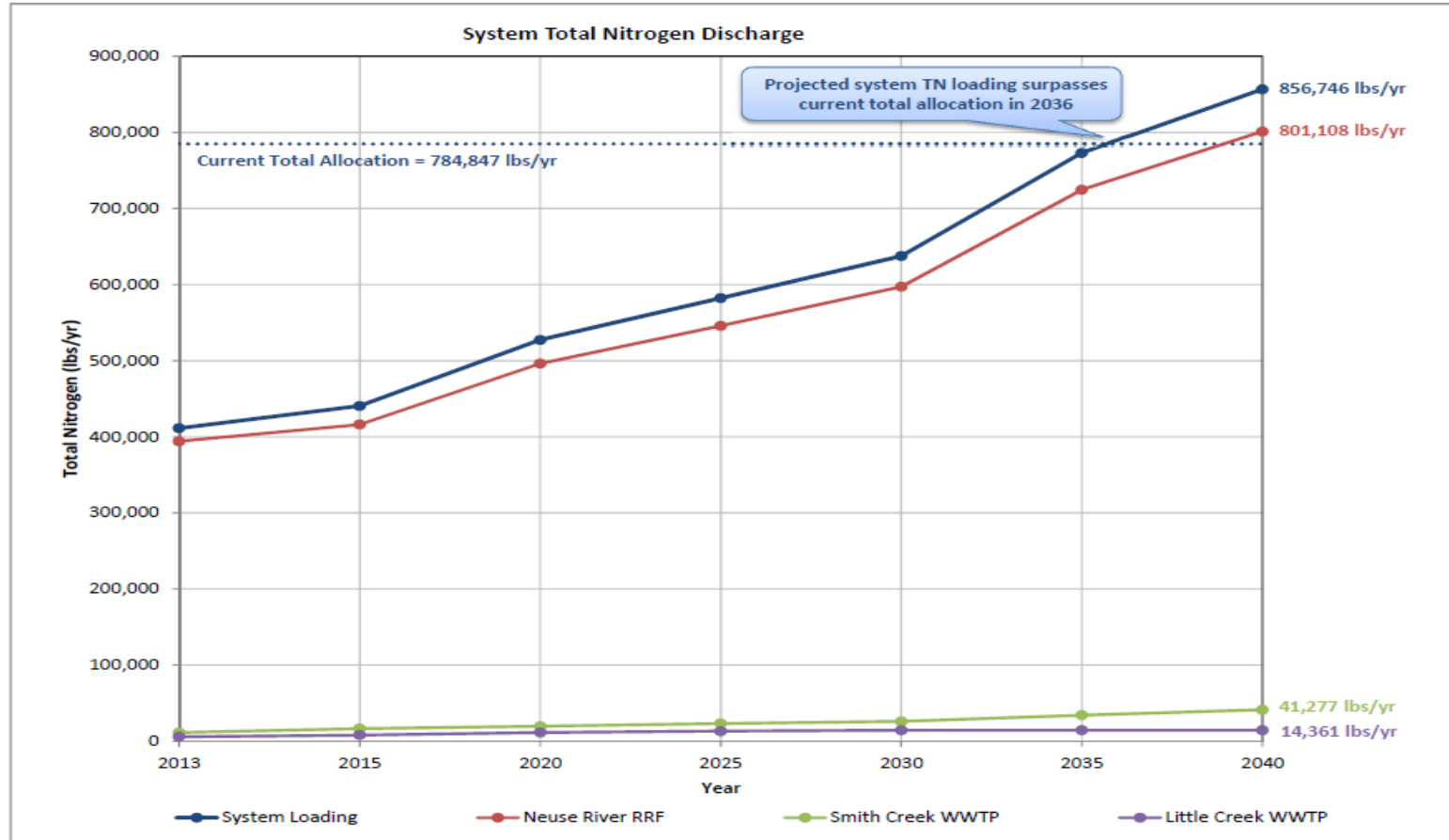


# 3% Growth in TN Delivery to Neuse Estuary

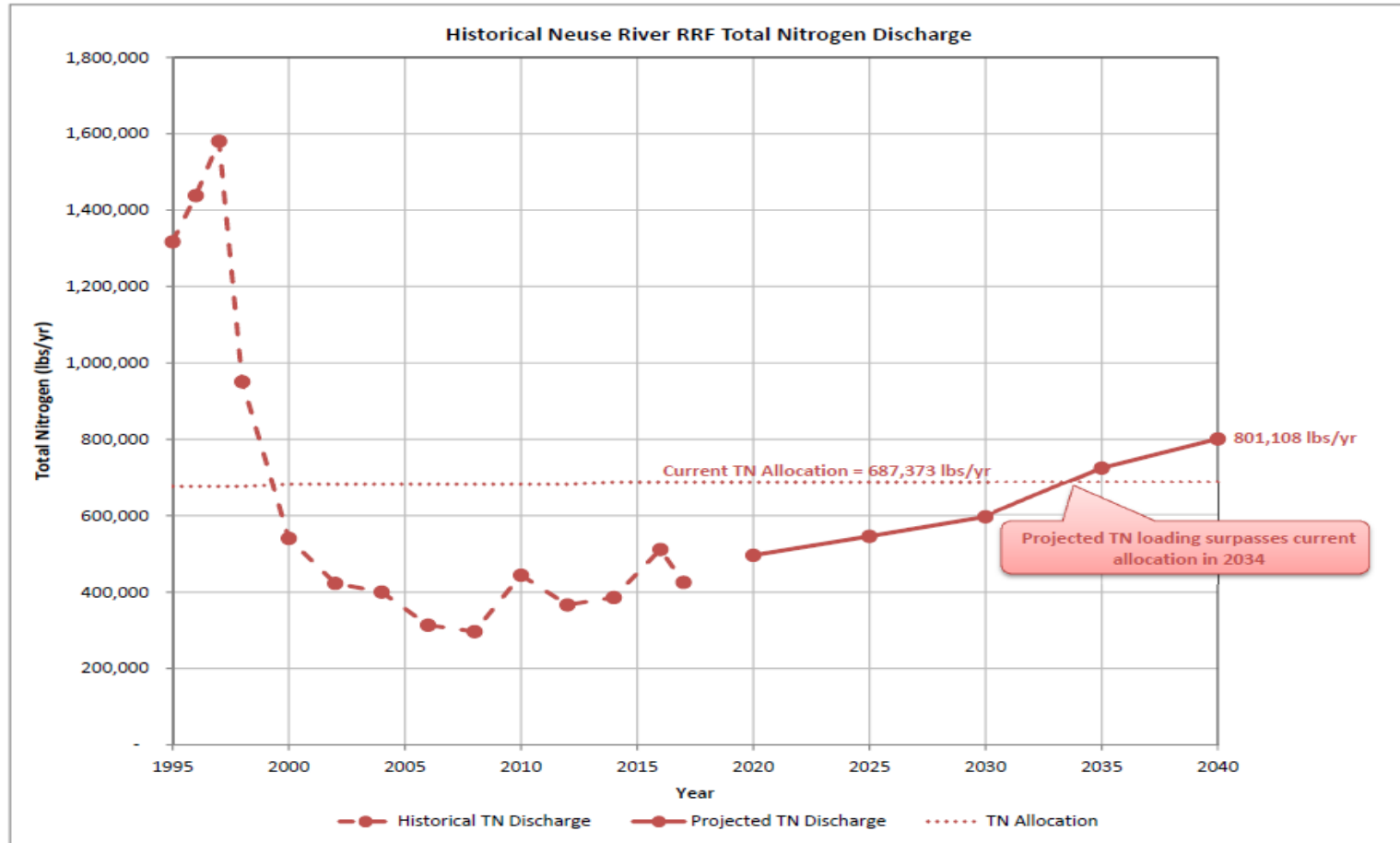
NRCA TN Delivery with 3% Increase in TN Discharge



# City of Raleigh's Projected TN Discharge



# Historical TN Discharge at Neuse RR Facility



# Variables/Unknowns

- Nutrient Criteria Development Plan
- Nutrient Scientific Advisory Board
- Nutrient Scientific Advisory Council
- New Criteria for Drinking Water Standards
- New Criteria for Health Recreational Ambient Water Quality
- Criteria Nutrient Sensitive Water
- Other items that may be on DWR's Radar

# Yellow Lance Habitat Areas

