



YADKIN/PEE DEE
RIVER BASIN ASSOCIATION

High Rock Lake Nutrient Management Planning

YPDRBA Meeting– Stakeholder Engagement – Phase II

Wastewater Rule Progress

10/03/2025

Overview of Discussion

- Wastewater Rule Progress
- Progress on other rules
- Apparent Schedule
- Next Steps and Discussion

Wastewater Rule Mechanics



- Individual allocations cannot be specified in rule
- Instead describe process for calculating individual allocations based on:
 - Annual delivered baseline loading
 - Reduction goals
- Calculations can be specified differently for different sizes and types of facilities:
 - Large Municipal
 - Medium Municipal/Domestic
 - Small Municipal/Domestic
 - Industrial (all sizes)
- Each discharger will be assigned an individual allocation that will be expressed as an annual loading limit in NPDES permits
- Group permit protocol standard w/ other NMS



Allocated Loads and Individual Load Limits

- Total PS Delivered Load x % reduction = “Total Waste Load Allocation (WLA)” for point sources
- Total WLA allocated to point sources according to various scenarios (discussed later) to get Individual Delivered loads (lbs/yr)
- Individual Delivered Load (lbs/yr) / Transport Factor = Individual Allocation and Annual Discharge Loading Limit
- Individual Allocation (lbs/yr) / Flow / 8.34 lb/gal / 365 days/yr = **Equivalent Effluent Concentration** Treatment Level at **Permitted Flow**
- Maximum allowable discharge concentration varies with actual flow, but the Individual Allocation does not

Loads and Limits

- Rule only specifies overall % reduction and for all dischargers combined
 - Indicates proportion of load allocated to sectors of point sources
- Total allowable load will be 100% apportioned among existing facilities
 - i.e. no reserve maintained for growth
- Room for growth is expected due to available treatment capacity and future post-baseline treatment improvements

Analysis TAG Proposed Reduction



Wastewater TAG Proposal:

- Large Municipal = 6.0 mgN/L, 0.75 mgP/L
- Medium Municipal /domestic= 10.0 mgN/L, 1.0 mgP/L
- Lg/Md cut off at 1 MGD for TP and 5 MGD for TN
- Small Municipal/domestic (<0.1 mgd) = (no proposal)
- Industrial = (no proposal)

Additional DWR Assumptions:

- Small Municipal = 12 mgN/L, 2.0 mgP/L
- Industrial = 50% P Reduction, 25% N Reduction

Total Point Source Reductions Achieved based on 2005-2010 loading Analysis:

- 19% TN Reduction
- 54% TP Reduction



Allocation Scenarios

- Original Wastewater TAG Scenario considered different sizes of facilities differently
 - Considered large facilities for TN $\geq$ 5 MGD
 - Considered large facilities for TP $\geq$ 1 MGD
 - No Proposal for facilities <1 MGD (although DEQ indicated they would receive an allocation)
- Now have more detailed data to analyze facilities' loading and allocation scenarios
- Multiple scenarios being considered
 - Baseline – all facilities allocated similarly based on Equivalent Effluent Concentration (EEC)
 - Small facilities given an Allocation using a different EEC
 - Medium facilities given an Allocation using a different EEC
 - Small and Medium categories defined in different ways

1. Baseline Scenario

		1. Scenario Baseline	
Facility Sector Size	Category Description	Allocated EOP Load = Same Equivalent Effluent Conc by Size Sector	
		TN	TP
Large	Sector load	2,377,028	333,916
Medium	Sector load	24,665	3,465
Small	Sector load	11,975	1,682
		2,413,668	339,063
Large	% Load/Sector	98.5%	98.5%
Medium	% Load/Sector	1.0%	1.0%
Small	% Load/Sector	0.5%	0.5%
Large	Eq Eff Conc.	5.88	0.83
Medium	Eq Eff Conc.	5.88	0.83
Small	Eq Eff Conc.	5.88	0.83
Flow -Large/Med./Small		132.8/1.38/0.67 mgd	

Assumptions:

- Total Allocated Nutrient Load proportion evenly according to permitted flow using the same Equivalent Effluent Concentration (EEC) for nutrients
- All facilities treated the same

2. Small <0.1 Scenario

		1. Scenario Baseline		2. Small <0.1 Scenario	
Facility Sector Size	Category Description	Allocated EOP Load = Same Equivalent Effluent Conc by Size Sector		Allocated - Small @12/2 - Others Equal	
		TN	TP	TN	TP
Large	Sector load	2,377,028	333,916	2,366,517	331,895
Medium	Sector load	24,665	3,465	24,556	3,444
Small	Sector load	11,975	1,682	24,438	4,073
		2,413,668	339,063	2,415,512	339,411
Large	% Load/Sector	98.5%	98.5%	98.0%	97.8%
Medium	% Load/Sector	1.0%	1.0%	1.0%	1.0%
Small	% Load/Sector	0.5%	0.5%	1.0%	1.2%
Large	Eq Eff Conc.	5.88	0.83	5.85	0.82
Medium	Eq Eff Conc.	5.88	0.83	5.85	0.82
Small	Eq Eff Conc.	5.88	0.83	12.00	2.00
Flow -Large/Med./Small		132.8/1.38/0.67 mgd		132.8/1.38/0.67 mgd	

Assumptions:

- Permitted flow for small facilities calculated based on permitted flow and EEC of 12 mg/L TN and 2 mg/L TP
- Remaining load allocated based on flow proportion

3. Medium - 1 mgd Scenario

		1. Scenario Baseline		3. Medium - 1 mgd Scenario	
Facility Sector Size	Category Description	Allocated EOP Load = Same Equivalent Effluent Conc by Size Sector		Allocated 10/1 Medium (1mgd for TN/TP) +12/2 Small	
		TN	TP	TN	TP
Large	Sector load	2,377,028	333,916	2,349,134	331,086
Medium	Sector load	24,665	3,465	41,948	4,195
Small	Sector load	11,975	1,682	24,438	4,073
		2,413,668	339,063	2,415,520	339,354
Large	% Load/Sector	98.5%	98.5%	97.3%	97.6%
Medium	% Load/Sector	1.0%	1.0%	1.7%	1.2%
Small	% Load/Sector	0.5%	0.5%	1.0%	1.2%
Large	Eq Eff Conc.	5.88	0.83	5.81	0.82
Medium	Eq Eff Conc.	5.88	0.83	10	1
Small	Eq Eff Conc.	5.88	0.83	12.00	2.00
Flow -Large/Med./Small		132.8/1.38/0.67 mgd		132.8/1.38/0.67 mgd	

Assumptions:

- Permitted load for small facilities calculated based on permitted flow and EEC of 12 mg/L TN and 2 mg/L TP
- Permitted load for medium facilities between 0.1 mgd and 0.99 mgd calculated based on permitted flow and EEC of 10 mg/L TN and 1mg/L TP
- Remaining load allocated based on flow proportion

4. TAG Scenario

		1. Scenario Baseline		4. TAG Scenario	
Facility Sector Size	Category Description	Allocated EOP Load = Same Equivalent Effluent Conc by Size Sector		Allocated 10/1 Medium (5 mgd cutoff TN/1 mgd TP) +12/2 Small	
		TN	TP	TN	TP
Large	Sector load	2,377,028	333,916	2,043,131	331,086
Medium	Sector load	24,665	3,465	355,490	4,195
Small	Sector load	11,975	1,682	24,438	4,073
		2,413,668	339,063	2,423,059	339,354
Large	% Load/Sector	98.5%	98.5%	84.3%	97.6%
Medium	% Load/Sector	1.0%	1.0%	14.7%	1.2%
Small	% Load/Sector	0.5%	0.5%	1.0%	1.2%
Large	Eq Eff Conc.	5.88	0.83	5.48	0.82
Medium	Eq Eff Conc.	5.88	0.83	10	1
Small	Eq Eff Conc.	5.88	0.83	12.00	2.00
Flow -Large/Med./Small		132.8/1.38/0.67 mgd		10.3 mgd moves from large to medium for TN	

Assumptions:

- Permitted flow for small facilities <0.1 mgd calculated based on permitted flow and EEC of 12 mg/LTN and 2 mg/L TP
- Permitted flow for medium facilities calculated using TN 10 mg/L and TP of 1 mg/L with Medium defined differently per Nutrient
- Remaining load allocated based on flow proportion

5. Small <0.5 mgd Scenario

Similar to Neuse Strategy

		1. Scenario Baseline		5. Small <0.5 mgd Scenario	
Facility Sector Size	Category Description	Allocated EOP Load = Same Equivalent Effluent Conc by Size Sector		Allocated - Small @12/2 with Small Sector up to 0.5 mgd) - Others Equal	
		TN	TP	TN	TP
Large	Sector load	2,377,028	333,916	2,340,645	327,043
Medium	Sector load	24,665	3,465		
Small	Sector load	11,975	1,682	74,775	12,463
		2,413,668	339,063	2,415,420	339,506
Large	% Load/Sector	98.5%	98.5%	96.9%	96.3%
Medium	% Load/Sector	1.0%	1.0%		
Small	% Load/Sector	0.5%	0.5%	3.1%	3.7%
Large	Eq Eff Conc.	5.88	0.83	5.79	0.81
Medium	Eq Eff Conc.	5.88	0.83		
Small	Eq Eff Conc.	5.88	0.83	12.00	2.00
Flow -Large/Med./Small		132.8/1.38/0.67 mgd		1.38 mgd moves to small and no med/large distiction	

Assumptions:

- Permitted flow for small facilities <0.5 mgd calculated based on permitted flow and EEC of 12 mg/LTN and 2 mg/L TP
- Remaining load allocated based on flow proportion

Additional Rule Discussion

- Group permit language similar to other rules and will be reviewed in future meetings
- Small discharger group will be managed as a group
 - Examining whether group exceeds collective allocation – which hasn't happened in other strategies
 - Facilities looking to expand will be capped at previous permitted flow and load based on adopted strategy (right now based on TN 12/TP 2 mg/L)
 - If flow is connected to another facilities, allocation based on adopted strategy (right now based on TN 12/TP 2 mg/L) goes to the connecting facility

Implications of Scenarios for YPDRBA Members

Municipal Wastewater Facilities			Permitted Flow - MGD	Last 10 Years of Data		2. Small <0.1 MGD		5. Small <0.5 mgd	
Permit	Owner	Facility		NPQ Data - EOP - 2014-2023		Allocated - Small @12/2 - Others Equal		Allocated - Small @12/2 with Small Sector up to 0.5 mgd) - Others Equal	
			2024	TN (lb/yr)	TP (lb/yr)	TN (lb/yr)	TP (lb/yr)	TN (lb/yr)	TP (lb/yr)
NC0037834	City of Winston-Salem	Archie Elledge WWTP	30.00	859,230	125,068	534,605	74,976	528,760	73,880
NC0050342	City of Winston-Salem	Muddy Creek WWTP	21.00	1,228,786	182,352	374,223	52,483	370,132	51,716
NC0023884	City of Salisbury	Salisbury-Rowan WWTP	20.00	304,230	47,410	356,403	49,984	352,507	49,254
NC0024228	City of High Point	Westside WWTP	10.00	74,562	5,169	178,202	24,992	176,253	24,627
NC0021717	Town of Wilkesboro	Cub Creek WWTP	8.00	229,418	103,721	142,561	19,994	141,003	19,701
NC0020591	City of Statesville	Third Creek WWTP	8.00	19,608	10,593	142,561	19,994	141,003	19,701
NC0021121	City of Mount Airy	Mount Airy WWTP	7.00	56,509	10,180	124,741	17,494	123,377	17,239
NC0055786	City of Lexington	Lexington Regional WWTP	6.50	113,336	6,118	115,831	16,245	114,565	16,007
NC0031836	City of Statesville	Fourth Creek WWTP	6.00	50,252	8,092	106,921	14,995	105,752	14,776
NC0024112	City of Thomasville	Hamby Creek WWTP	6.00	40,010	4,855	106,921	14,995	105,752	14,776
NC0020338	Town of Yadkinville	Yadkinville WWTP	2.50	30,267	5,624	44,550	6,248	44,063	6,157
NC0020761	Town of North Wilkesboro	Thurman Street WWTP	2.00	25,839	2,792	35,640	4,998	35,251	4,925
NC0026646	Town of Pilot Mountain	Pilot Mountain WWTP	1.50	5,351	943	26,730	3,749	26,438	3,694
NC0020567	Yadkin Valley Sewer Authority, Inc.	Yadkin Valley Sewer Authority, Inc.	1.80	17,223	957	32,076	4,499	31,726	4,433
NC0024872	Davie County Water System	Cooleemee WWTP	1.50	17,269	2,604	26,730	3,749	26,438	3,694
NC0021491	Town of Mocksville	Dutchman's Creek WWTP	1.00	8,748	1,787	17,820	2,499	17,625	2,463
NC0021326	Town of Dobson	Dobson WWTP	0.35	2,461	819	6,237	875	12,785	2,131
NC0049867	Town of Cleveland	Cleveland WWTP	0.27	10,535	1,735	4,811	675	9,863	1,644
NC0087033	Town of Harmony	Harmony WWTP	0.25	1,102	155	4,455	625	9,132	1,522
NC0020931	Town of Boonville	Boonville WWTP	0.20	2,766	587	3,564	500	7,306	1,218

	Not Member of YPDRBA
	Above Proposed Loading Limit
	>60% of Proposed Loading Limit
	<60% of Proposed Loading Limit

Implications of Scenarios for YPDRBA Members

Municipal Wastewater Facilities			Permitted Flow - MGD	Last 10 Years of Data		4. TAG Scenario		5. Small <0.5 mgd	
				NPQ Data - EOP - 2014-2023		Allocated 10/1 Medium (5 mgd cutoff TN/1 mgd TP) +12/2 Small		Allocated - Small @12/2 with Small Sector up to 0.5 mgd) -Others Equal	
Permit	Owner	Facility	2024	TN (lb/yr)	TP (lb/yr)	TN (lb/yr)	TP (lb/yr)	TN (lb/yr)	TP (lb/yr)
NC0037834	City of Winston-Salem	Archie Elledge WWTP	30.00	859,230	125,068	500,359	74,794	528,760	73,880
NC0050342	City of Winston-Salem	Muddy Creek WWTP	21.00	1,228,786	182,352	350,251	52,355	370,132	51,716
NC0023884	City of Salisbury	Salisbury-Rowan WWTP	20.00	304,230	47,410	333,572	49,862	352,507	49,254
NC0024228	City of High Point	Westside WWTP	10.00	74,562	5,169	166,786	24,931	176,253	24,627
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NC0020591	City of Statesville	Third Creek WWTP	8.00	19,608	10,593	133,429	19,945	141,003	19,701
NC0021121	City of Mount Airy	Mount Airy WWTP	7.00	56,509	10,180	116,750	17,452	123,377	17,239
NC0055786	City of Lexington	Lexington Regional WWTP	6.50	113,336	6,118	108,411	16,205	114,565	16,007
NC0031836	City of Statesville	Fourth Creek WWTP	6.00	50,252	8,092	100,072	14,959	105,752	14,776
NC0024112	City of Thomasville	Hamby Creek WWTP	6.00	40,010	4,855	100,072	14,959	105,752	14,776
NC0020338	Town of Yadkinville	Yadkinville WWTP	2.50	30,267	5,624	76,103	6,233	44,063	6,157
NC0020761	Town of North Wilkesboro	Thurman Street WWTP	2.00	25,839	2,792	60,882	4,986	35,251	4,925
NC0026646	Town of Pilot Mountain	Pilot Mountain WWTP	1.50	5,351	943	45,662	3,740	26,438	3,694
NC0020567	Yadkin Valley Sewer Authority, Inc.	Yadkin Valley Sewer Authority, Inc.	1.80	17,223	957	54,794	4,488	31,726	4,433
NC0024872	Davie County Water System	Cooleemee WWTP	1.50	17,269	2,604	45,662	3,740	26,438	3,694
NC0021491	Town of Mocksville	Dutchman's Creek WWTP	1.00	8,748	1,787	30,441	2,493	17,625	2,463
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NC0049867	Town of Cleveland	Cleveland WWTP	0.27	10,535	1,735	8,219	822	9,863	1,644
NC0087033	Town of Harmony	Harmony WWTP	0.25	1,102	155	7,610	761	9,132	1,522
NC0020931	Town of Boonville	Boonville WWTP	0.20	2,766	587	6,088	609	7,306	1,218

	Not Member of YPDRBA
	Above Proposed Loading Limit
	>60% of Proposed Loading Limit
	<60% of Proposed Loading Limit

Next Steps for Wastewater Rule

- Input from Meeting today
- Next Wastewater TAG Meeting on 10/8/2025
- Recommendation considered in Draft Rules
- Wastewater and Other draft rules evaluated by Steering Committee

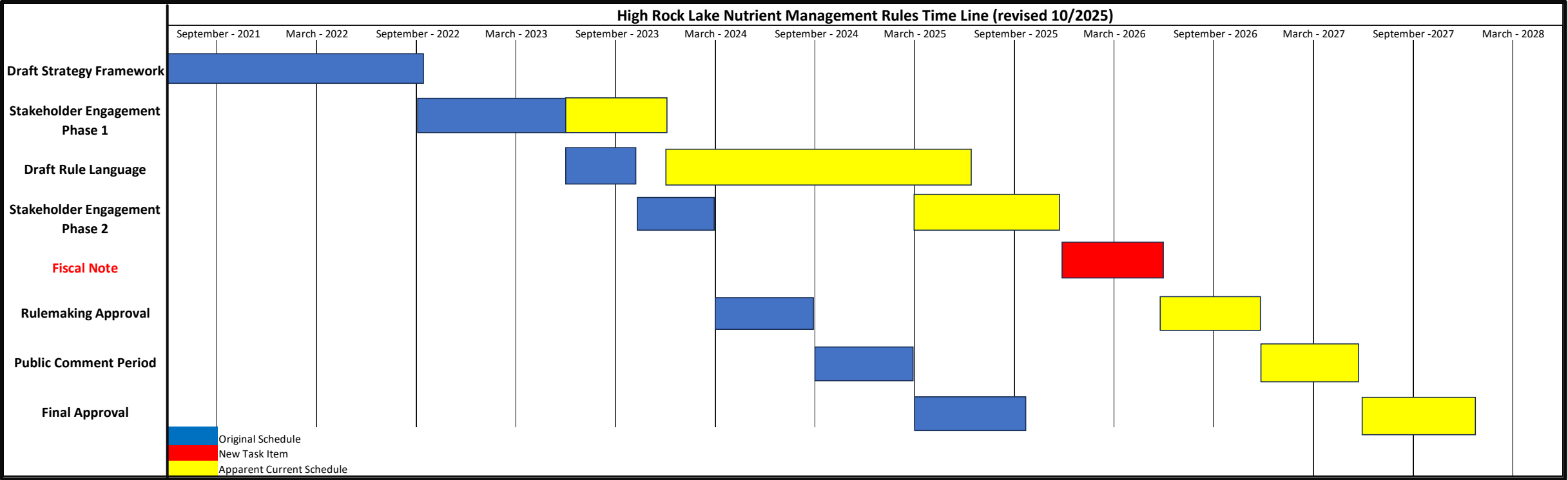
HRL Nutrient Management Rule Progress

- First Steering Committee Meeting in 18 months held on May 29 (via Zoom)
- Three draft rule packages were presented
 - 15A NCAC 02B .0760 (DRAFT) - HIGH ROCK LAKE NUTRIENT STRATEGY: **PURPOSE AND SCOPE**
 - 15A NCAC 02B .0762 (DRAFT) - HIGH ROCK LAKE NUTRIENT MANAGEMENT STRATEGY: LOADING REDUCTIONS FROM **EXISTING MANAGED LANDS**
 - 15NCAC 02B .0764 (DRAFT) - HIGH ROCK LAKE NUTRIENT STRATEGY: PROTECTION OF EXISTING **RIPARIAN BUFFERS**

Future Meetings in Phase II

- Review additional rule drafts:
 - Cattle Management
 - Land Application of Wastes
 - Agriculture Reporting
 - Wastewater
 - New Development Stormwater
- Hold additional stakeholder meetings (TAG, SC, All Parties)
- Fiscal Note (outside data welcome)

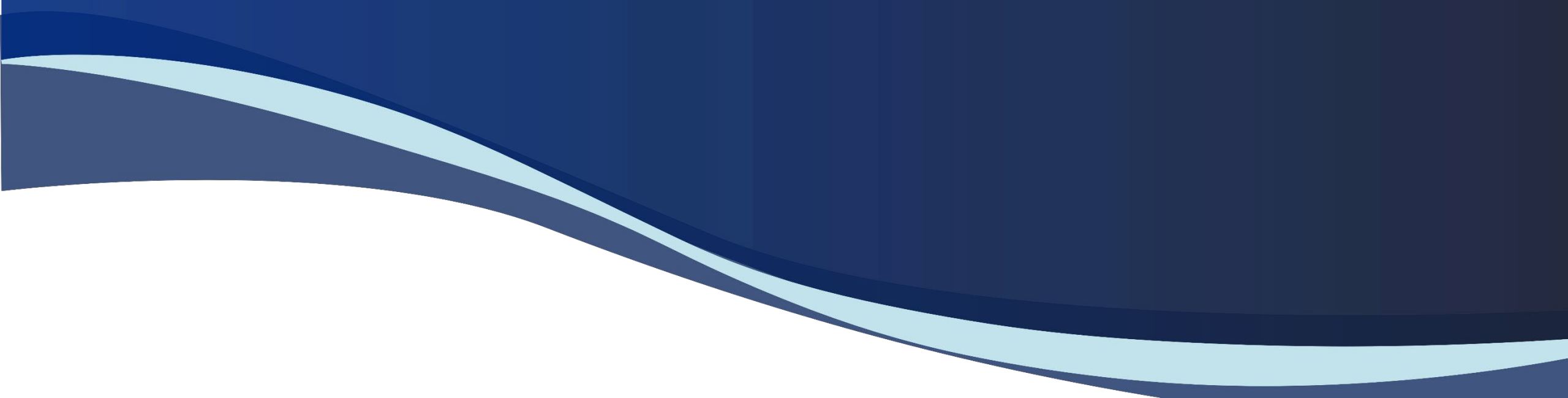
Nutrient Management Strategy Rule-Making Schedule



Next Steps for YPDRBA Members

- Representatives continue to meet in Steering Committee and TAG to review drafts
 - Provide information to association and feedback to DWR
- Association members begin to compile information for input to fiscal note
 - Available master planning or preliminary engineering with cost estimates for upgrades
 - Updated cost curves for smaller facilities
- Begin organizational efforts for a compliance association
 - Legal and technical support
 - Pursue nonprofit status

Questions

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