

Milestone or Measure?		IF Measure, which type?		Performance Measure or Milestone	Description	Performance Targets and Actuals														Primary Responsibility				
Milestone [1]	Measure [2]	Quarterly Cumulative	Cumulative Across Years			Past Actuals								FY-19 Q1		FY-19 Q2		FY-19 Q3		FY-19 Q4		Point of Contact	Responsible SES	
						FY-10	FY-11	FY-12	FY-13	FY-14	FY-15	FY-16	FY-17	FY-18	Target	Actual	Target	Actual	Target	Actual	Target			Actual
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of peer reviewed publications funded by the Office of Weather and Air Quality	Communicate critical knowledge obtained through research evaluated in testbeds, implemented in numerical models and obtained through partnership projects on high-impact weather events with U.S. agencies and the broader scientific community through peer-reviewed publications.	-	n/a	45	15	12	12	31	34	23	-	-	-	-	-	-	20	31	Bill Lapenta	Bill Lapenta
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Percentage of projects that include a Numerical Weather Model change or test toward improving operational models	The number of improvements to research and operational models that have resulted from research. Make changes to the physical parameterization or data assimilation processes of experimental forecast models and address the uncertainties in numerical weather models. This measure changed to percentage of projects for 2019	2	4	3	3	4	7	3	3	13	-	-	-	-	-	-	15	54	Matt Mahalik	Bill Lapenta
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Percentage of projects that increase Readiness Level at least one level	JTTI, USWRP, Infrasonud	-	-	-	-	-	67	100	31	51	-	-	-	-	-	-	55	55	Matt Mahalik	Bill Lapenta
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Percentage of Fostered projects - Completed projects with formalized follow-on path	Projects included in this measure include Project transitioned to operations, moved forward with same or different program funded, is deemed complete and knowledge used for future research planning. New measure starting FY19.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	54	Matt Mahalik	Bill Lapenta
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Annual number of research and development results that reached Readiness Level 8	The level prior to transition to operations. New measure for 2019.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	9	Matt Mahalik	Bill Lapenta
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Annual number of research and development results transferred into operations that will lead to improved weather forecasts and warnings	Evaluation of new scientific findings or development of forecaster tools for potential use in operations that will lead to improved weather forecasts and warnings. Those project reaching RL9 are included in this measure. This measure was expanded in FY19 to include all research projects, not just testbed related	-	10	24	6	1	12	3	4	5	-	-	-	-	-	-	10	5	Matt Mahalik	Bill Lapenta
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Number of forecast and mission improvements, based on The Weather Research and Forecasting Innovation Act of 2017, to weather applications at operational US weather services and in the US																	106	106		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Percentage of transition projects with signed Transition Plans which can be used to improve the efficiency of transitioning NOAA R&D to applications	Includes all JTTI and USWRP projects.	-	-	-	-	-	0	50	100	25	-	-	-	-	-	-	75	63	Matt Mahalik	Bill Lapenta
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Percent of Projects that Include Social/Behavioral Science Research	This measure tracks the integration of social/behavioral science research and related activities into OWAQ's research portfolio. This is a new performance measure starting in FY2016.	-	-	-	-	-	-	18	13	19	-	-	-	-	-	-	15	19	Gina Eosco	Bill Lapenta
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number of research projects completing a transition in lifecycle phase	This measure tracks progression through OAR lifecycle phases (see R2X section)	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	11	24	Matt Mahalik	Bill Lapenta

FY 2019 OWAQ Annual Operating Plan

Performance Measure	Description	Mapping					Past Year Actuals		Current Year Reporting								Point of Contact
		DOC SP	NOAA AOP	APPR	CJ	OAR Strategic Goal	FY-18	FY-19	FY-20 Q1		FY-20 Q2		FY-20 Q3		FY-20 Q4		
									Target	Actual	Target	Actual	Target	Actual	Target	Actual	
Annual number of NOAA peer reviewed publications related to environmental understanding and prediction	The annual number of peer reviewed publications is an indicator of productivity and relevance and is tracked using on-line resources. Peer review is one of the important procedures used to ensure that the quality of published information meets the standards of the scientific and technical community.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Drive Innovative Science	23	31%							30	48	Matt Mahalik
Percentage of projects that increase Readiness Level at least one level	Percentage of all OWAQ-supported projects active at any time during FY20 (excluding projects that have no progress report due before Sept 30, 2020) that advance at least one RL during FY20, as reported by PIs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drive Innovative Science	51	55							50	50	Matt Mahalik
Annual number of projects that produce results transitioned into operations	Number of project outputs supported in an operational environment and accessible by end users	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Make Forecasts Better	5	5							5	4	Matt Mahalik
R2A Index: Annual number of OAR R&D products transitioned to a new stage(s) (development, demonstration, or application).	The measure captures the count of significant and discrete OAR research and development products that have transitioned to development, demonstration, or an application. Products include transitions occurring within OAR and applying group(s) outside of OAR. This includes research, development, and demonstration performed and supported by OAR as well as utilization of OAR R&D products by external parties	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Drive Innovative Science	19	24	1	3	9	7	21	8	28	26	Matt Mahalik
Number of forecast and mission improvements, based on The Weather Research and Forecasting Innovation Act of 2017, to weather applications at operational US weather services and in the US weather commercial sector.	The measure captures the count of significant and discrete NOAA research and development products that have been deemed ready for delivery for ultimate transition to application at operational U.S. weather services and in the U.S. weather commercial sector (i.e., RL8). In addition, these weather products support NOAA contributions to the Weather Research and Forecasting Innovation Act of 2017.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Make Forecasts Better	n/a	10							10	20	Matt Mahalik
Percentage of projects with transition plans delivered to NWS and OAR leadership for final approval	The percentage of all active transition projects that have transition plans that have been received, reviewed, and approved by OWAQ and delivered by OWAQ to NWS and OAR for signatures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Make Forecasts Better	25	63							60	60	Matt Mahalik
Percent of Projects that Include Social/Behavioral Science Research	This measure tracks the integration of social/behavioral science research and related activities into OWAQ's research portfolio.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drive Innovative Science	19	19							15	15	Gina Eosco
Percentage of projects that work toward a new or improved numerical weather model component that contributes to the Unified Forecast System (UFS)	Percentage of all OWAQ projects that include work toward improving an existing or developing a new numerical weather model component within the UFS framework and intends to transition it into operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Make Forecasts Better	n/a	n/a							10	21	Matt Mahalik
Annual number of conference presentations, seminars, webinars, and other informational outreach activities	This measure tracks the engagement and outreach of OWAQ-sponsored researchers to the science community beyond peer-reviewed publications through tracking science communication and outreach opportunities such as conference presentations and seminars.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drive Innovative Science	n/a	n/a							80	153	Matt Mahalik
Annual number of closed and completed JTTI grants	Number of individual JTTI grants that have completed their projects, used their allotted funding, and closed their grant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drive Innovative Science	n/a	n/a							5	20	Chandra Kondragunta
Annual number of Weather Act reports submitted to NOAA HQ for clearance	Number of individual Weather Act reports approved at the Line Office level and submitted to NOAA HQ for final clearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drive Innovative Science	n/a	n/a							3	0	Tamara Battle

FY 2020 WPO Annual Operating Plan

Performance Measure	Description	Mapping					Past Year Actuals			Current Year Reporting								Point of Contact
		DOC SP	NOAA AOP	APPR	CJ	OAR Strategic Goal	FY-18	FY-19	FY-20	FY-21 Q1		FY-21 Q2		FY-21 Q3		FY-21 Q4		
										Target	Actual	Target	Actual	Target	Actual	Target	Actual	
Annual number of NOAA peer reviewed publications related to environmental understanding and prediction	The annual number of peer reviewed publications is an indicator of productivity and relevance and is tracked using on-line resources. Peer review is one of the important procedures used to ensure that the quality of published information meets the standards of the scientific and technical community.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Drive Innovative Science	23	31%	45							30	48	Matt Mahalik
Percentage of projects that increase Readiness Level at least one level	Percentage of all eligible WPO-supported projects active at any time during FY21 (excluding projects that have no progress report due before Sept 30, 2021) that advance at least one RL during FY21, as reported by PIs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drive Innovative Science	51	55	47							50	50	Matt Mahalik
Annual number of projects that produce results transitioned into operations	Number of project outputs supported in an operational environment and accessible by end users (i.e., RL9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Make Forecasts Better	5	5	4							5	14	Matt Mahalik
R2A Index: Annual number of OAR R&D products transitioned to a new stage(s) (development, demonstration, or application).	The measure captures the count of significant and discrete OAR research and development products that have transitioned to development, demonstration, or an application. Products include transitions occurring within OAR and applying group(s) outside of OAR. This includes research, development, and demonstration performed and supported by OAR as well as utilization of OAR R&D products by external parties	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Drive Innovative Science	19	24	18	4	6	4	12	11	22	14	23	Matt Mahalik
Number of forecast and mission improvements, based on The Weather Research and Forecasting Innovation Act of 2017, to weather applications at operational US weather services and in the US weather commercial sector.	The measure captures the count of significant and discrete NOAA research and development products that have been deemed ready for delivery for ultimate transition to application at operational U.S. weather services and in the U.S. weather commercial sector (i.e., RL8). In addition, these weather products support NOAA contributions to the Weather Research and Forecasting Innovation Act of 2017.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Make Forecasts Better	n/a	10	18							10	10	Matt Mahalik
Percentage of projects with transition plans delivered to NWS and OAR leadership for final approval	The percentage of all active transition projects that have transition plans that have been received, reviewed, and approved by WPO and delivered by WPO to NWS and OAR for signatures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Make Forecasts Better	25	63	52							50	61	Matt Mahalik
Percent of Projects that Include Social/Behavioral Science Research	This measure tracks the integration of social/behavioral science research and related activities into WPO's research portfolio.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drive Innovative Science	19	19	15							15	19	Gina Eosco
Percentage of projects that work toward a new or improved numerical weather model component that contributes to the Unified Forecast System (UFS)	Percentage of all WPO projects that include work toward improving an existing or developing a new numerical weather model component within the UFS framework and intends to transition it into operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Make Forecasts Better	n/a	n/a	21							10	27	Matt Mahalik
Annual number of conference presentations, seminars, webinars, and other informational outreach activities	This measure tracks the engagement and outreach of WPO-sponsored researchers to the science community beyond peer-reviewed publications through tracking science communication and outreach opportunities such as conference presentations and seminars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drive Innovative Science	n/a	n/a	141							80	133	Matt Mahalik
Percentage of R&D awards that include funded PIs/participants from at least two collaborating institutions	This measure tracks WPO's ability to support collaborative research projects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drive Innovative Science	n/a	n/a	n/a							40	50	Matt Mahalik
Percent of annual WPO budget executed	This measure tracks WPO's execution of appropriated funds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drive Innovative Science	n/a	n/a	n/a							90	95	Melissa Pratt-Zossoungbo

FY 2021 WPO Annual Operating Plan

Performance Measure	Description	Mapping						Past Year Actuals				Current Year Reporting						Point of Contact	
		DOC SP	NOAA AOP	APPR	CJ	OAR Strategic Goal	OAR Implementation Plan Outcome	FY-22 Q1		FY-22 Q2		FY-22 Q4		FY-22					
								Target	Actual	Target	Actual	Target	Actual	Overall Year Performance rating					
Annual number of NOAA peer reviewed publications related to environmental understanding and prediction	The annual number of peer reviewed publications is an indicator of productivity and relevance and is tracked using on-line resources. Peer review is one of the important procedures used to ensure that the quality of published information meets the standards of the scientific and technical community.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			23	31	45	48					35	46	Exceeded Target Performance	Matt Mahalik
Percentage of projects that increase Readiness Level at least one level	Percentage of all eligible WPO-supported projects active at any time during FY22 (excluding projects that have no progress report due before Sept 30, 2022) that advance at least one RL during FY22, as reported by PIs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			51	55	47	50					50	58	Exceeded Target Performance	Matt Mahalik
R2A Index: Annual number of OAR R&D products transitioned to a new stage(s) (development, demonstration, or application).	The measure captures the count of significant and discrete OAR research and development products that have transitioned to development, demonstration, or an application. Products include transitions occurring within OAR and applying group(s) outside of OAR. This includes research, development, and demonstration performed and supported by OAR as well as utilization of OAR R&D products by external parties	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			19	24	18	23	2	5	5	17	25	32	Exceeded Target Performance	Matt Mahalik
Number of forecast and mission improvements, based on The Weather Research and Forecasting Innovation Act of 2017, to weather applications at operational US weather services and in the US weather commercial sector.	The measure captures the count of significant and discrete NOAA research and development products that have been deemed ready for delivery for ultimate transition to application at operational U.S. weather services and in the U.S. weather commercial sector (i.e., RL8). In addition, these weather products support NOAA contributions to the Weather Research and Forecasting Innovation Act of 2017.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			n/a	10	18	10					10	18	Exceeded Target Performance	Matt Mahalik
Cumulative number of R2X projects that include social science research and methods to address forecaster and end user needs to prepare for and respond to/ minimize societal impact for extreme weather events	Cumulative number of R2X projects that include social science research and methods to address forecaster and end user needs to prepare for and respond to/ minimize societal impact for extreme weather events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			n/a	n/a	n/a	30					33	36	Exceeded Target Performance	Gina Eosco
Percentage of projects with transition plans delivered to NWS and OAR leadership for final approval	The percentage of all active transition projects that have transition plans that have been received, reviewed, and approved by WPO and delivered by WPO to NWS and OAR for signatures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			25	63	52	61					45	57	Exceeded Target Performance	Matt Mahalik
Percentage of projects that work toward a new or improved numerical weather model component that contributes to the Unified Forecast System (UFS)	Percentage of all WPO projects that include work toward improving an existing or developing a new numerical weather model component within the UFS framework and intends to transition it into operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			n/a	n/a	21	27					20	32	Exceeded Target Performance	Matt Mahalik
Annual number of conference presentations, seminars, webinars, and other informational outreach activities	This measure tracks the engagement and outreach of WPO-sponsored researchers to the science community beyond peer-reviewed publications through tracking science communication and outreach opportunities such as conference presentations and seminars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			n/a	n/a	141	135					85	218	Exceeded Target Performance	Matt Mahalik
Percentage of R&D awards that include funded PIs/participants from at least two collaborating institutions	This measure tracks WPO's ability to support collaborative research projects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			n/a	n/a	n/a	50					40	42	Exceeded Target Performance	Matt Mahalik
Percent of annual WPO budget executed	This measure tracks WPO's execution of appropriated funds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			n/a	n/a	n/a	97					90	97.6	Exceeded Target Performance	Melissa Pratt-Zossoungbo

FY 2022 WPO Annual Operating Plan

Performance Measure	Description	Mapping		Past Year Actuals					Current Year Reporting								Point of Contact
		OAR Strategic Goal	OAR Implementation Plan Outcome	FY-18	FY-19	FY-20	FY-21	FY-22	FY-23 Q1		FY-23 Q2		FY-23 Q3		FY-23 Q4		
									Target	Actual	Target	Actual	Target	Actual	Target	Actual	
Annual number of NOAA peer reviewed publications related to environmental understanding and prediction	The annual number of peer reviewed publications is an indicator of productivity and relevance and is tracked using on-line resources. Peer review is one of the important procedures used to ensure that the quality of published information meets the standards of the scientific and technical community.	Drive Innovative Science		23	31	45	48								40		Matt Mahalik
Percentage of projects that increase Readiness Level at least one level	Percentage of all eligible WPO-supported projects active at any time during FY22 (excluding projects that have no progress report due before Sept 30, 2022) that advance at least one RL during FY22, as reported by PIs	Drive Innovative Science		51	55	47	50								50		Matt Mahalik
R2A Index: Annual number of OAR R&D products transitioned to a new stage(s) (development, demonstration, or application).	The measure captures the count of significant and discrete OAR research and development products that have transitioned to development, demonstration, or an application. Products include transitions occurring within OAR and applying group(s) outside of OAR. This includes research, development, and demonstration performed and supported by OAR as well as utilization of OAR R&D products by external parties	Drive Innovative Science		19	24	18	23		0	2	5		10		20		Matt Mahalik
Number of forecast and mission improvements, based on The Weather Research and Forecasting Innovation Act of 2017, to weather applications at operational US weather services and in the US weather commercial sector.	The measure captures the count of significant and discrete NOAA research and development products that have been deemed ready for delivery for ultimate transition to application at operational U.S. weather services and in the U.S. weather commercial sector (i.e., RL8). In addition, these weather products support NOAA contributions to the Weather Research and Forecasting Innovation Act of 2017.	Make Forecasts Better	Reduce developmental time from research to operations through adoption of community-based Earth system modeling.	n/a	10	18	10								10		Matt Mahalik
Cumulative number of R2X projects that include social science research and methods to address forecaster and end user needs to prepare for and respond to/ minimize societal impact for extreme weather events	Cumulative number of R2X projects that include social science research and methods to address forecaster and end user needs to prepare for and respond to/ minimize societal impact for extreme weather events	Make Forecasts Better	Enhance the value of tornado forecasts by transitioning social science projects into application.				30								34		Gina Eosco Matt Mahalik
Percentage of projects with transition plans delivered to NWS and OAR leadership for final approval	The percentage of all active transition projects that have transition plans that have been received, reviewed, and approved by WPO and delivered by WPO to NWS and OAR for signatures	Make Forecasts Better		25	63	52	61								45		Matt Mahalik
Percentage of projects that work toward a new or improved numerical weather model component that contributes to the Unified Forecast System (UFS)	Percentage of all WPO projects that include work toward improving an existing or developing a new numerical weather model component within the UFS framework and intends to transition it into operations	Make Forecasts Better	Reduce developmental time from research to operations through adoption of community-based Earth system modeling.	n/a	n/a	21	27								25		Matt Mahalik
Annual number of conference presentations, seminars, webinars, and other informational outreach activities	This measure tracks the engagement and outreach of WPO-sponsored researchers to the science community beyond peer-reviewed publications through tracking science communication and outreach opportunities such as conference presentations and seminars	Drive Innovative Science		n/a	n/a	141	135								100		Matt Mahalik
Percent of annual WPO budget executed	This measure tracks WPO's execution of appropriated funds	Drive Innovative Science		n/a	n/a	n/a	97								90		Melissa Pratt-Zossoungbo

FY 2023 WPO Annual Operating Plan