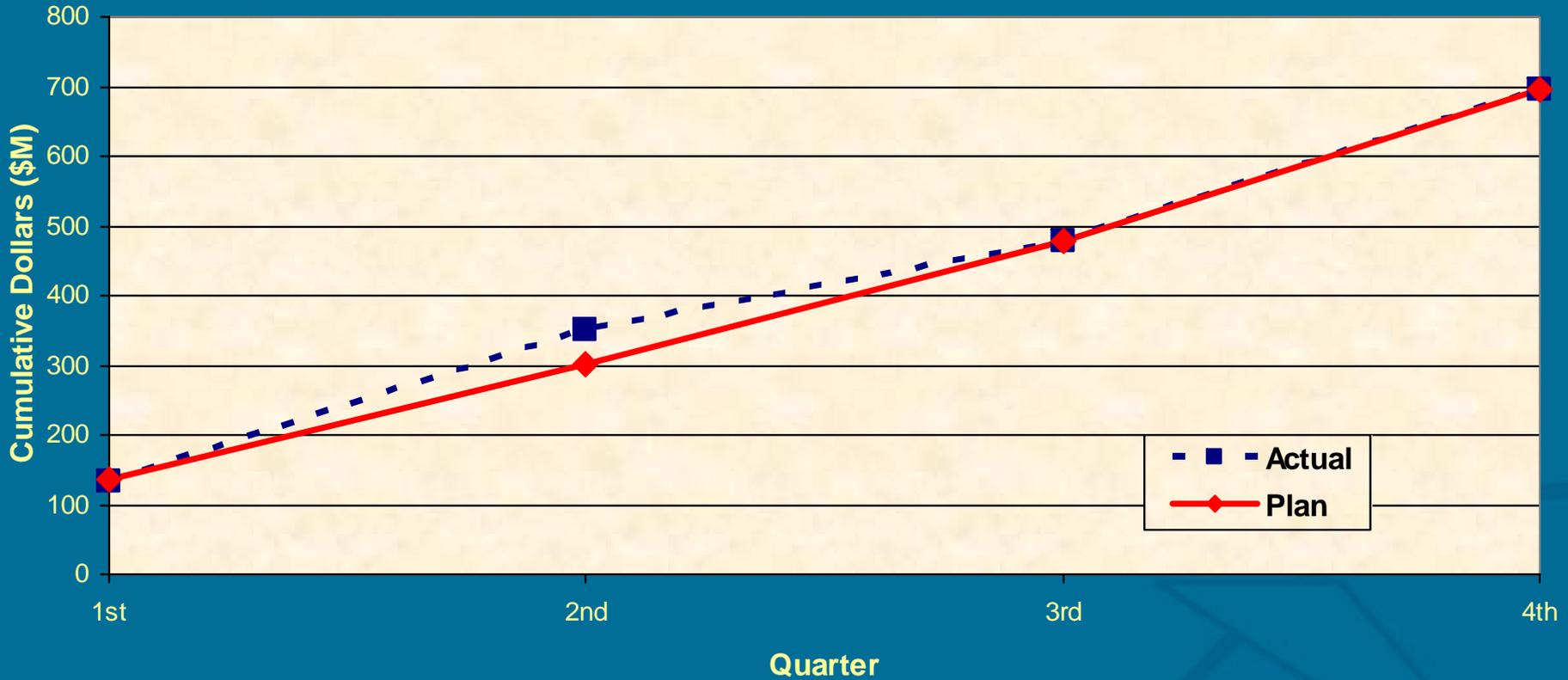


National Weather Service 4th Quarter Review

December 8, 2003

NOAA

NWS 4th Quarter Actuals - OR&F (\$ in Millions)



Plan	136.97	300.17	478.73	695.23
Actual	134.46	349.38	479.68	694.54

NOAA

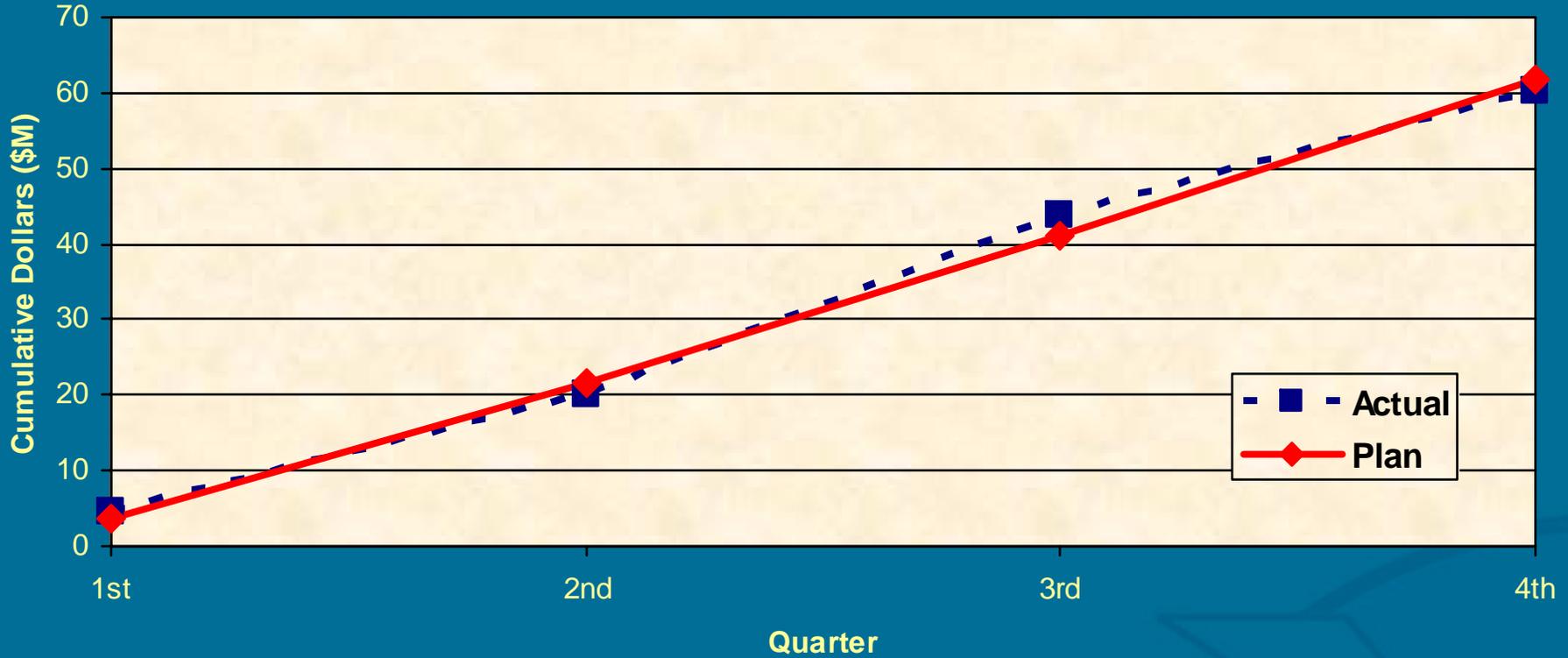
NWS OR&F Appropriations by Sub-Activity – 4th Quarter (\$K)

Sub-Activity	Annual Plan (\$)	Actual Obligation (\$)	Percent (%) of Annual Plan Obligated	Variance from Plan to Date (\$)	Variance from Plan to Date %
Operations and Research	606,646.9	606,600.0	99.9%	46.9	0.0%
Systems Operations & Maintenance	88,584.7	87,941.5	99.3%	643.2	0.7%
TOTAL	695,231.6	694,541.5	99.9%	690.1	0.09%

NOAA

NWS 4th Quarter Actuals – PAC

(\$ in Millions)



Plan	3.8	21.7	41.1	61.8
Actual	4.6	20.0	43.7	60.3

NOAA

NWS PAC Appropriations by Sub-Activity – 4th Quarter (\$K)

Sub-Activity	Annual Plan (\$)	Actual Obligation (\$)	Percent (%) of Annual Plan Obligated	Variance from Plan to Date (\$)	Variance from Plan to Date %
Systems Operations & Maintenance (O&M)	0.0	-4.3	0%	4.3	0%
Systems Acquisition	58,760.8	57,388.3	97.7%	1372.5	2.3%
Construction	2,992.7	2,949.1	98.5%	43.6	1.5%
TOTAL	61,753.5	60,333.1	97.7%	1,420.4	2.3%

NOAA Strategic Plan Metrics

Tornado Lead Time



Tornado Lead Time



Funding

	FY01	FY02	FY03	FY04	FY05
NEXRAD PI (\$M)	8.3	8.3	8.2	12.0	11.4
NEXRAD O&M (\$M)	38.7	40.0	39.7	42.3	42.3
AWIPS PI (\$M)	15.9	16.3	16.2	14.1	11.9
AWIPS O&M (\$M)	35.3	36.5	36.3	37.6	37.6

Timeline/Next Steps

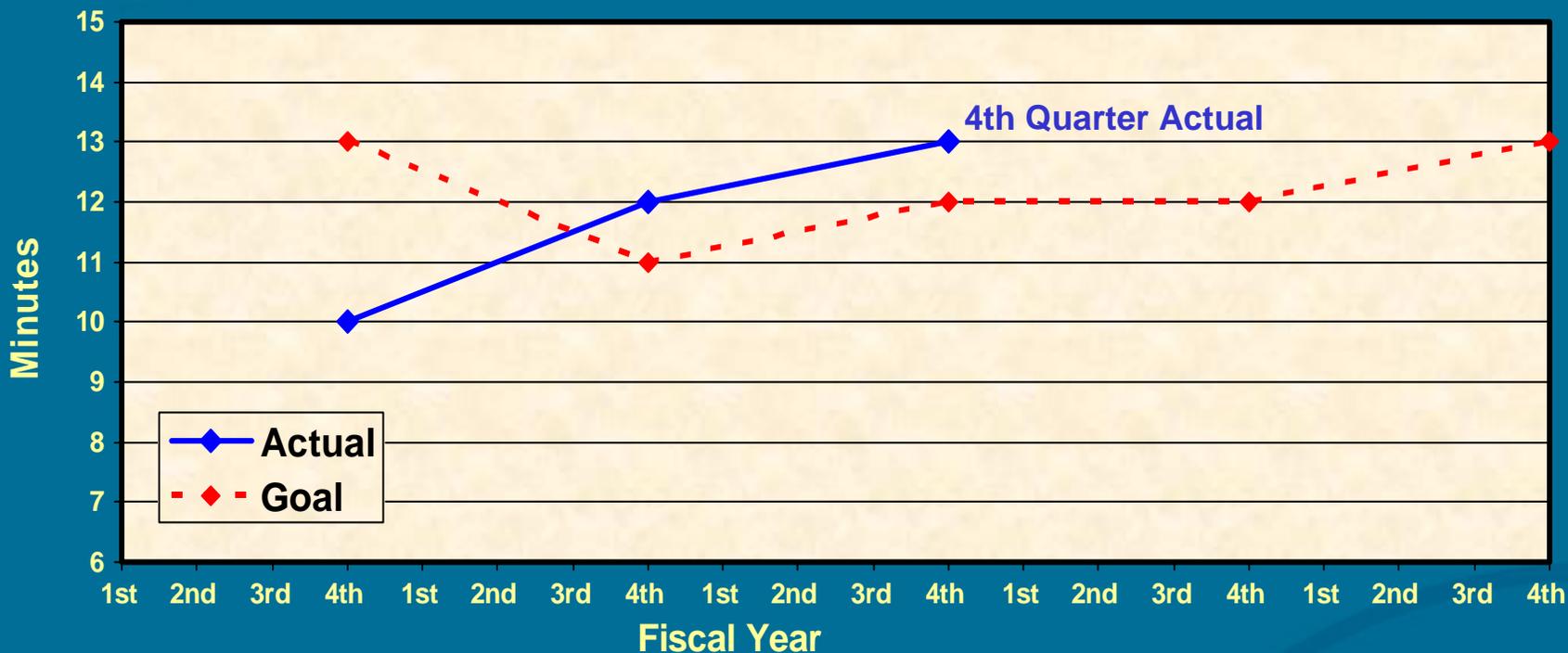
- NEXRAD: Open Systems Radar Acquisition (FY05)
- AWIPS: LINUX Upgrades (FY02+)
- Improve forecaster capabilities:
 - Advanced Weather Operations Course (FY05)
 - NOAA Diversity Best Practices at local offices (Ongoing)

Issues

- AWIPS:
 - Bandwidth
 - Processing speed
 - Outyear product improvement budget

NOAA Strategic Plan Metrics

Tornado Lead Time



2001

2002

2003

2004

2005

Lead Time Annual Goal		11.0	12.0				12.0	13.0
Lead Time Actual	10.0	12.0	12.0	11.0	14.0	13.0	N/A	N/A
NEXRAD PI (\$M)	8.3	8.3	8.2				12.0	12.0
NEXRAD O&M (\$M)	38.7	40.0	39.7				42.3	42.3
AWIPS PI (\$M)	15.9	16.3	16.2				14.1	11.9
AWIPS O&M (\$M)	35.3	36.5	36.3				37.6	37.6

NOAA Strategic Plan Metrics

Tornado Lead Time



Lead Time Annual Goal																11.0	12.0	12.0	13.0	14.0	15.0
Lead Time Actual	3.4	4	5.4	7.2	5.9	7.3	6.0	7.7	9.9	9.9	9.36	10.9	11.6	9.8	10.0	12.0	13.0				
# Events	667	661	1009	1261	1252	1189	1421	1128	1244	1269	1176	1544	1603	1045	1205	1028	1672				

NOAA Strategic Plan Metrics Flash Flood Lead Time

Flash Flood Lead Time



Funding



	FY01	FY02	FY03	FY04	FY05
NEXRAD PI (\$M)	8.3	8.3	8.2	12.0	11.4
NEXRAD O&M (\$M)	38.7	40.0	39.7	42.3	42.3
AWIPS PI (\$M)	15.9	16.3	16.2	14.1	11.9
AWIPS O&M (\$M)	35.3	36.5	36.3	37.6	37.6
AHPS	1.0	1.5	6.0	6.1	6.1
COOP	-	-	3.0	4.2	10.0

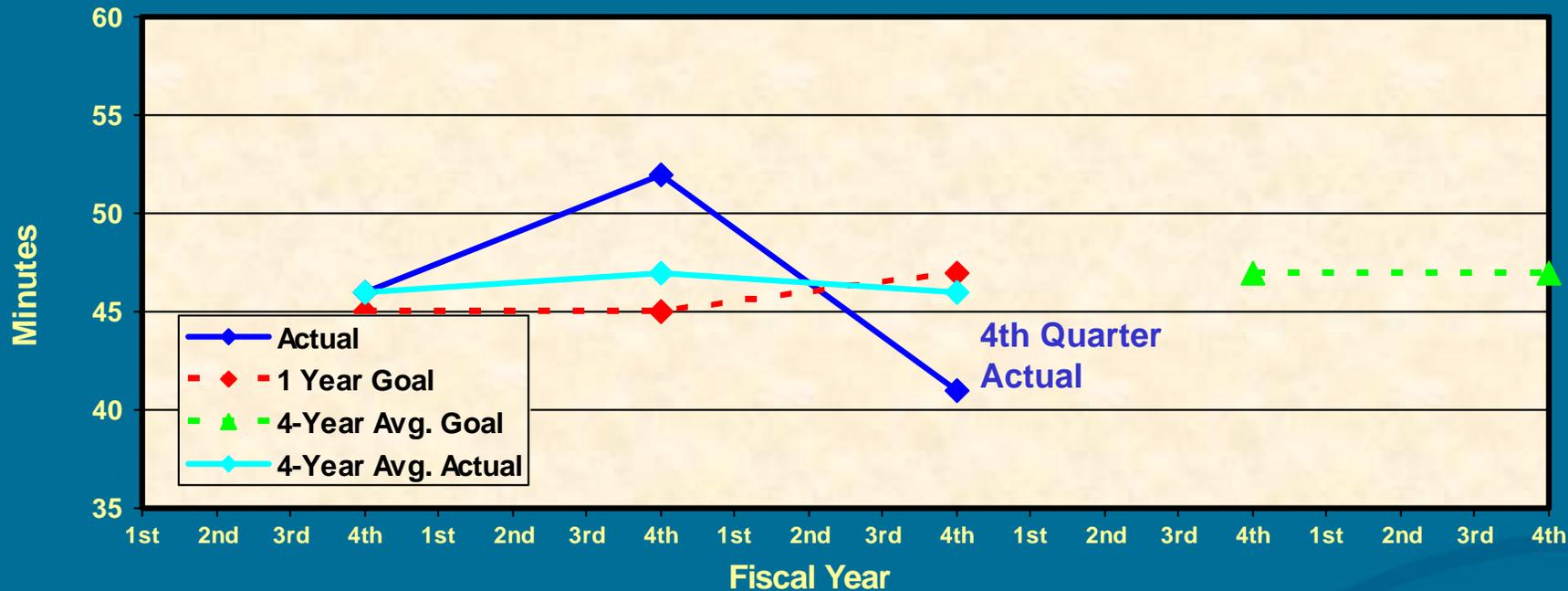
Timeline/Next Steps

- NEXRAD: Open Systems Radar Acquisition (FY05)
- AWIPS: LINUX Upgrades (FY02+)
- Advanced Hydrologic Prediction Services (AHPS) (FY03-FY05)
- ASOS precipitation gauge (FY03/04)
- Cooperative Observer Network Modernization (COOP) (FY03+)
- Convert metric to running, 4-year average for FY 04 (Modify strategic plan to reflect change)

Issues

- AWIPS:
 - *Bandwidth*
 - *Processing speed*
 - *Outyear product improvement budget*
- AHPS and COOP Deployment Pacing
- Continued FFMP training is necessary to improve the warning capability at field offices.
- Continued AHPS funding is critical to the enhancement of flash flood services.

NOAA Strategic Plan Metrics Flash Flood Lead Time



2001

2002

2003

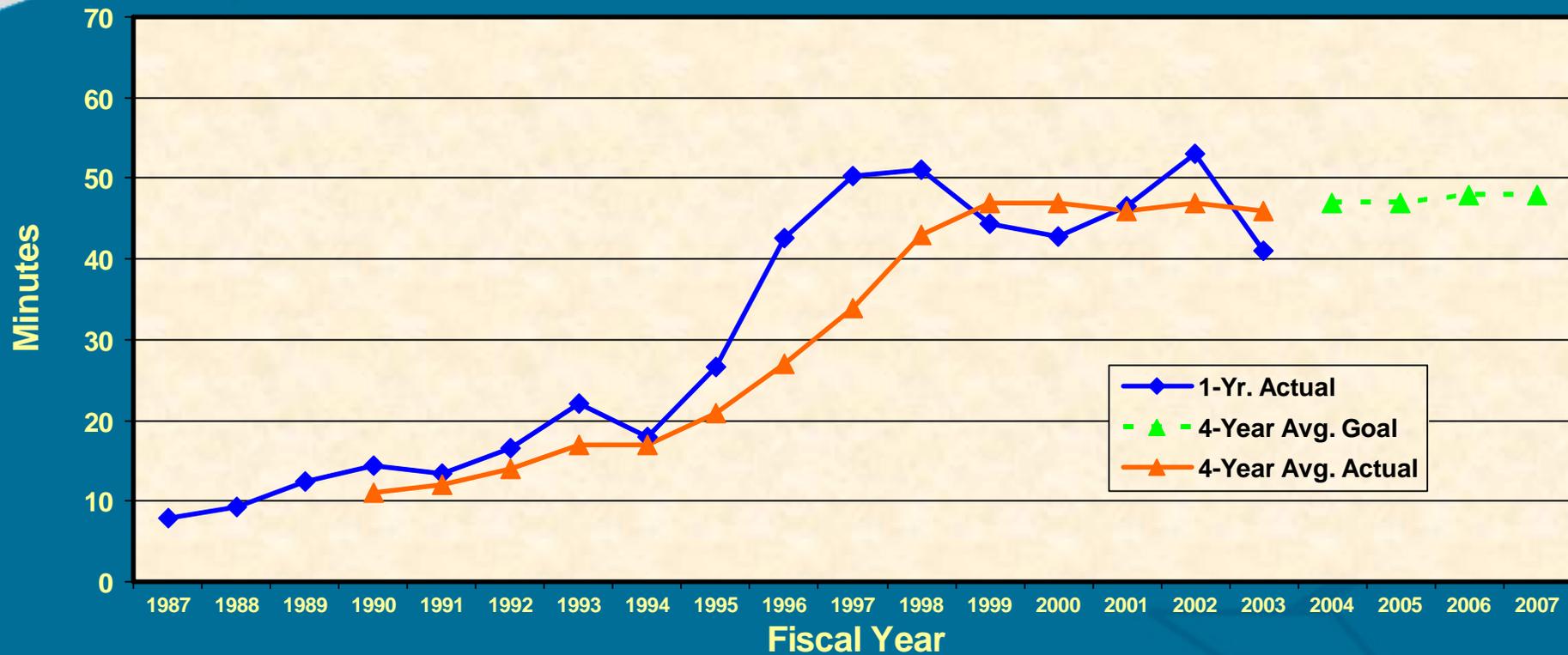
2004

2005

Lead Time Annual Goal		45.0	47.0				--	--
Running 4-year average goal						47	47	
Lead Time Actual	46.6	52.8	41.3	47.8	44.8	41.1	N/A	
NEXRAD PI (\$M)	8.3	8.3	8.2				12.0	12.0
NEXRAD O&M (\$M)	38.7	40.0	39.7				42.3	42.3
AWIPS PI (\$M)	16.3	16.3	16.2				14.1	11.9
AWIPS O&M (\$M)	35.3	36.5	36.3				37.6	37.6

NOAA Strategic Plan Metrics

Flash Flood Lead Time

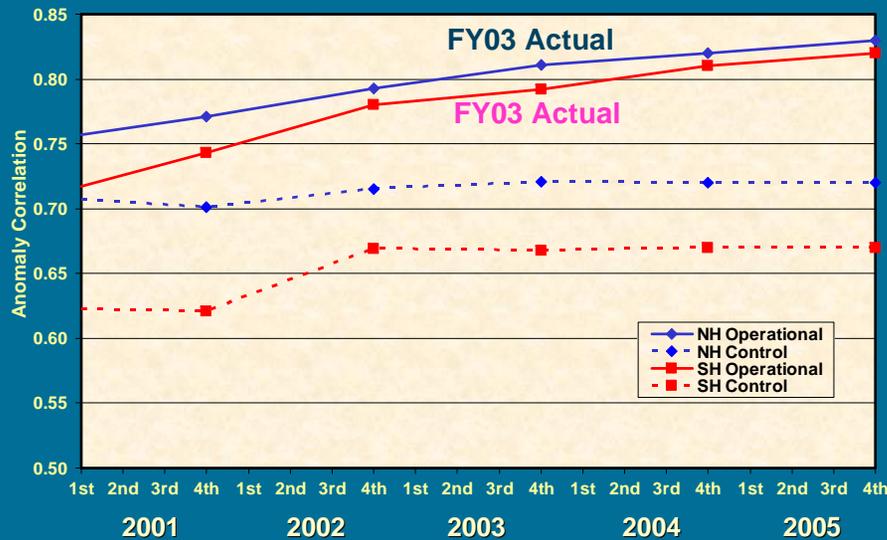


Lead Time Annual Goal																45.0	47.0	-	-	-	-	
Running 4-year average goal																			47.0	47.0	48.0	48.0
Lead Time Actual	7.8	9.2	12.5	14.3	13.5	16.5	22.0	17.9	26.6	42.6	50.3	51.0	44.3	42.7	46.6	52.8	41.1					
# Events	934	436	1367	2320	2015	1722	2108	2190	2437	2793	3229	3142	2713	2324	2779	3021	3392					

Strategic Plan Metrics

5 Day Global Weather Model Performance (Anomaly Correlation at 500mb)

Anomaly Correlation at 500mb



Funding



	2001	2002	2003	2004	2005
Budget (\$M)	1.2	1.5	1.6	1.7	1.7

Timeline/Next Steps

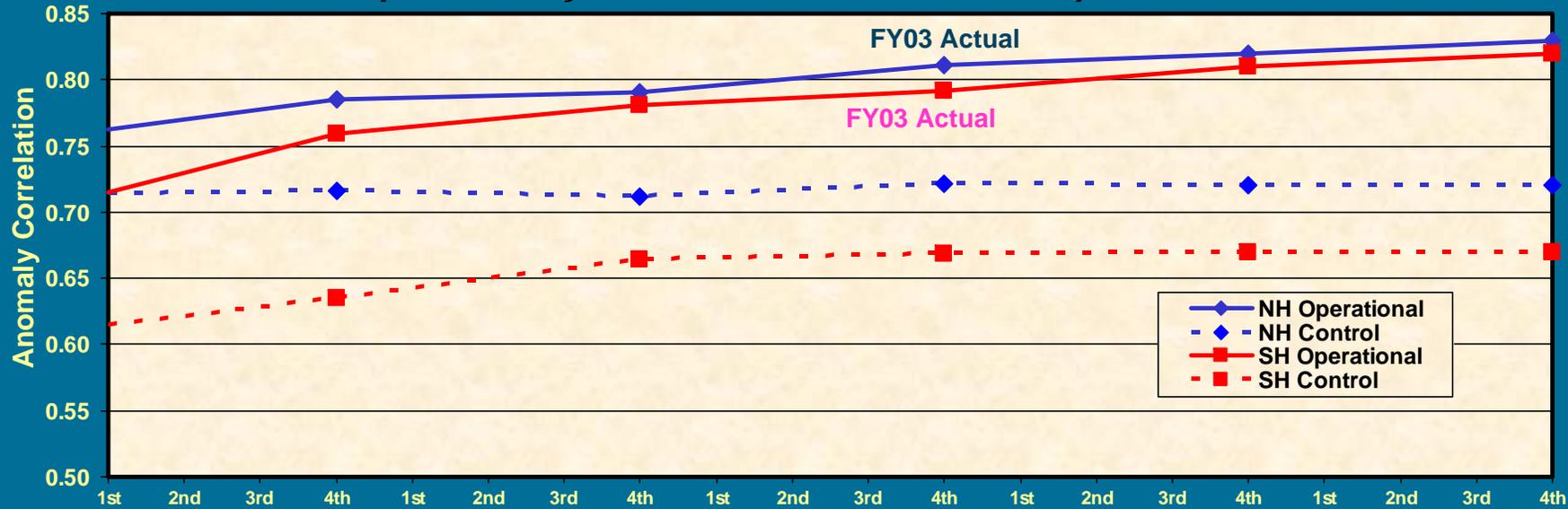
- High Performance Computer Upgrades (FY03+)
- Improve Data Assimilation and Modeling
 - Increase Horizontal Resolution (FY05/FY08)
 - Assimilate Atmospheric Infrared Sounder (AIRS) (FY04)
 - Improve Cloud and Radiative Physics (FY05/FY06)

Issues

- None

Strategic Plan Metrics

5 Day Global Weather Model Performance (Anomaly Correlation at 500mb)

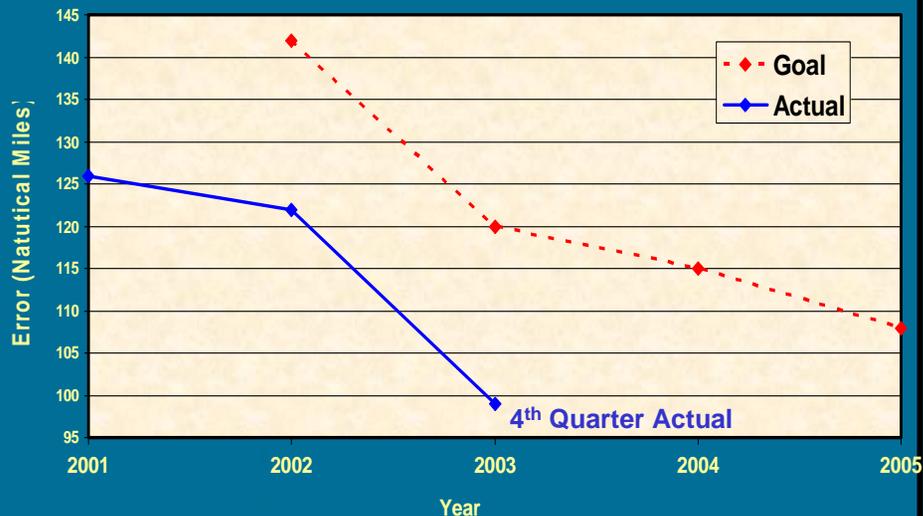


	2001	2002	2003	2004	2005
NH Operational	.771	.793	.811	.820	.830
NH Control	.701	.715	.721	.720	.720
NH % Improvement	9.9%	10.9%	12.5%	13.9%	15%
SH Operational	.743	.780	.792	.810	.820
SH Control	.621	.669	.668	.670	.670
SH % Improvement	19.6%	16.6%	18.6%	20.8%	22%
Budget (\$M)	\$1.2	\$1.5	\$1.6	\$1.7	\$1.7

NOAA Strategic Plan Metrics

Yearly Average 48 Hour Track Forecast Error Atlantic Basin

48 Hour Track Forecast Error



Funding



	2001	2002	2003	2004	2005
Budget (\$M)	5.2	6.4	6.6	6.8	6.8

Timeline/Next Steps

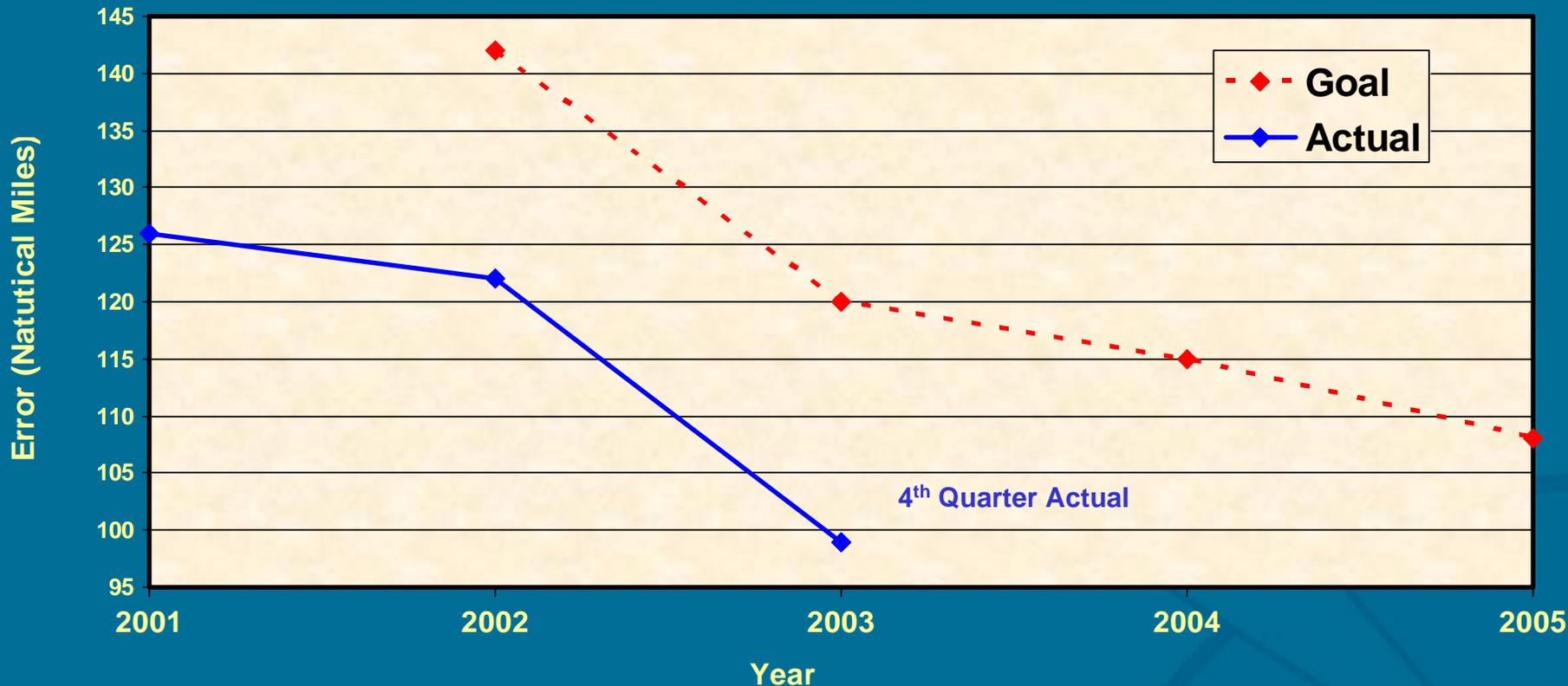
- Hurricane Model Upgrades:
 - Increased vertical resolution (from 18 to 42 levels) (FY03)
 - Increased horizontal resolution (from 18km to 6 km) (FY10)
 - Improved physics (FY03 +)
- Aircraft Instrumentation Upgrades (FY03/04)
- Hurricane WRF (FY06)
- Joint Hurricane Testbed (JHT) Projects (FY03 +)

Issues

- Hurricane Intensity Forecast Accuracy

NOAA Strategic Plan Metrics

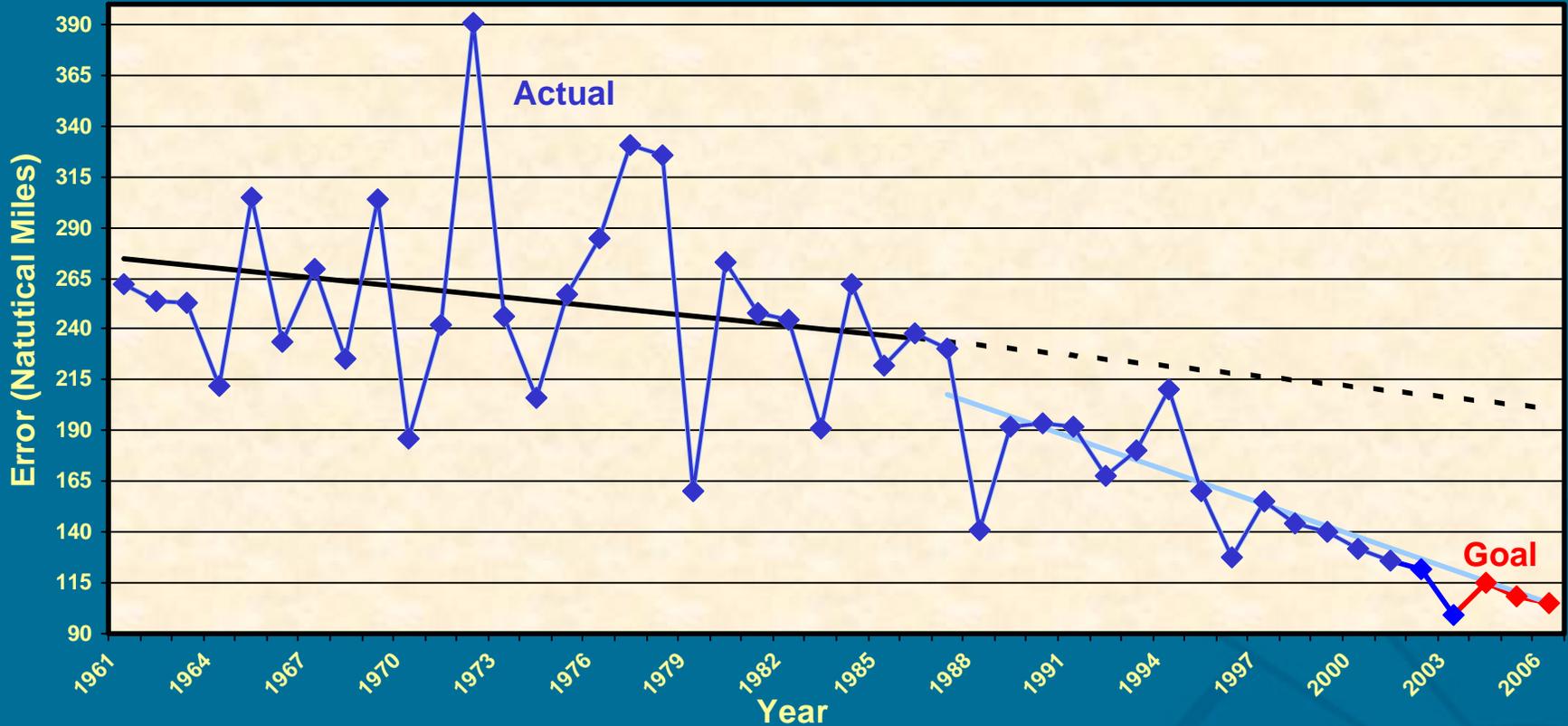
Yearly Average 48 Hour Track Forecast Error Atlantic Basin



Annual Goal		142	120	115	108
Actual	126	122	99		
Budget (\$M)	\$5.2	\$6.4	\$6.6	\$6.8	\$6.8

NOAA Strategic Plan Metrics

Yearly Average 48 Hour Track Forecast Error Atlantic Basin

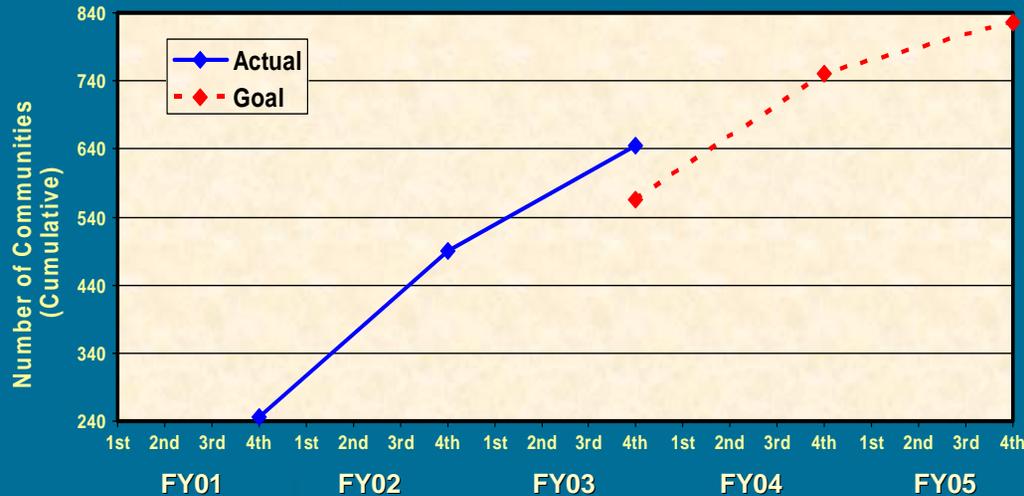


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Goal						142	120	115	108	105
Actual	155	144	140	132	126	122	99			

Strategic Plan Metrics

StormReady/TsunamiReady Communities

Number of StormReady Communities



Funding



	2001	2002	2003	2004	2005
Budget (\$K)	15.0	15.0	20.0	20.0	20.0

Timeline/Next Steps

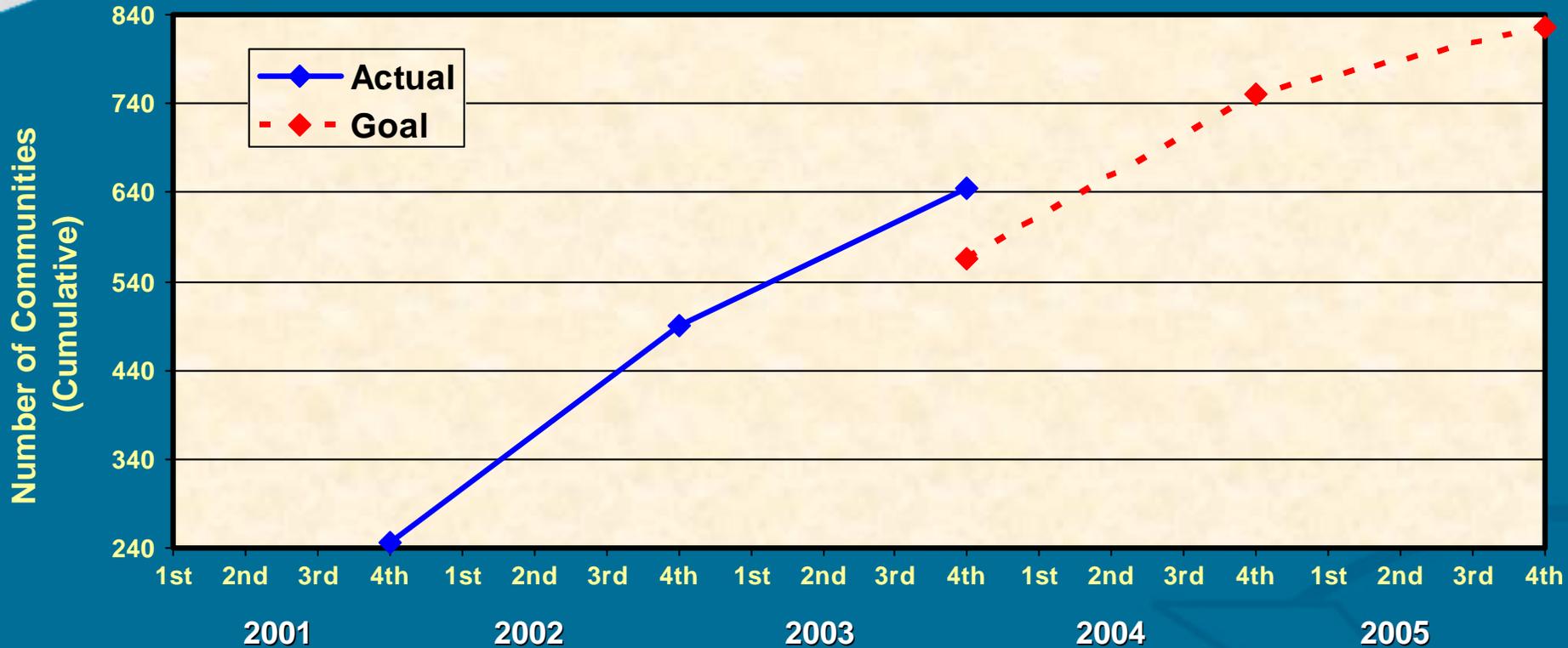
- 900 StormReady communities (FY07)
- Continue to promote StormReady to Emergency Managers and community officials (Ongoing)
- Develop new StormReady promotional materials (Ongoing)

Issues

- Increased workload on communities combined with limited resources
 - *Homeland Security has become the highest priority for Emergency Managers and communities*

NOAA Strategic Plan Metrics

StormReady/TsunamiReady Communities



	2001		2002		2003			2004		2005	
Goal (Cumulative)				-	565			750		825	
Actual (Cumulative)	246		490		524	562	602	645	N/A		N/A
Budget (\$K)	15.0		15.0		20.0			20.0		20.0	

Strategic Plan Metrics

Advanced Hydrologic Prediction Service (AHPS) Implementation

AHPS Implementation



Funding



	FY01	FY02	FY03	FY04	FY05
AHPS (\$M)	1.0	1.5	6.0	6.1	6.1

AHPS will provide \$766M in economic benefits each year following National implementation

Timeline/Next Steps

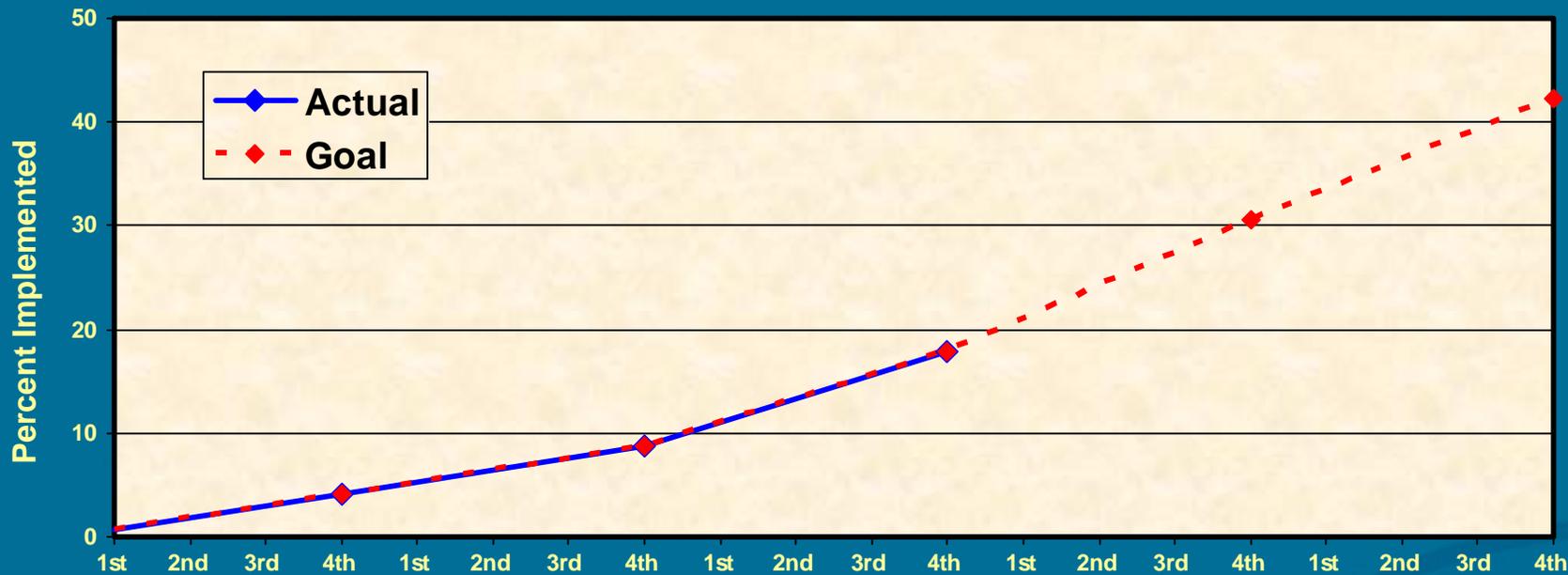
- 50% complete in FY 2006
- 100% complete in FY 2012

Issues

- FY 2004 Conference Mark reduces AHPS to 21% below FY 2003 funding
- Performance metrics

NOAA Strategic Plan Metrics

Advanced Hydrologic Prediction Service (AHPS) Implementation



2001

2002

2003

2004

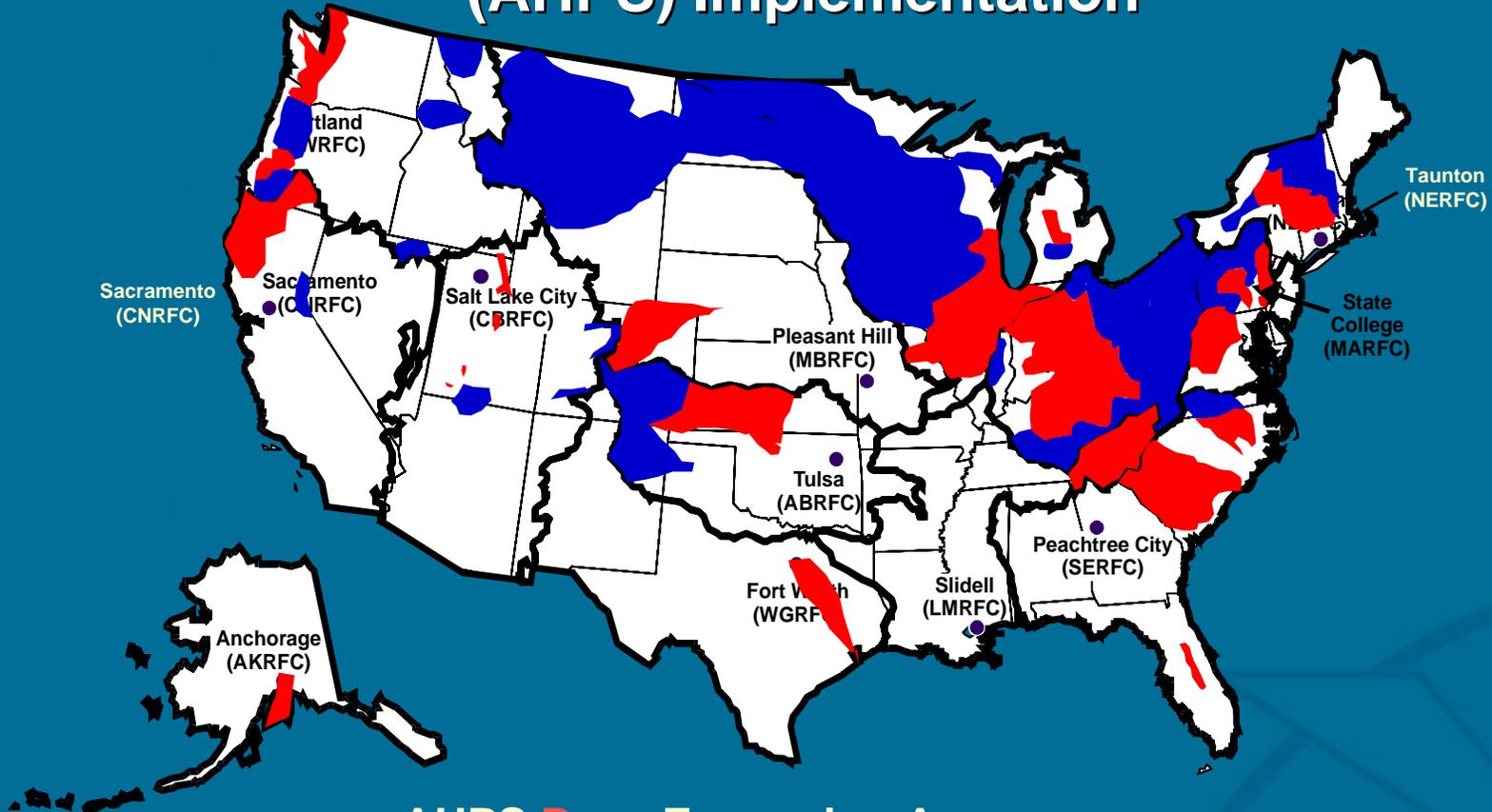
2005

% Implemented Goal		8.7	17.9	30.6	42.2
% Implemented Actual	4.0	8.8	17.9	N/A	N/A
Budget (\$M)	1.0	1.5	6.0	6.1	6.1

NOAA

Strategic Plan Metrics

Advanced Hydrologic Prediction Service (AHPS) Implementation

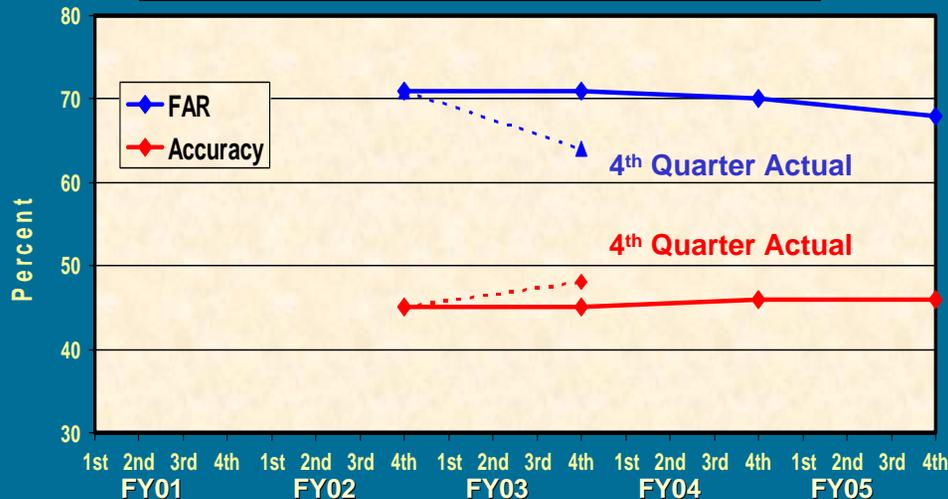


AHPS Base Expansion Areas

- Areas Completed Through FY 2003 (717 Forecast Points)
- Areas Covered by FY 2004 National AHPS (511 New Forecast Points)

NOAA Strategic Plan Metrics Aviation Forecast Accuracy and False Alarm Rate (FAR)

Aviation Forecast Accuracy and FAR



Funding



	2001	2002	2003	2004	2005
Budget (\$M)	66.7	69.2	70.6	73.3	75.5
Aviation Initiative (\$M)	0	0	2.5	2.5	3.5

Timeline/Next Steps

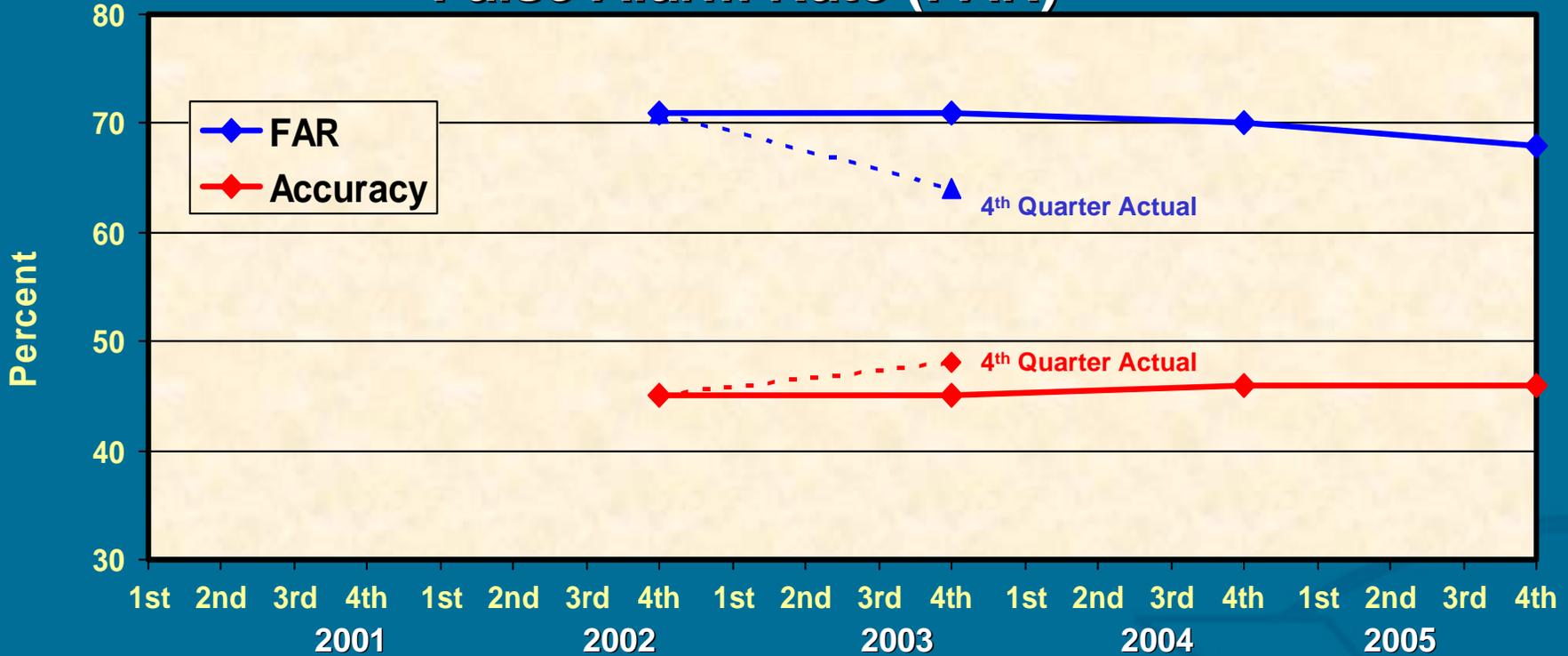
- Obtain water vapor real time data to improve Terminal Aerodrome Forecast (TAF) model guidance (FY03-09)
- Develop and deploy TAF specific forecaster preparation tools (Version 1.0 – FY03, Version 2.0 – FY04)
- Develop and implement new ceiling/visibility forecast model tools (FY05)
- Develop and improve forecaster TAF training (First course released FY03 – Additional courses in development)

Issues

- 2-6 hour convection forecasts recognized as one of most difficult
- FAA funding separate NCAR and MIT research efforts to improve forecast capability
- First generation ceiling/visibility forecast model guidance not expected to be fielded until FY05

Strategic Plan Metrics

Aviation Forecast Accuracy and False Alarm Rate (FAR)



FAR Goal	New Measure	New Measure	71.0				70.0	68.0
FAR Actual	46.0	52.0	-	-	62.1	63.6	N/A	N/A
Accuracy Goal	New Measure	New Measure	45.0				46.0	46.0
Accuracy Actual	N/A	45.0	-	-	48.4	47.5	N/A	N/A
Budget (\$M)	66.7	69.2	70.6				73.3	75.5
Aviation Initiative (\$M)	-	-	2.5				2.5	3.5

Strategic Plan Metrics

National Air Quality Forecast Capability

National Air Quality Forecast

Success Criteria:

- Forecast Accuracy: 90%
- On-Time Delivery of Forecasts: 94%

Funding

	2001	2002	2003	2004	2005
NWS Budget (\$M)	-	-	3.0	3.0	3.0

Timeline/Next Steps

- Initial Operating Capability: Issue 1-Day Ozone Forecast for NE U.S. (FY04)
- Issue 1-Day Ozone Forecast Nationally (FY08)
- Issue 1-Day Particulate Matter Forecast for NE U.S. (FY08)
- Issue 1-Day Particulate Matter Forecast Nationally (FY13)
- Extend Ozone Forecasts to Day 2 and Beyond (FY13)

Issues/Comments

- Coordination with EPA
- Research funding for particulate matter forecasts
- Definition of Performance Metrics
- Optimal Observing Infrastructure

NOAA
Congressional Reports
Etheridge Report

<i>Action</i>	<i>Due Date</i>	<i>Completion Date</i>
NWS Forwards to NOAA	Not Established	4/10/03
NOAA Forwards to DOC	-	4/23/03
DOC Forwards to OMB	-	5/2/03
OMB Provides Clearance	-	7/03
DOC Forwards to Congress	January 29, 2003	7/25/03