Quarterly Report: NWS Evolve

Briefing for Deputy Secretary Andrews

Dr. Louis W. Uccellini and Laura K. Furgione
Director and Deputy Director, National Weather Service
NOAA Assistant Administrator for Weather Services

July 25, 2016

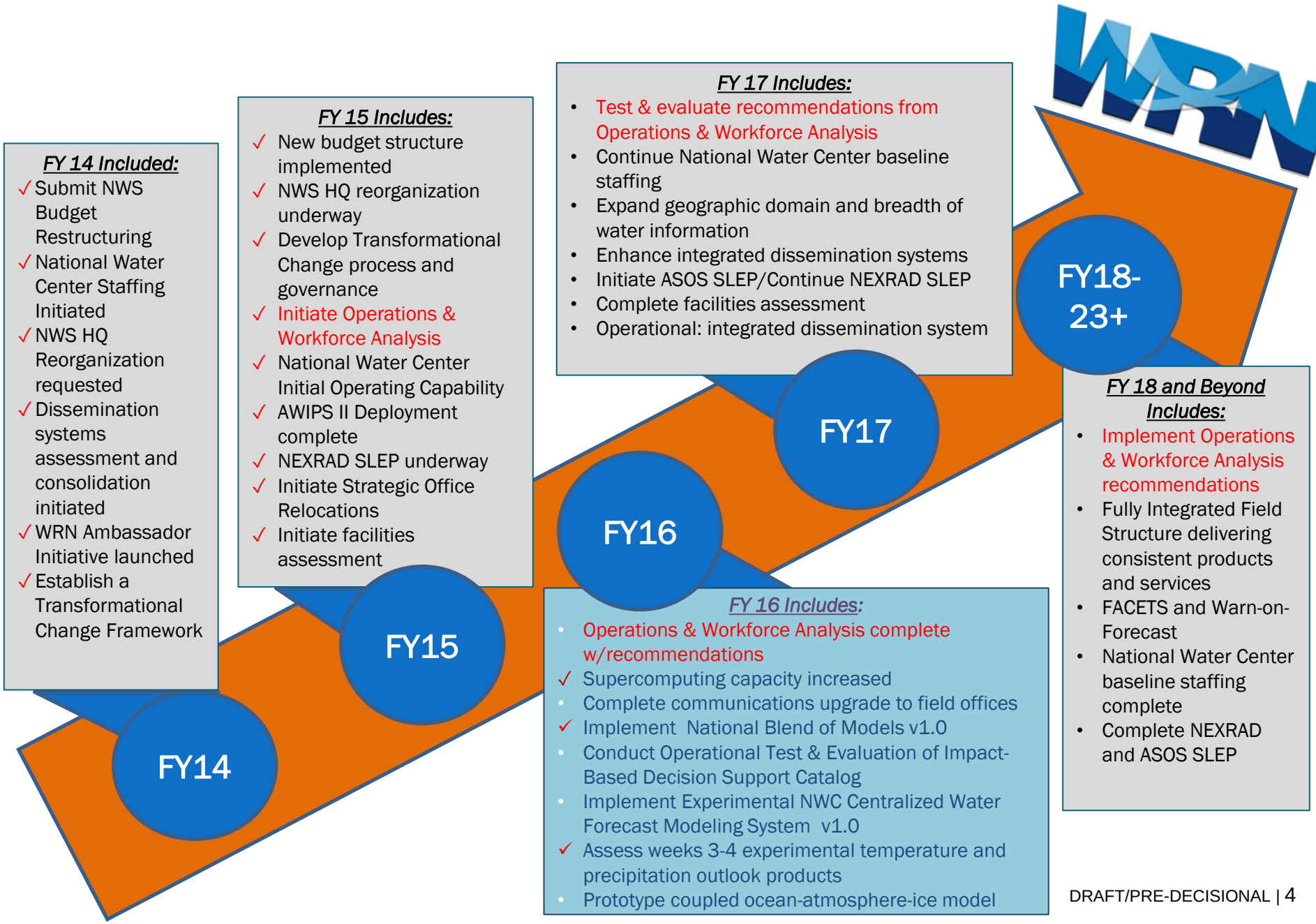
Agenda

- **Bottom Line Up Front**
- **Update on the Collective Bargaining Agreement Renegotiation and Other NWSEO Engagement**
- **Filling Vacancies**
- **APG Update**
- **OWA Update**

Bottom Line Up Front

- Review key milestones and program highlights
- Stall tactics on CBA Renegotiation continue from NWSEO
- Filling vacancies still a major challenge
- Operations and Workforce Analysis continues to make headway
  - Directed at providing Impact-based Decision Support Services (IDSS) to Build a WRN
  - Exploring and refining ways to unlock FTE to focus on IDSS
- Agency Priority Goal - Continued progress has been made and the performance measure is on target to be met in Q4 FY17

Key Milestones to Evolve the NWS



FY 14 Included:

- ✓ Submit NWS Budget Restructuring
- ✓ National Water Center Staffing Initiated
- ✓ NWS HQ Reorganization requested
- ✓ Dissemination systems assessment and consolidation initiated
- ✓ WRN Ambassador Initiative launched
- ✓ Establish a Transformational Change Framework

FY 15 Includes:

- ✓ New budget structure implemented
- ✓ NWS HQ reorganization underway
- ✓ Develop Transformational Change process and governance
- ✓ Initiate Operations & Workforce Analysis
- ✓ National Water Center Initial Operating Capability
- ✓ AWIPS II Deployment complete
- ✓ NEXRAD SLEP underway
- ✓ Initiate Strategic Office Relocations
- ✓ Initiate facilities assessment

FY 16 Includes:

- Operations & Workforce Analysis complete w/recommendations
- ✓ Supercomputing capacity increased
- Complete communications upgrade to field offices
- ✓ Implement National Blend of Models v1.0
- Conduct Operational Test & Evaluation of Impact-Based Decision Support Catalog
- Implement Experimental NWC Centralized Water Forecast Modeling System v1.0
- ✓ Assess weeks 3-4 experimental temperature and precipitation outlook products
- Prototype coupled ocean-atmosphere-ice model

FY 17 Includes:

- Test & evaluate recommendations from Operations & Workforce Analysis
- Continue National Water Center baseline staffing
- Expand geographic domain and breadth of water information
- Enhance integrated dissemination systems
- Initiate ASOS SLEP/Continue NEXRAD SLEP
- Complete facilities assessment
- Operational: integrated dissemination system

FY 18 and Beyond Includes:

- Implement Operations & Workforce Analysis recommendations
- Fully Integrated Field Structure delivering consistent products and services
- FACETS and Warn-on-Forecast
- National Water Center baseline staffing complete
- Complete NEXRAD and ASOS SLEP

Cross-Cutting Issues and Concerns: Labor – Management Relationship

Actions:

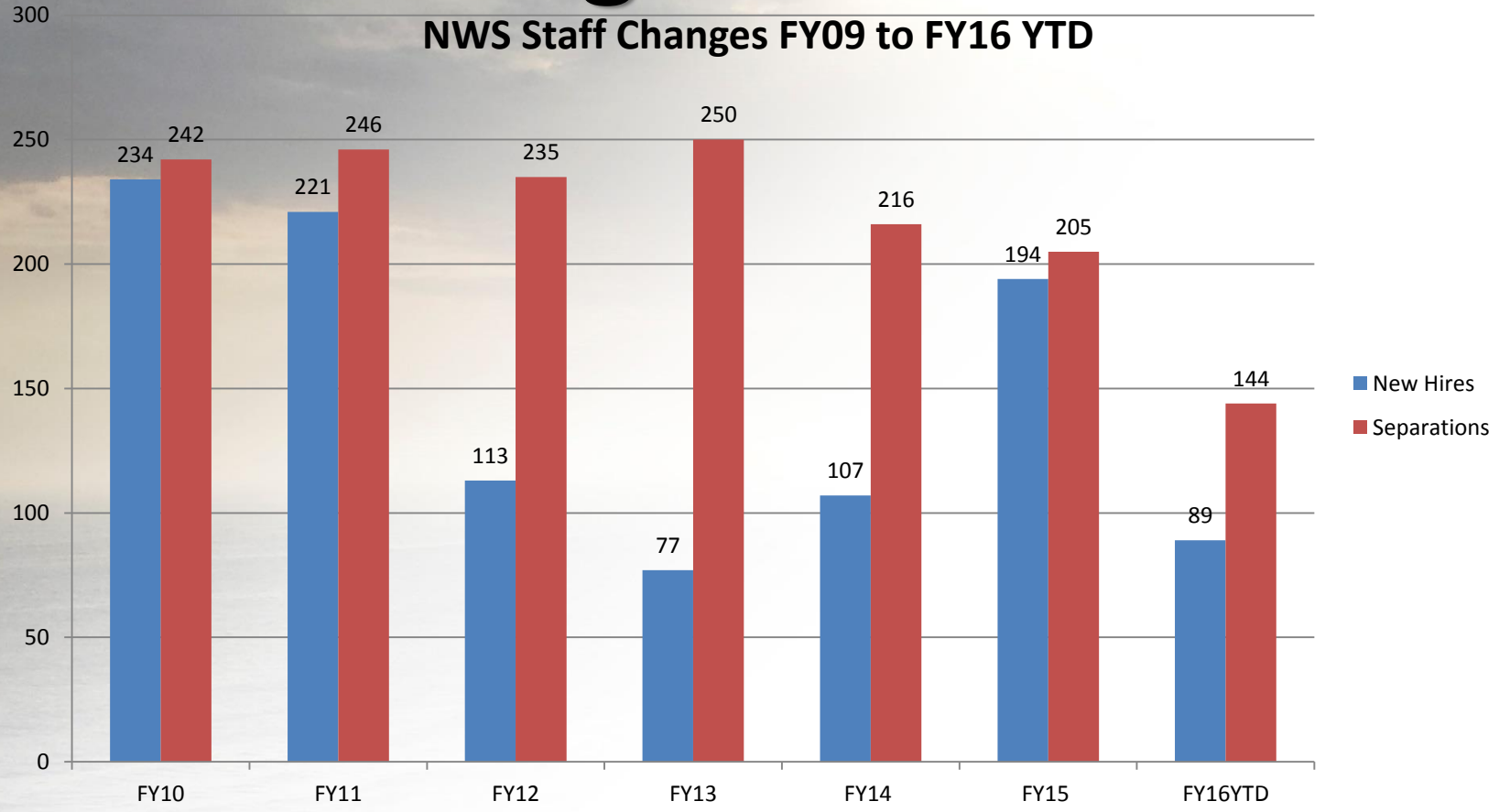
- **CBA Renegotiation, Engaging NWSEO on the OWA Project, Bargaining other Evolve NWS issues**

Progress	Concerns
Currently: Impasse on 1 sentence of 1 Article of the Ground rules for **CBA renegotiation**. Related to who can reopen articles after reaching tentative agreement. Working on Options with FSIP to expedite a decision.	Ongoing: Speed of CBA renegotiation and our ability to negotiate several other big ticket items in parallel. FSIP meets quarterly and not until mid-Sep.
Update: NWS has just hired a strategic Comms expert to help win messaging battle with NWSEO	
Ongoing: NWS-NWSEO Strategic Dialogue Team	Meetings have ceased since May.
Ongoing: National Labor Council — Successful negotiations to speed up hiring and stand up ROCs	Looking to formally bargain over ROCs in a timely fashion given CBA renegotiation. Grievance filed by NWSEO over Hiring MOU related to PCS past practice

Help Requested from DOC:

✓ **Be available to maintain/garner additional support on Hill, as needed.**

Cross-Cutting Issues and Concerns: Filling Vacancies



	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16YTD
New Hires	263	234	221	113	77	107	194	89
Separations	221	242	246	235	250	216	205	144
Delta Change	42	(8)	(25)	(122)	(173)	(109)	(11)	(55)

Filling Vacancies: What are we doing?

Bundling job announcements

Standing register for GS-13 Lead Forecasters

Selections can be made outside WFMO process

-MOU-
Signed 2 June

Streamlining Met Intern & HMT Hiring

Interns: Bid externally as GS-5/7

HMTs: Bid internally as GS-11

Reduces 16 certs to 3!

Voluntary Reassignments

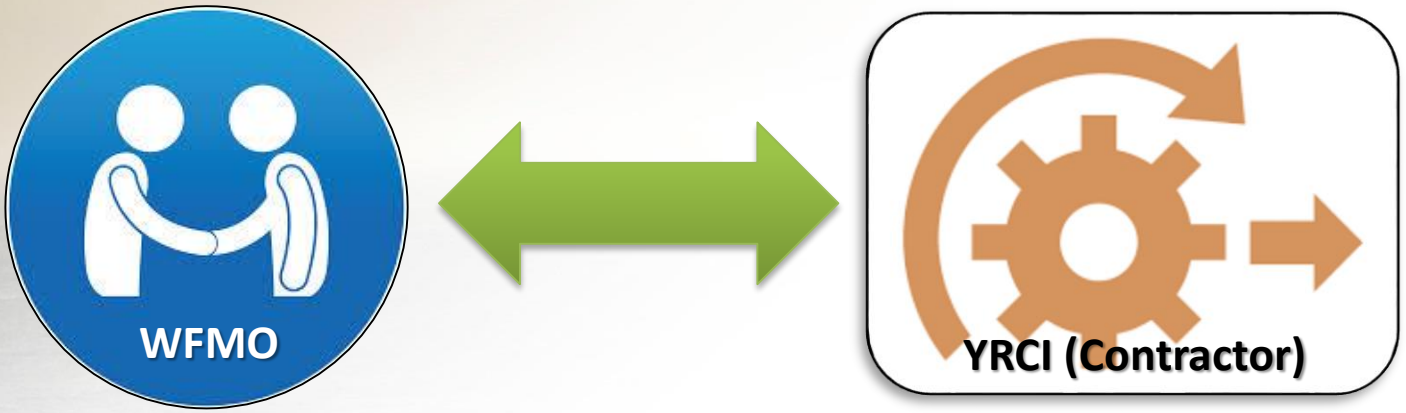
Procedures available by July 8

Implemented an Internal Promotion Process

Independent of WFMO process, will be bargained

NOAA WFMO Transformation

- WFMO is working to improve their processes.
- Preparing for DOC Shared Services



Will be co-located with Regional HQs & NCEP to support front-end processing of vacancy announcements

Will handle transactional work (e.g. posting job announcements)

Will help get the process back to the 80 day model.

Cross-Cutting Issues and Concerns: NWS Vacancies & Hiring

Impact:

- **Many field and HQ vacancies, critical to the success of Evolve, remain unfilled, increasing risk and overtaxing existing workforce as they attempt to fill critical gaps.**

Issues:

- **NOAA WFMO in the process of realignment**
- **Shared Services have not started yet—stop gap YCRI in place**

Help Requested from DOC:

✓ **Continued support to the DOC/NOAA Shared Services initiative**

APG: Day at which forecast loses useful skill (Goal for FY17 Q4 is 9.5 days)

Update	GEFS (12m)	GEFS3 (3y)
2000/12/31	6.89	
2001/12/31	7.56	
2002/12/31	7.23	7.23
2003/12/31	7.87	7.55
2004/12/31	7.49	7.53
2005/12/31	7.99	7.78
2006/12/31	8.22	7.9
2007/12/31	7.78	8
2008/12/31	8.3	8.1
2009/12/31	8.3	8.12
2010/12/31	9.75	8.78
2011/12/31	9.1	9.05
2012/12/31	9.52	9.46
2013/12/31	9.39	9.34
2014/12/31	8.92	9.28
2015/12/31	9.45	9.25
2016/06/30	9.96	9.39

Note:

1. Useful skill is projected (estimated) from every 24 hours forecast verification scores
2. GEFS year 2000 scores is projected from in-completed year (5/11/2000-12/31/2000)
3. GEFS – 12 months mean; GEFS3 – last 3-year mean

OWA Project Update

OWA Objectives

- **Propose a vision for a field structure design** that would enable NWS to evolve to meet the vision for a Weather-Ready Nation through Impact-Based Decision Support Services (IDSS), in light of challenges presented by the current field structure
- **Discuss path forward for NWS and NOAA** to support the transition to this model
- **Get feedback and answer questions** on the OWA analysis and insights

Executive summary

- In response to increasing sophistication of partners and of analysis and forecasting capabilities, OWA is **helping the National Weather Service become an increasingly customer-centric organization** focused on supporting partner decision-making that protects lives and property
- The **current NWS field structure is not designed to consistently support the "deep relationships" IDSS operating model**. The field structure is a one-size-fits-all, jack-of-all-trades staffing model, and has also resulted in siloed operations.
- To address these challenges, **NWS has aligned on a vision for a "Fully Integrated Field Structure,"** which is enabled by a collaborative forecast process, distributes IDSS staff to align to partners, develops cadres of focused, experienced warning staff, and aligns staff strategically for cross-cutting functions
- The vision could be achieved within current NWS staffing levels but **requires significant "unlocks" of staff capacity and will be achieved through a phased approach, not a "light switch event"**
- **NWS is building momentum internally and externally** to ensure the OWA project is tested, evaluated, and acted upon – NWS has already begun testing IDSS ideas, scheduled tests of a collaborative forecast process to begin in FY17, and started aligning resources given testing needs
- **Achieving this vision will require sustained attention from NWS and NOAA leadership** to make investments required throughout the test-evaluate-involve process and to navigate the political and cultural landscape, including Congress, core and deep partners, NWSEO (e.g., in upcoming CBA negotiations), NWS leadership, and staff

NWS is building on its science-based service operating model to achieve a Weather-Ready Nation

Linking NWS Forecasts and Warnings to Building a Weather-Ready Nation

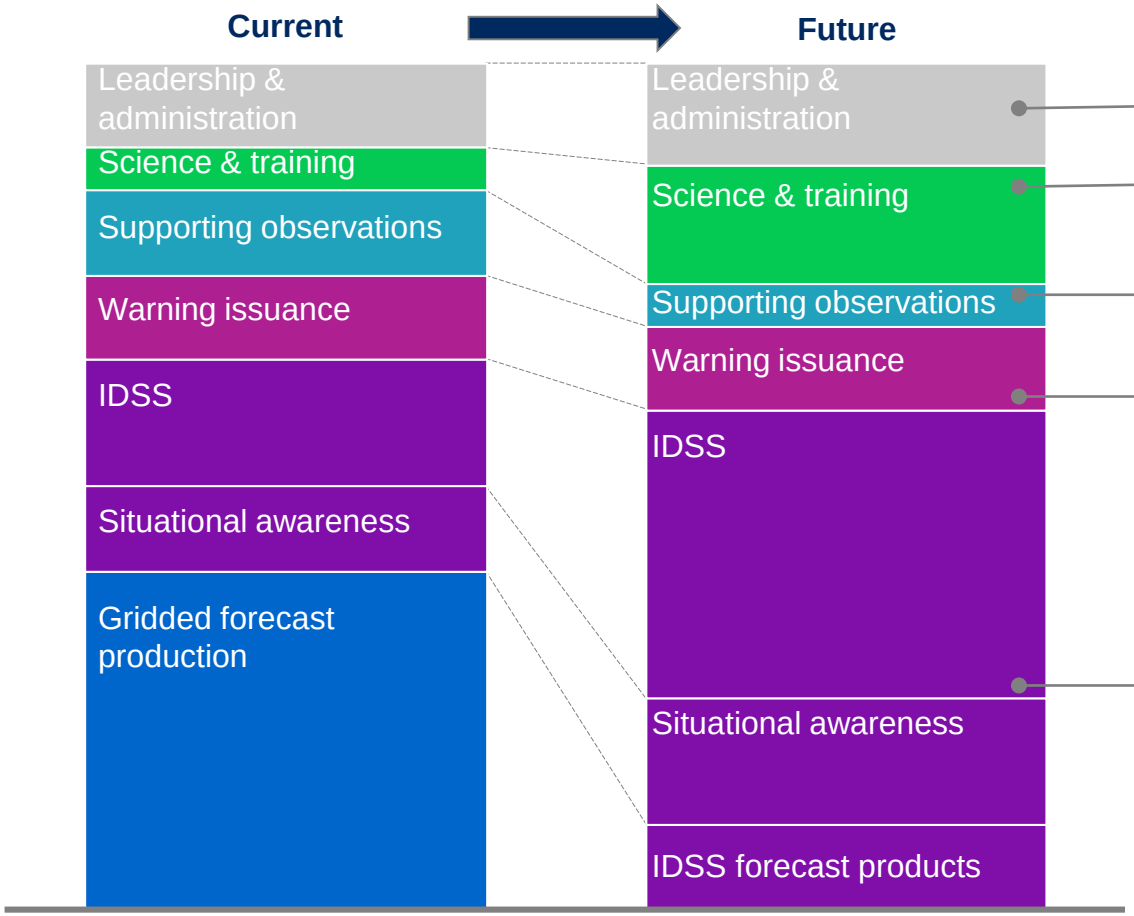
Delivering on the science-based service operating model requires additional changes to field office structure, workforce, and operations

From the operations and workforce of today …	…to an operations and workforce positioned for IDSS needs of tomorrow
"One size fits all" staffing based on requirements of the past	Staffing levels based on IDSS
"Jack of all trades" roles at WFOs	Strategic specialization of roles
Each office must fully support itself	Field offices in the same area support each other and their partners
WFO staff constrained by 24/7/365 shift requirements	Local staff operate business hours to match their partners
Staff operate forecast "desks"	Staff focus on areas of highest impact

SOURCE: OWA Strategic staffing team, June 2016

NWS has committed to shifting the way the field spends its time but must overcome challenges in the current field structure

Conceptual diagram of how a WFO spends its time[1]



Key challenges

- Span of control too high
- Limited dedicated support for R2O, O2R, and training
- Some systems support functions (e.g., COOP, IT) could be better managed across WFOs
- Difficult to develop given warning frequency in many offices
- Limited "bench" of warning experts given WFO staffing model
- 24/7 met watch at all offices is an inefficient use of resources
- Staff not positioned where needed most, and constrained by 24/7 ops
- Staff time for IDSS constrained by forecast production requirements

1 Based on best data available including standard role mix, position descriptions, and interviews; testing and evaluation in FY17 will quantify time saved; could vary across WFOs; 2 Not exhaustive; 3 Includes dissemination, AWIPS, QA/QC data, observations network maintenance, and autosonders as appropriate

SOURCE: Interviews and job shadowing during ~40 office site visits from May 2015 – January 2016

The Fully Integrated Field Structure effectively and efficiently aligns NWS resources to unleash the potential of its staff to protect lives and property

Future NWS field office functions and illustrative time allocation

Alignment in the Fully Integrated Field Structure

Strategic alignment of support through resource pooling increases dedicated support for key functions and collaboration across offices, while also ensuring as many staff as possible are available to serve partners

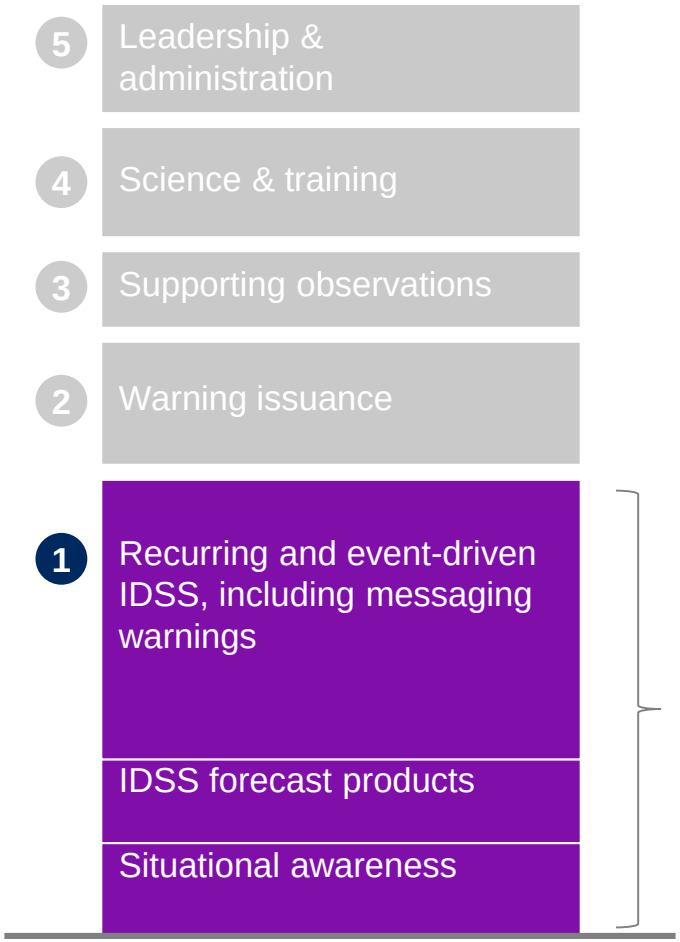
Focused, experienced warning staff. Expert warning staff would provide 24/7/365 warning production across CWAs related by climatology and partner needs. Warning staff time would be focused 100% on training, monitoring emerging situations, developing warning products, and communicating with IDSS staff

Distributed IDSS staff. IDSS staff would be distributed across the country according to core and deep partner needs. IDSS staff would operate under business hours unless needed overnight, and focus time on developing and providing critical forecast and hazard information, not general forecast production. IDSS would be based on a collaborative forecast process that layers expertise from national and local staff onto a central, common starting point without local grid editing

SOURCE: OWA Strategic staffing team, June 2016

1 Distributing IDSS staff according to partner needs ensures partners have access to expertise when they need it

Future NWS field office functions and illustrative time allocation



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SOURCE: OWA Strategic staffing team, June 2016

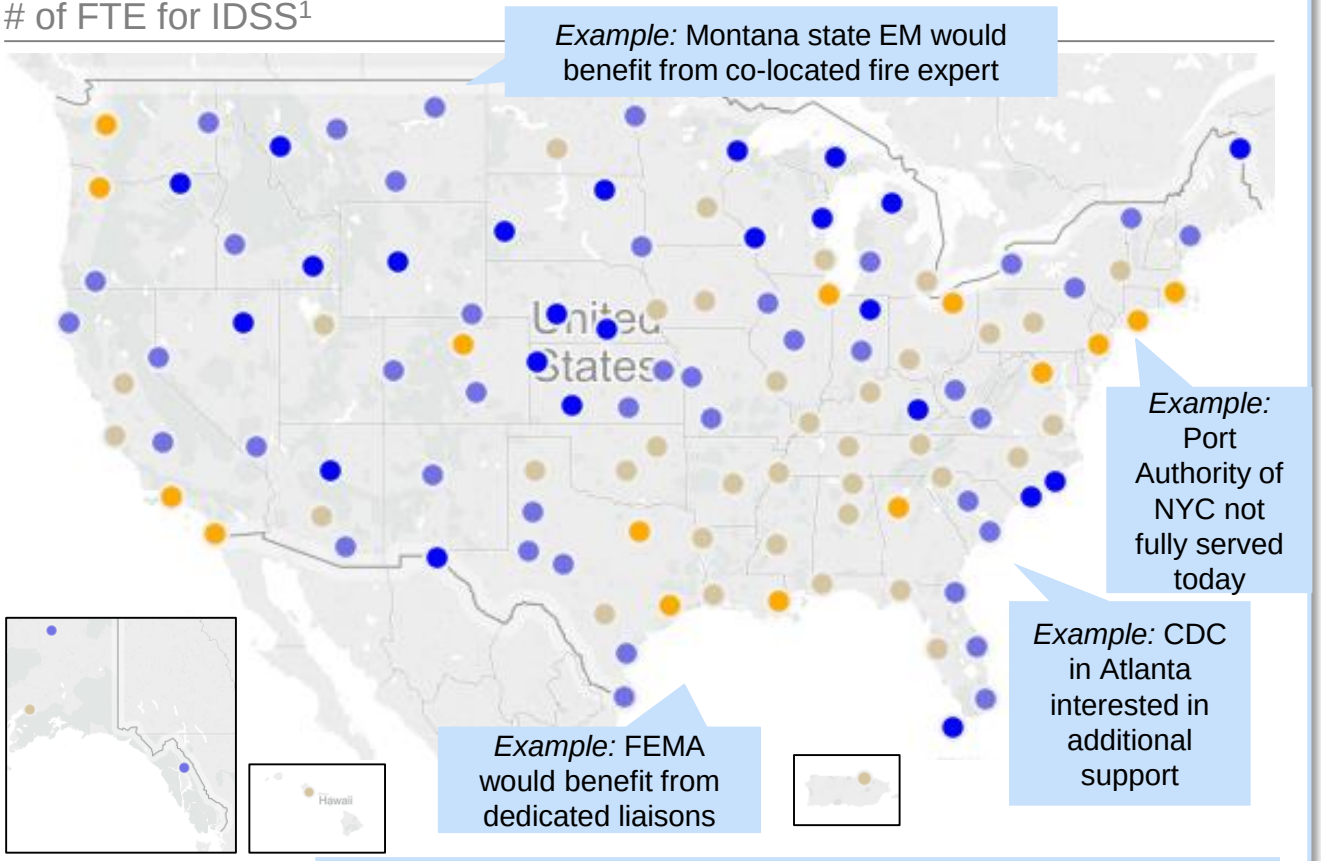
1 *One-size fits all staffing and operations.* NWS staff are not positioned to most effectively provide IDSS and meet the enhanced mission of protecting lives and property

PRELIMINARY

- NWS **estimated the demand for IDSS staff across the country** using workload drivers (e.g., weather type and frequency, population, partners) and benchmark estimates of number of staff needed to meet demand
- **IDSS demand is contingent on testing and evaluation**, including ongoing IDSS partner categorization

Preliminary estimate of capacity available vs demand for IDSS

of FTE for IDSS[1]



To be further refined based on IDSS tabletop exercises

1 Based estimates of IDSS need according to weather impacts, people and property at risk, and partner presence
SOURCE: OWA Strategic staffing team preliminary output, June 2016

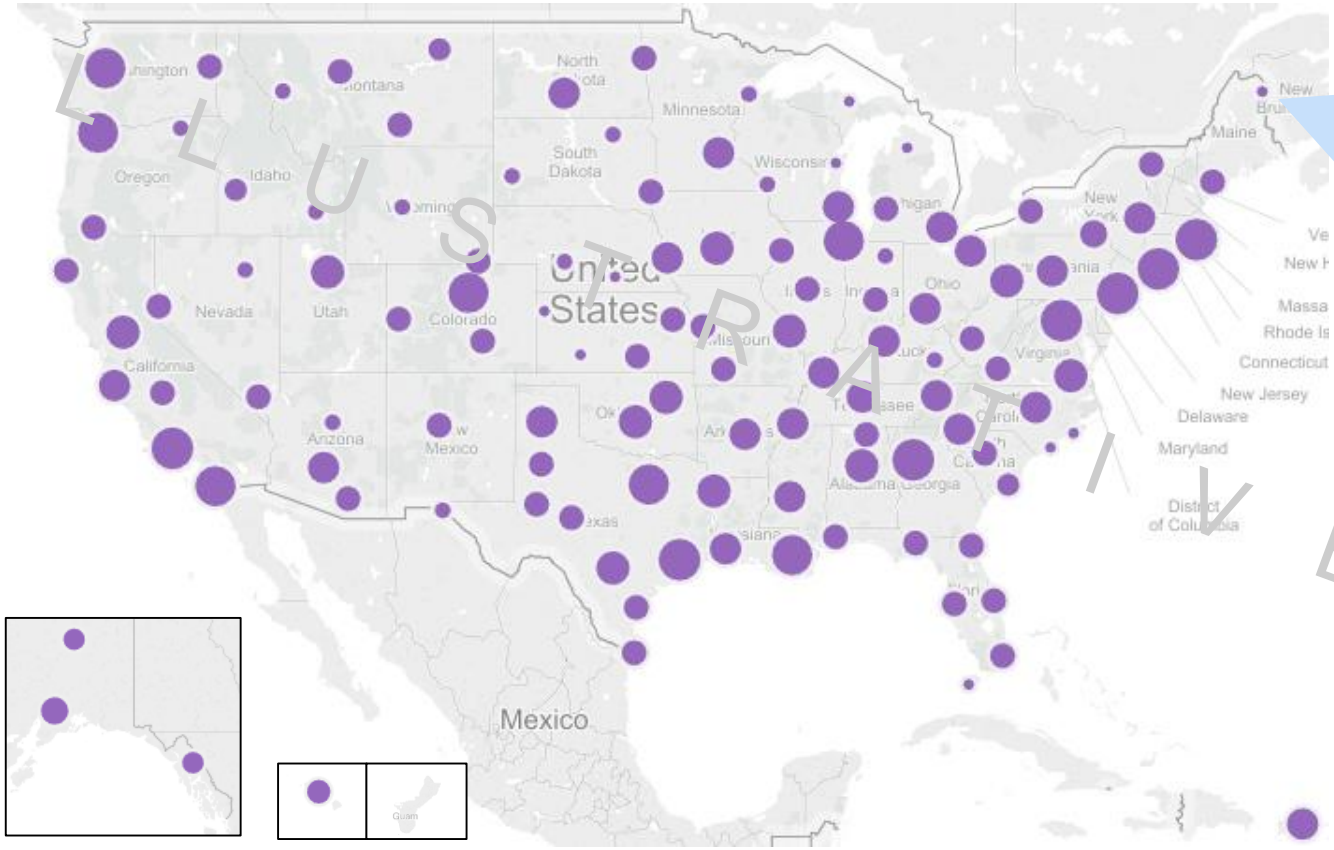
1 To best meet partner needs today, NWS could strategically position IDSS staff

ILLUSTRATIVE AND SUBJECT TO TESTING

Example distribution of IDSS staff based on partner demand today

of IDSS staff per office *(does not include staff for other functions)*

○ 3-5 ◯ 9-11
◯ 6-8 ◯ 12-16+



Partners would receive IDSS support greater than or equal to today, with 3-5 dedicated IDSS staff and surge support as needed from other offices

- Number of staff subject to testing and future demand
- Map only shows IDSS staff – additional staff are needed for other critical functions

SOURCE: Illustrative output based on OWA strategic staffing exercise, June 2016

2 Focused, experienced warning staff could enhance quality of warning products and services

Future NWS field office functions and illustrative time allocation

Focused, experienced warning staff. Expert warning staff would provide 24/7/365 warning production across CWAs related by climatology and partner needs. Warning staff time would be focused 100% on training, monitoring emerging situations, developing warning products, and communicating with IDSS staff

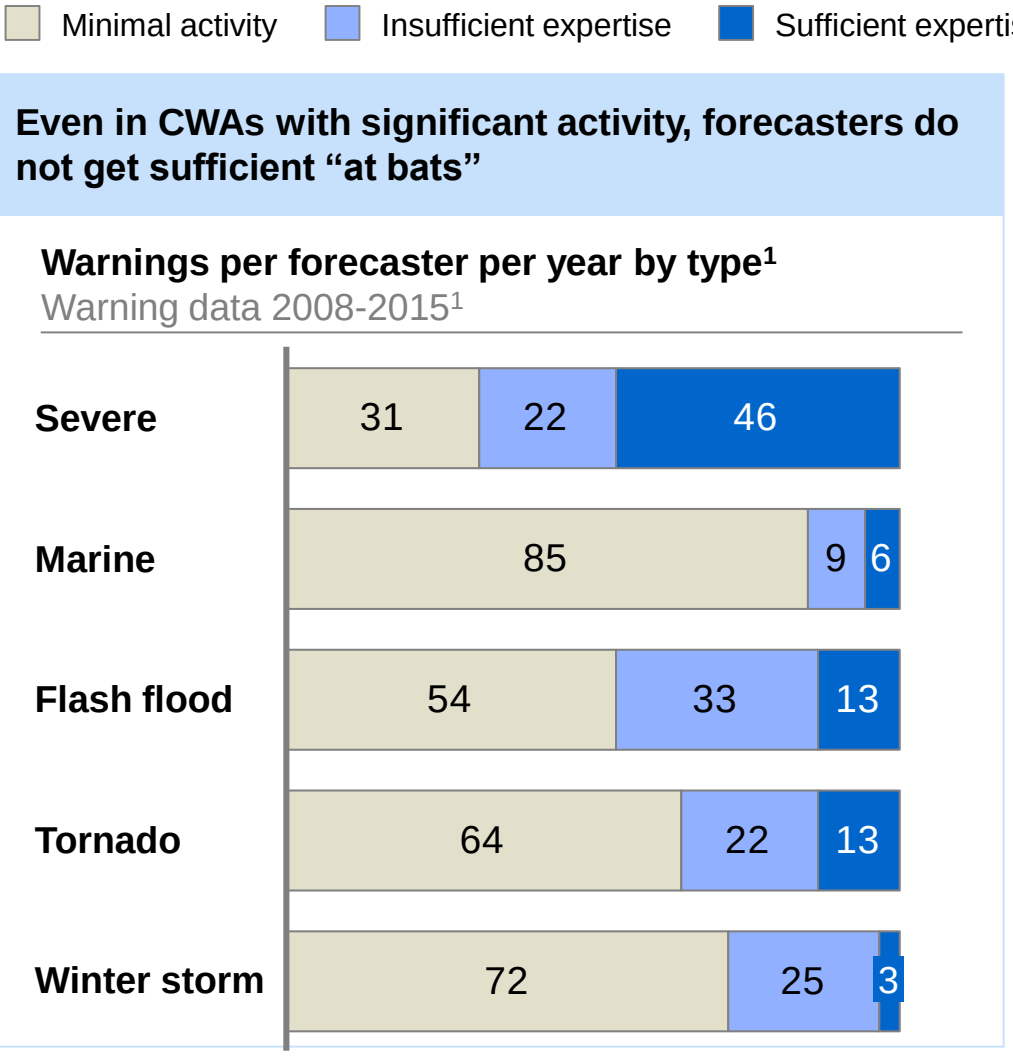
SOURCE: OWA Strategic staffing team, June 2016

2 *Jack of all trades staffing model.* NWS staff are not positioned to consistently develop expertise in warning production, sustain expert operations, and guarantee consistency

Current field structure does not ensure sufficient expertise

- **Insufficient warning volume** within at each WFO to provide each individual enough experience issuing warnings and ensure sufficient "depth of bench" at each WFO
- In fair-weather, **mets have to split attention** between monitoring for immediate-term threats and producing forecast
- **Multiple WFOs may issue warnings for related events**, and may do so under different guidelines

Even in CWAs with significant activity, forecasters do not get sufficient "at bats"



1 Based on full staffing of 12-14 mets per office, assuming mets need 1 warning per month for severe and marine warnings, 1 warning per month over 4 month season for flash floods, tornados, and winter storms

SOURCE: OWA discussions and analysis; NWS warning data 2008-2015

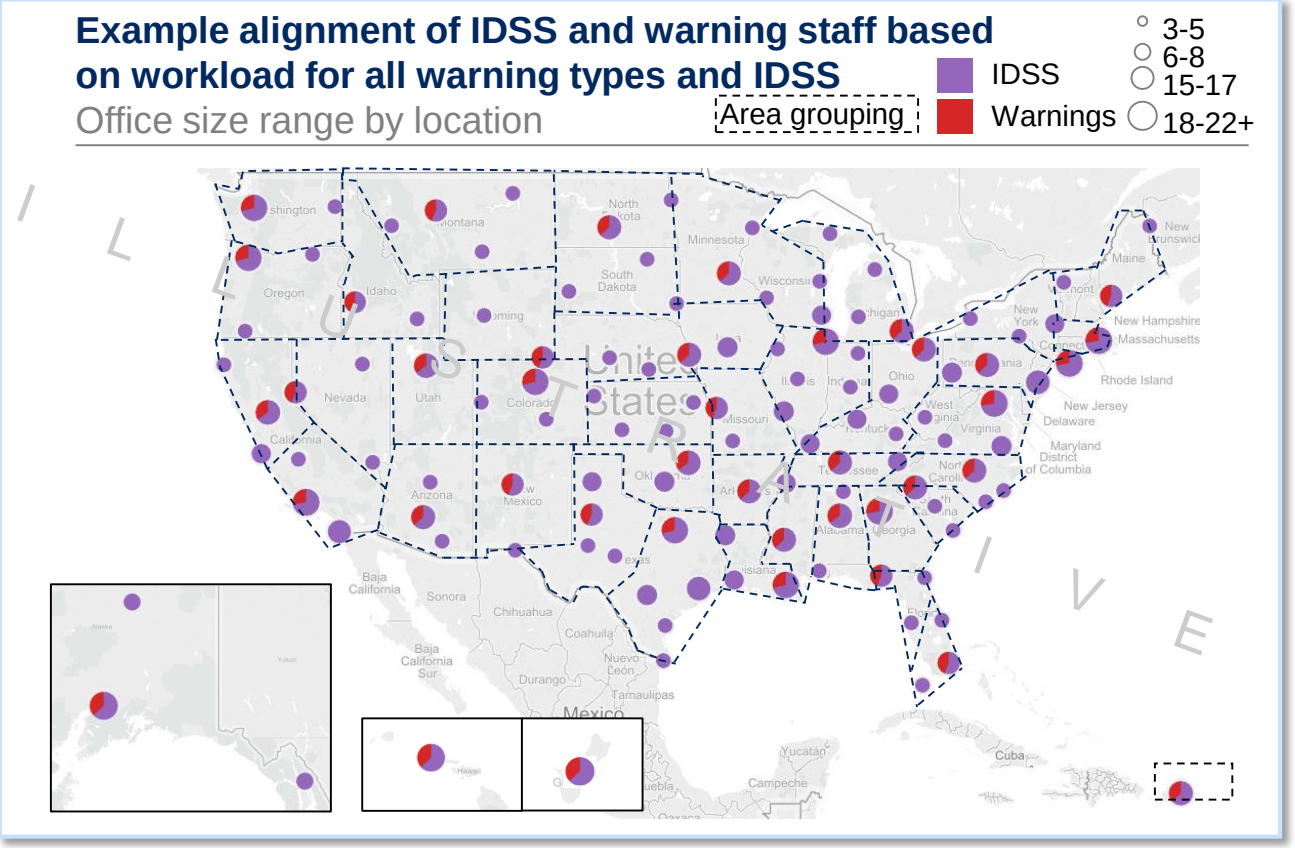
2 Dedicated warning staff would be positioned to develop high quality products and enable high quality service

ILLUSTRATIVE AND SUBJECT TO TESTING

- **Dedicated warning support would be provided by area**, with warning experts and IDSS experts involved in the process
- **This concept requires significant testing and evaluation:**
  - **Science-based tests** to ensure no degradation of lead time or accuracy
  - **Service-based tests** to ensure partners receive high quality information

Example alignment of IDSS and warning staff based on workload for all warning types and IDSS

Office size range by location

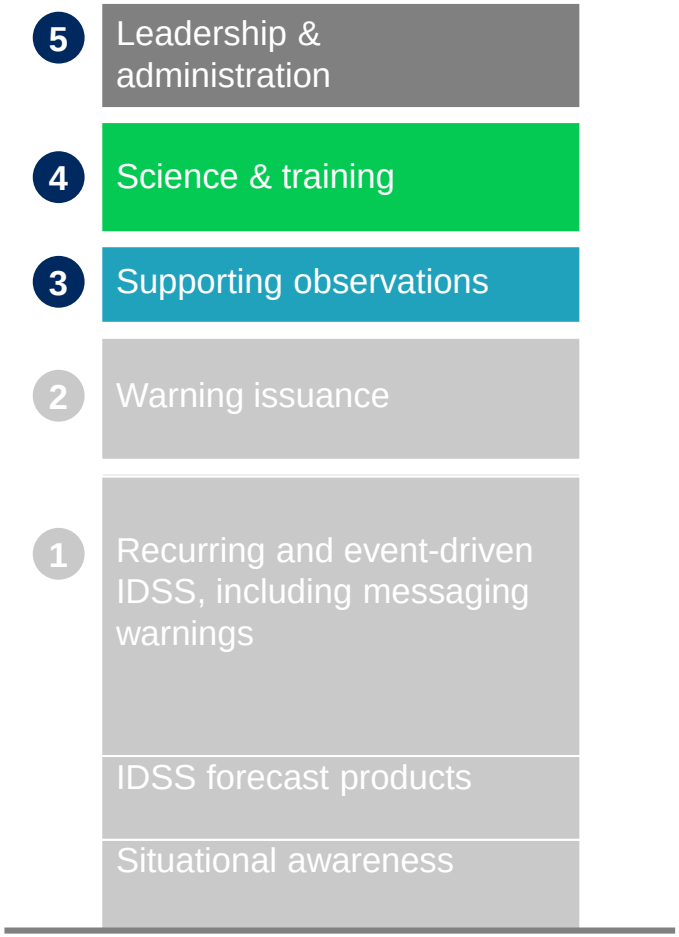


1 Office sizes vary within each range. Some office numbers include embedded and/or "satellite" staff
2 Grouped offices could collaborate extensively to provide best services to partners, (e.g., IDSS expertise, dedicated area warnings, and support functions). Groupings could balance workload (e.g., volume of warnings)

SOURCE: Illustrative output based on OWA strategic staffing exercise, June 2016

3-5 Strategic alignment of support staff can ensure maximum support for science-based service to partners

Future NWS field office functions and illustrative time allocation



Fully Integrated Field Structure approach

- **Groups of local offices (WFOs, CWSUs, RFCs) receive support for cross-cutting functions from dedicated coordinators in their area**
  - Observations network requires management above the CWA-level (e.g., COOP program, ensuring optimal coverage of ASOS sites)
  - Research to Operations (R2O) and Operations to Research (O2R) projects could be coordinated above the CWA-level, involving local staff as appropriate
  - Training could be coordinated above the CWA-level to ensure national training materials reflect local needs and all staff receive consistent training
- **Presence is maintained in offices for functions that require consistent on-site support**
  - Some IT and electronics maintenance functions
  - In-person training support
  - Administrative functions in large offices
- **Leadership span of control is brought down to 4-6 reports**
  - Additional supervisors would be identified for large offices

SOURCE: OWA Strategic staffing team, June 2016

3-5 NWS can strategically align its workforce to meet partner needs and achieve a Weather-Ready Nation

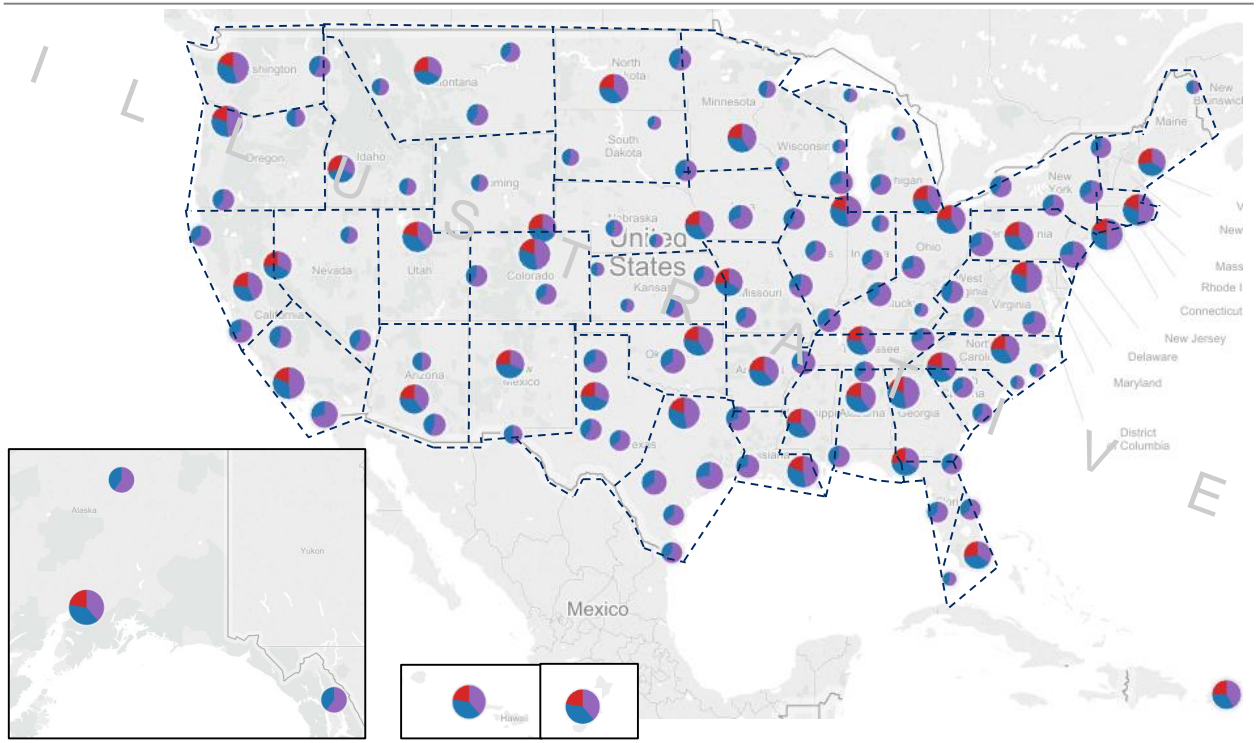
ILLUSTRATIVE AND SUBJECT TO TESTING

All core and deep partners receive increased support through:

- **IDSS from local experts** when and where needed
- **Focused, experienced warning experts** in their area
- **High quality forecasts** informed by expertise at all offices, including NCEP and NWC, based on a common operating picture

Example alignment of workforce to today's workload

Office size range by location[1]

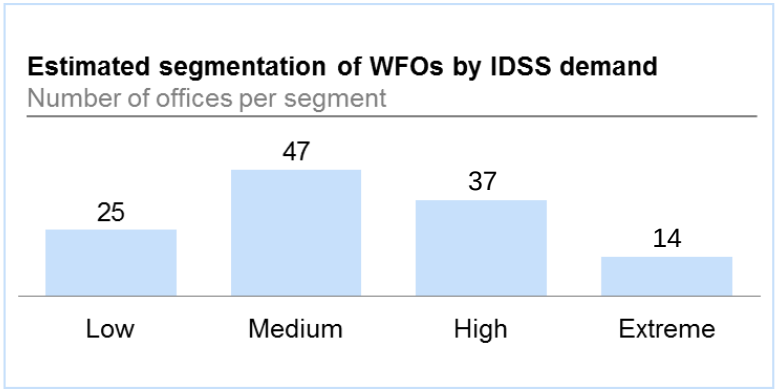


1 There are offices of all sizes within these ranges, and offices could include embedded / "satellite" staff
2 Includes staff for supporting observations, science & training, and leadership & administration

SOURCE: Illustrative output based on OWA strategic staffing exercise, June 2016

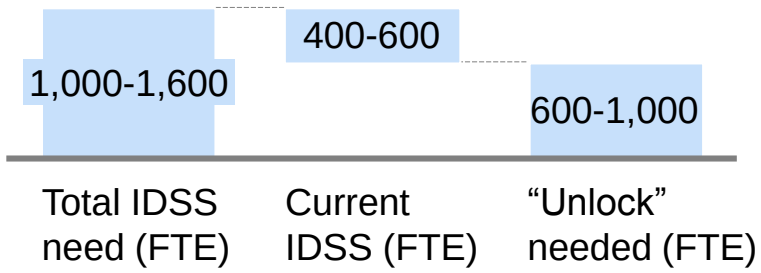
Initial estimates of IDSS demand – 2X today's resources for IDSS – suggest an "unlock" of NWS staff time is needed to support this operating model

NWS has estimated demand for IDSS today…



IDSS segments	Example offices and archetype features	Change in IDSS support level	Draft IDSS staffing range
Extreme IDSS demand	▪ Extremely high magnitude of impact and weather vulnerability (e.g., Mount Holly) ▪ Several high-demand customers (e.g., Sterling) ▪ Highest percentile population / population density (e.g., Oxnard)	⬆⬆	▪ 12-16+ IDSS staff
High IDSS demand	▪ High weather vulnerability (e.g. level/type of weather hazards) and high magnitude of impact ▪ Some high-demand customers (e.g. Albany) ▪ High population / population density (e.g., St. Louis)	⬆	▪ 9-11 IDSS staff
Medium IDSS demand	▪ Medium-high magnitude of impact (e.g., Spokane) ▪ Medium population/pop. density (e.g., Charleston) ▪ May have low vulnerability offset by some high-demand customers	⬆ OR ➡	▪ 6-8 IDSS staff
Low IDSS demand	▪ Low-medium magnitude of impact (e.g., Elko) ▪ Low population/pop. density (e.g., Caribou) ▪ Lack of additional high demand customers	➡ OR ⬇	▪ 3-5 IDSS staff

…which requires a resource "unlock"



- Based on IDSS segmentations, future IDSS demand could require 900-1,400 staff members worth of time (FTEs), as well as 100-200 FTEs for IDSS and support functions at other field offices (e.g., NCEP, NWC, RFCs, RHQs, ROCs)
- Currently, IDSS is being delivered by some dedicated staff, and a portion of other staff time, estimated to total ~400-600 FTEs[1]

1 Dedicated staff, for instance, are the 122 Warning Coordination Meteorologists (WCMs) and 13 Service Coordination Hydrologists (SCHs), and roughly 40 offices with a staffed IDSS desk at least 1 shift per day; of the additional ~1,800 mets and hydrologists in local offices, ~10-25% of their time may be spent on IDSS currently, putting total estimate of time spent on IDSS today at ~400-600 FTEs

SOURCE: OWA Strategic staffing team, June 2016; MIC survey, April 2016

NWS has identified several ways to achieve "unlocks" needed to provide deep relationships IDSS

Seven functional and form "unlocks" can provide significant flexibility for NWS field offices

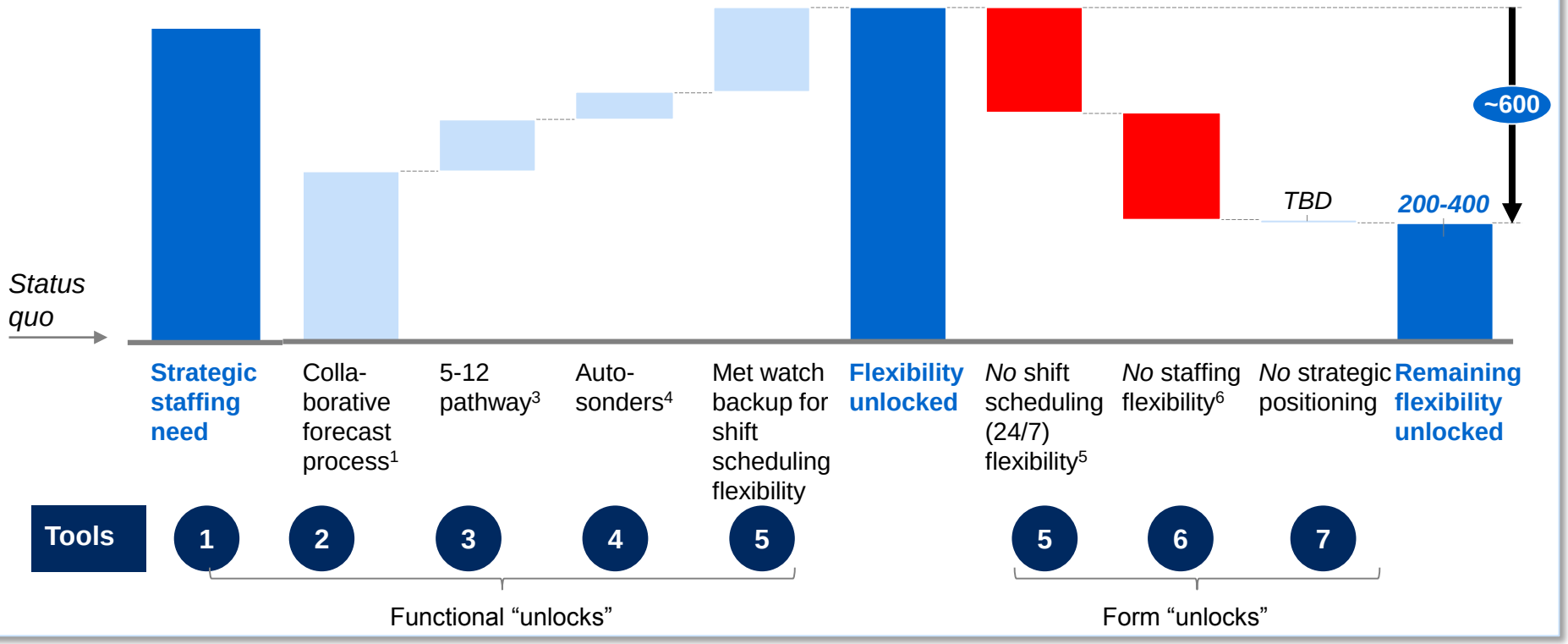
1	Strategic staffing	**NWS could move away from cookie-cutter staffing**, allowing staff to be distributed to meet partners where they are
2	Collaborative forecast process	Field offices could use a common operating picture to share expertise **– local forecasters focus on interpreting information for their partners**
3	5-12 pathway	Updated career progression for mets could **increase time spent by GS 5-11 meteorologists** contributing to IDSS
4	Autosonders	Automated launches could **increase flexibility for resources currently deployed for balloons specifically** (particularly for demonstration purposes in AK region)
5	Shift scheduling flexibility	**Office schedules could be set strategically to address partner needs,** so not all offices devote resources to staying open 24/7. Requires warning backup to be provided from another office, as well as on-call procedures
6	Staffing flexibility	**Offices could adjust rotation to best serve partners,** without requiring each shift to have two staff members
7	Strategic positioning	Locate offices and functions to **best serve partners and meet internal NWS needs** (e.g., IDSS staff near partners, maintenance staff near strategic needs)

SOURCE: OWA Strategic staffing team, June 2016

Each "unlock" contributes to the flexibility needed to meet demand for IDSS

Unlocked flexibility | Lost flexibility | PRELIMINARY

Tools used to achieve strategic staffing in the future operating model, FTE



1 Based on 2 shifts per day (4 FTE) per WFO focused on forecast production
2 Based on 1-2 shifts staffed overnight (2-4 FTE) at ~80 offices, and 1-2 evening shifts (2-4 FTE) at low offices (~25)
3 Based on 50% of GS-11s (180) become GS-12. Of additional intern time, 30% of intern time could be shifted to higher value IDSS activities
4 Assuming 3 FTE at each AK WSO, add'l 1 hr/day at 80 sites totaling 560 hrs/week (14 FTE at 40 hrs/week). Total of 50-100, if full contracting at all sites
5 Requires low IDSS offices (25) operating business hours to add two shifts per day, medium IDSS offices (47) to add one shift per day
6 Requires low and medium IDSS offices to add second person two shifts per day, high IDSS offices (40) to add second person one shift per day

SOURCE: OWA Strategic staffing team, June 2016

NWS will take a phased approach to transition to the vision – this will not be a "light switch event"

	Phase 1: Similar functions, more flexibility	Phase 2: Form and function evolution	Phase 3: Vision
Description	▪ Some strategic staffing via changes to requirements on staffing and in the forecast process	▪ Additional strategic staffing via changes to operating hours and improvements in forecast process	▪ Further flexibility via tailored locations and a fully implemented collaborative forecast process
"Unlocks" used	▪ **Some strategic staffing** ▪ **Collaborative forecast process** enables WFOs to limit grid production to high impact edits ▪ **5-12 pathway** generates additional forecasters at the GS12 level available for shifts ▪ **Shift staffing flexibility** increases mets available on day-time shifts ▪ **Autosonders** provide forecasters some additional time for IDSS	▪ **Additional strategic staffing** ▪ **Collaborative forecast process** further enables WFOs to reduce time spent on routine grid production, ▪ **Shift scheduling flexibility** gives offices option to match partner hours, with backup provided by office in area ▪ Fully use of **autosonders** ▪ **Some strategic positioning** of staff allows more in-person service	▪ **Full strategic staffing** ▪ **Collaborative forecast process** and further technology improvements allow WFOs to focus only on forecast products as needed for IDSS (e.g., spot forecasts) ▪ **Focused, expert warning staff** provide service to offices and partners in an area ▪ **Strategic positioning** of staff allows more in-person service
% of IDSS demand met	50%	65%	100%

SOURCE: OWA Strategic staffing team, June 2016

NWS will communicate with key stakeholders to gather input, involve them in tests, and support implementation

Legend: In person meeting | Email | Webinar

Clearance Step	Action	Date	NWS lead	Format
OWC and LU/LF	▪ Review and approve content during OWC	▪ Mid June	▪ OWA Core Team	
NOAA / DOC	▪ Support sharing plan ▪ Approve approach and content for OMB, Hill staff	▪ NOAA: July 11 ▪ DOC: July 25	▪ Furgione / Draggon	
External Stakeholders	▪ OMB Leadership Briefings ▪ Key Hill Staff Briefings ▪ Other stakeholders	▪ OMB: late July ▪ Hill: week of 7/25 ▪ NWA, IAEM, AMS, NAPA, NAS: late July	▪ NOAA Legislative Affairs	
NWS SES	▪ VTC NWS Directors' Brief	▪ Week of 8/1 or 8/8	▪ Furgione / Draggon	
NWS Managers NWSEO	▪ Distribute memo and slides to Managers and NWSEO ▪ Host a series of webinars	▪ Mid August	▪ OWA ▪ NWS Labor Team	
All Staff	▪ Attend webinar to learn about options; attend office meeting and share input	▪ Mid-late August	▪ OWA	

Local partner engagement by a mix of regional and national staff to follow the all staff briefings