

**NATIONAL WEATHER SERVICE INSTRUCTION 10-102**

**August 13, 2010**

**Operations and Services  
NWS Requirements, NWSPD 10-1**

**NEW OR ENHANCED PRODUCTS AND SERVICES**

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NOTICE: This publication is available at: <http://www.nws.noaa.gov/directives/>.

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SUMMARY OF REVISIONS: This directive supersedes NWSI 10-102, dated May 18th, 2006. This directive includes the following changes:

1. Updated OPR, Certifier and OCWWS Director
2. Enhanced Section 1 to better define the Purpose.
3. Enhanced Section 2 to provide more details about the Framework by adding subsections on Exemptions, Definitions and to add the concept of “Consistency of Services”.
4. The “Process Overview” subsection and associated figures were removed from Section 2 and integrated into Section 3 (Product/Service Development Process). Added reference to a cross NWS group review, explained role/connection to OSIP, and updated the process flow diagram.
5. Enhanced Section 3 to better define the steps necessary for “Product/Service” development.
6. Updated Section 4.2 to include SSD review
7. Updated Section 5 to add options for product disposition and to indicate OSIP dependencies for national products.
8. Enhanced section 6 to better define the operational implementation of national products and removed section on “Mandatory vs. Optional” products.
9. Updated Section 8 to indicate review availability.
10. Updated Section 9 for additional instructions for emergencies.
11. Added full list of acronyms, terms and their definitions to Appendix A.

Signed by  
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7/30/2010  
Date

**New or Enhanced Products and Services**

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1. Purpose. The purpose of this directive is to describe procedures (see Appendix I) for implementing an experimental product or service or making a substantial change to an existing operational product or service in the National Oceanic and Atmospheric Administration's (NOAA's) National Weather Service (NWS). Procedures in this directive are consistent with NWS Policy Directive (NWSPD) 1-10, Managing the Provision of Environmental Information, and its supporting Instructions. This directive does not cover procedures for notifying partners and other users about new, enhanced/modified, or discontinued products and services – those can be found in NWS Instruction (NWSI) 10-1805, National Service Change and Technical Implementation Notices. Objectives of these procedures in this directive (NWSI 10-102) are to:

- a. Establish an orderly process for documenting change to NWS products and services;
- b. Subject proposed products and service changes to external review and comment;
- c. Establish steps for evaluating comments and deciding if the product or service should be made operational (official), discontinued, or improved and reissued for new comments.
- d. Establish procedures for ensuring that innovative field efforts yield nationally comparable, mission-relevant products and services.
- e. Ensure that new products and services are in alignment with Department of Commerce (DOC), NOAA and NWS priority goals.
- f. Ensure that all new NWS enhanced products and services are introduced to their audiences in a manner that is most likely to benefit NWS partners and users.
- g. Ensure that NWS resources are directed towards the projects that will have the greatest benefit for NWS users and partners.

2. Framework. This section describes the applicability and exemptions of procedures in this directive, as well as definitions and principles for understanding the procedures.

2.1 Applicability. The procedures in this directive apply to new products/services as well as substantial changes (enhancements) to existing operational products/services. For purposes of this directive, the following do not reach the threshold of being “a substantial change to an existing operational product/service”

- a. Forecast and warning improvements to an already existing product/service, achieved through evolutionary improvements in NWS forecast processes and technologies
- b. Addition of one or more new forecast and warning locations to a current product/service, such that the scope of the product is changed in only a minor way (e.g., adding a Model Output Statistics [MOS] forecast bulletin for an additional forecast location.) Changing production of a product from local to region-wide or

from region-wide to include sites beyond the region is considered to be a substantial change.

- c. Revision of text product format, after the revisions have been coordinated with user and partners in accordance with NWS procedures.

For a complete definition of what constitutes a “substantial change” to an NWS product or service, see NWSPD 1-10.

2.2 Exemptions. A few classes of NWS products/services are exempt from procedures in this directive:

- a. Guidance products/services from the National Centers for Environmental Prediction (NCEP). However, such products are not exempt from requirements for public comment and review identified in NWSPD 1-10.
- b. Products/Services developed by the Federal Aviation Administration (FAA ) Aviation Weather Research Program (AWRP). Approval for experimental or operational implementation of these products/services on NWS systems may be steered by the joint FAA/NWS Aviation Weather Technology Transfer (AWTT) process, provided NWS timelines and requirements are met for documentation and user notification as outlined in this directive. Public comment and review of these products/services is still required (see section 7 of NWSPD 1-10).

2.3 Definitions. For purposes of this Directive, the following definitions apply. Additional definitions are included in Appendix A

- a. Existing Operational Product/Service – same as “current product/service” – a product/service currently issued on a national, regional, or local basis and defined in a product specification directive or a regional or local supplement.
- b. Experimental Product/Service – a “new product/service” – a product/service issued on a test, demonstration, or experimental basis.
- c. Enhanced Product/Service - Substantial change to an existing Operational Product/Service
- d. Local/Regional Product/Service – A product/service which satisfies a unique, local/regional need and which will be implemented at some subset of NWS offices, based on user need.
- e. National Product/Service – A product/service which will be implemented at all equivalent NWS offices according to the principles of “Consistency of Services” (see section 2.4).

2.4. Consistency of Services. NWS products and services will, to the maximum extent possible, be offered consistently across the country and seamlessly across regional boundaries. Variations in products/services (e.g. Wind Chill, Snow, Extreme Heat hazards, etc.) are acceptable in the following cases:

- Products and services offered in a particular program area (e.g., marine program) are not required by a particular NWS office due to geographical differences;
- A unique user need is identified at one or a subset of NWS offices;
- Thresholds for issuance of a particular product/service may be determined by local management and may vary from office to office or region to region. For example, if a “High-Impact Weather Graphic” were approved for national implementation, the graphic would only be provided when conditions are considered “high impact”—and this may vary from site to site.

Products/Services approved for national implementation, as described in section 6, will be available for issuance by all equivalent NWS offices (e.g., all Weather Forecast Offices [WFOs] or all River Forecast Centers [RFCs]). Local management may determine appropriate thresholds for issuance of nationally implemented products/services if not otherwise defined in an NWS directive.

To support the principles of “consistency of services” the following should be considered before deciding to make an enhancement to an existing operational product/service.

- a. If a “local/regional” product/service is not judged to be a “substantial change” (see directive 1-10) from an existing “national” product/service, the local product/service will not be produced. To ensure national consistency of services, changes will be made to the “national” product/service or not at all.
- b. If a “local/regional” product/service is judged to be a substantial change to an existing national product/service, a decision is made as to whether the new product/service will be delivered nationally. If this “local/regional” product/service is not delivered nationally, it may still be approved for local/regional use, provided it satisfies a unique local need.

3. Product/Service Development Process. A new or changed product/service begins as a concept or idea based on user needs/requirements. Once the idea has been formulated, but before development begins, the responsible office will ensure that the new or changed product/service is consistent with the NOAA Partnership Policy (see NWSPD 1-10). The five guiding principles of (1) mission connection, (2) consultation (3) open information dissemination (4) equity and (5) recognition of roles and others, are described in NWSPD 1-10. These five

guiding principles will be followed when considering whether a new product/service or a change to an existing product/service can be made.

The following steps will be taken in the product/service development process (See Figure 1):

- a. Develop product/service idea - Based on user requirements, an idea may be developed for a new product/service, or an enhancement to an existing product/service.
- b. Review guidelines (Appendix B) to ensure the proposed product/service is consistent with the NWS Mission and Policy.
- c. Review the National Catalog of New or Enhanced Products/Services (at <http://products.weather.gov>) and other available databases of ongoing development efforts (e.g., those managed by IAB or RITT) to ensure efforts are not already underway, or completed, on a similar product/service.
- d. Determine the appropriate geographic area (local, regional, or national).
- e. Preliminary investigational development - To determine if an idea has merit, staff will engage in limited investigational development, upon local management approval. There will not be significant expenditure of resources to carry out this development.
  1. If a substantial amount of effort will be required to develop software to be used in generating the product, the prototype output may be illustrated using presentation software (e.g., PowerPoint) or a graphics package.
  2. If the effort required to develop the software to produce at least key features of the product is considered minimal by local management, it may be appropriate to proceed with this limited development effort.
  3. External input may be solicited on the product/service. If output is provided to external users, the following will apply:
    - i. The output product/service will be clearly labeled as “For Demonstration/Test Purposes Only – Not to be relied on for Operational decision making”;
    - ii. The product/service will be provided for no longer than 90 days before information on the product/service is passed along for cross-NWS review (see item g, below). The cross-NWS review group will determine how long the product/service may be provided.

The purpose of this limited investigational development is to help validate that the proposed product/service will meet the user need, as intended, and that further development is warranted.

- f. Document the product/service idea - The user need/requirement and the proposed product/service will be documented. A draft Product Description Document (PDD)/Service Description Document (SDD) will be used to meet this need (see section 4). The draft PDD/SDD will identify, in the Mission Connection section, whether the product/service is intended to meet a unique local/regional user need or if it is intended for NWS-wide (National) implementation. Because the document is in draft form and will only describe experience with the product/service through preliminary investigational development, some sections of the draft PDD/SDD may describe future plans or intent for development activities (e.g., feedback method/period section may provide plans for how feedback will be obtained and for how long, instead of the actual feedback dates and survey link normally provided in the final PDD/SDD). The documentation will be submitted to OS1 (also known as the Office of Climate, Water and Weather Services [OCWWS] Operations and Requirements Division [ORD]). The draft PDD/SDD will not be made available publicly.
- g. NWS-wide Review/Decision - Under authority of the OCWWS Director, a cross-NWS group will review the user requirement and proposed product/service and determine whether it represents a truly unique local/regional user need or whether the product/service should be pursued for NWS-wide implementation. (*Note – for information on the cross-NWS group, please contact the New and Enhanced Products/Services Manager in OCWWS/OSI*). An additional purpose of NWS-wide review is to make the product visible within NWS and to provide a record of the product/service in the appropriate database repository. The members of the cross-NWS group will develop recommendations in coordination with input from regional meteorological services divisions (MSDs), scientific services divisions (SSDs), hydrologic services divisions (HSDs) and regional hydrology program managers.
  1. If the cross-NWS group verifies that the product/service addresses a unique local/regional user need, the originating Regional Director is named as the decision authority for the product/service and development and implementation will continue as described in Sections 4-6.
  2. If the cross-NWS group verifies that the product/service is suited for National implementation, further development will be pursued through the Operations and Services Improvement Process (OSIP) (see NWSI 10-103). A preliminary OSIP review will determine the extent of review and coordination that will take place within OSIP. Smaller, non-complex projects may be redirected to the standard development and comment/review process described in sections 4-6, below. For these products/services the OCWWS Director will be the decision authority. Larger, more complex projects may necessitate coordination through the full OSIP process where decision authority for implementation will fall to OSIP Gate 4. Prior to final implementation approval at OSIP Gate 4, the product/service will be documented and made available experimentally for comment/review, as described in Sections 4-6, below.

3. If the cross-NWS group cannot reach a decision (e.g., because more experience is needed with the product), then the period of investigational use of the product/service may continue for an additional period of time to be determined by the cross-NWS group.
4. The cross-NWS group may decide that development of this product/service should not be pursued further at this time or that the effort should be combined with other existing efforts.

After the above steps have been taken, work can begin on further development of the product/service and any required software applications. Accepted practices and applicable policies (e.g., change management procedures) will be followed. Developers should coordinate, as appropriate, with the designated development program manager who is responsible for activities such as identifying and managing development projects, facilitating coordination among developers, tracking progress and providing reports, and maintaining development management web pages. When development is complete, the draft PDD/SDD will be finalized to fully reflect the results of the final product/service produced (see Section 4).



## Managing Innovation in NWS

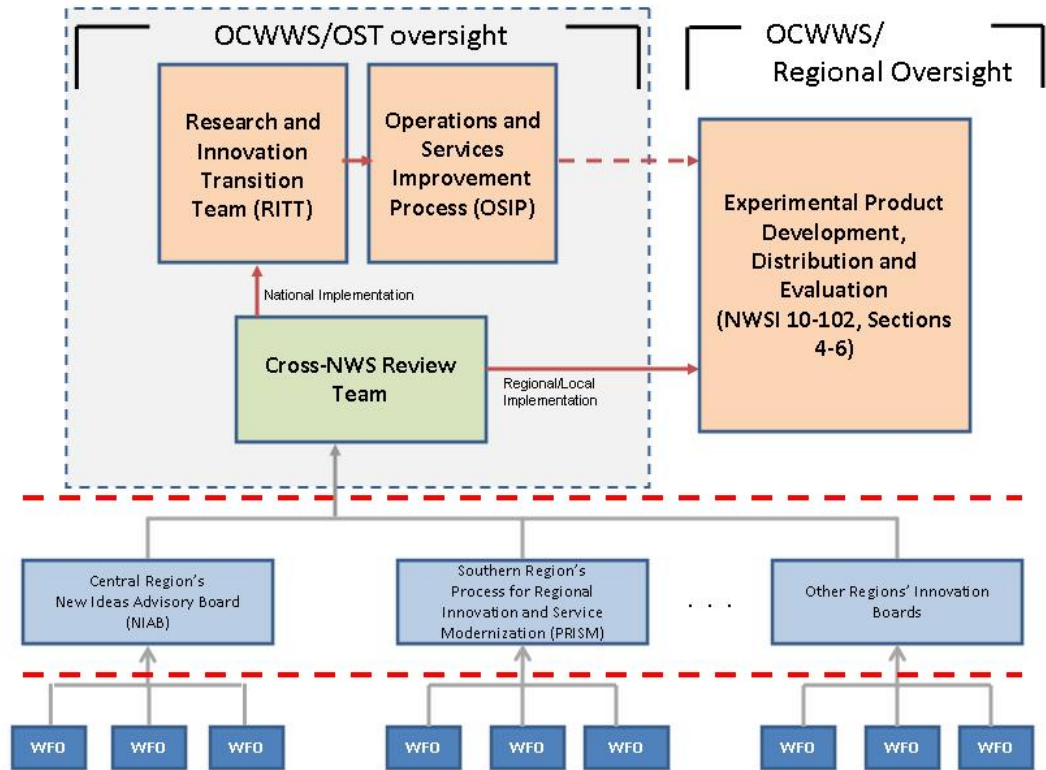


Figure 1 – New and Enhanced Products and Services Process as part of NWS-wide efforts to Manage Innovation

4 Product/Service Description Document. Description documents will include Product Description Documents (PDD) and Service Description Documents (SDD). These documents have two purposes:

- a. To provide official information to users and partners about the intent to provide a new or enhanced product/service that will initially be made available for comments/feedback during a specified time period. The PDD/SDD will describe the product/service content, format, intended purpose, and target audience.
- b. To point to the location where detailed information is provided for experimental or, in some cases, existing operational products/services.

Each PDD/SDD will be provided in the National Catalog of New or Enhanced Products on the Internet at <http://products.weather.gov>.

Note that checklists describing the entire procedure for submitting an experimental product or service for implementation or making a substantial change to an existing operational product or service can be found in Appendix I.

4.1 Format. The PDD/SDD has the author respond to the five journalistic questions (who, what, when, where, and why) to describe the content, format, and purpose of the proposed product/service. When modifying existing products/services or developing new ones, it is critical to understand the intended use of, and the mission need for the product/service. The PDD/SDD will have the following components:

- a. Mission Connection
  - (1) Product/Service Description
  - (2) Purpose/Intended Use
  - (3) Audience
  - (4) Presentation Format
  - (5) Feedback Method/Period
- b. Technical
  - (1) Format and Science Basis
  - (2) Availability
  - (3) Additional Information

A more detailed description for completing a PDD/SDD is included in Appendix B and example PDDs/SDDs are in Appendix C.

4.2 PDD/SDD Approval. Each PDD/SDD will be approved by the appropriate NWS Director(s) before a product/service is made available on an experimental basis. Approval by a regional director for a local/regional product/service will include review and validation of any scientific algorithm by the regional SSD. If the proposed experimental product/service involves

users in only one NWS region, the corresponding regional director approves the PDD/SDD. If the product/service involves NWS offices in more than one region, the PDD/SDD will be coordinated with the directors of all affected NWS regions, with final approval given by the director in the originating region. If a proposed experimental product/service involves a national product/service, it will include scientific review by OS&T and the OCWWS Director will approve the PDD/SDD. All PDDs/SDDs will be approved/disapproved by the appropriate director via a written response within 21 working days of receipt.

4.3 Submission of Approved PDDs/SDDs. The approved PDD/SDD, along with the associated Information Template (Appendix G), and a copy of the approval memo will be forwarded by the Regions or NWSH to the managers of the National Catalog of New and Enhanced Products/Services database via [NWSProducts@noaa.gov](mailto:NWSProducts@noaa.gov) (see Appendix I). OCWWS, Operations and Requirements Division (ORD or OS1), will maintain the catalog of PDDs/SDDs with links to all experimental products/services. Regional directors will provide to the OCWWS Director and ORD the latest PDD/SDD to ensure that the catalog is current. PDDs/SDDs will be submitted in Word or Adobe PDF format only. The database manager will link the PDD/SDD to the web site and will post the product/service to the catalog within 5 working days once all required information has been provided. NWSProducts will provide Strategic Planning and Policy (SPP) with the link to the PDD/SDD.

## 5. Experimental Product Distribution and Evaluation.

5.1 Distribution. Once the PDD/SDD is approved, the responsible office will begin distributing the product/service with the primary purpose of receiving partner/user feedback. The product's labels will clearly identify it as experimental (e.g., Experimental Precipitation Runoff Rate). If the product/service is available via the internet, the Uniform Resource Locator (URL) of the page will be included in the PDD/SDD. A locally-generated or national Public Information Statement (PNS) will be issued before distribution of any experimental product/service. The PNS will include a brief description of the product/service, Web address, evaluation period, and a point of contact.

5.2 Feedback and Evaluation. Procedures to use in obtaining feedback are outlined in Appendix D. Information needed to Request a Survey is provided in Appendix H. Evaluation guidelines are contained in Appendix F. At the conclusion of the feedback period, the approving NWS Director(s) will evaluate the experimental product/service, taking into account user feedback and determine if the product/service should be discontinued, reevaluated (resubmitted with changes), or permanently implemented.

5.3 Duration. The duration a product/service is allowed to be issued on an experimental basis will range from a minimum of 30 days to a maximum of 1 year. It is understood that some products/services (i.e., seasonal, climate, etc) could require more time, but the majority should be completed within a year, with a longer comment period granted on a case by case basis by the ORD. Not later than 90 days after the end of the comment period, the deciding/approving official, as defined in sections 6.1 and 6.2, will make a decision regarding the product/service based on an analysis of the evaluation information. If the ORD does not receive the decision after the 90 day period has ended, a reminder will be sent to the deciding official requesting the

decision within 15 working days. If no response is received after the 15 day grace period the product/service will be considered to be in violation of NWSI-10-102, and the process to discontinue the product will then be initiated. For National products/services, the final decision on operational implementation will be made by the OCWWS Director or in conjunction with OSIP Gate 4, as appropriate.

Decisions will result in one of the following actions:

- (1) declare the experimental product/service operational,
- (2) discontinue the experimental product/service, or
- (3) re-submit the product/service for another comment period. A decision to re-submit the product for another comment period may be appropriate if
  - (a) the product/service was submitted as a local and/or regional product/service, but is going to be considered for implementation as a national product/service;
  - (b) the comments have revealed a need to change the product/service, and a revised product/service is going to be made available for another comment period; or
  - (c) in rare cases, if the conditions during the comment period have not produced a sufficient number of representative cases.

When a product/service is re-submitted (see Appendix I), the PDD/SDD will be revised if the product/service is changed, and comments submitted during the original comment period will still be applied to the re-submitted product/service.

After the comment period, the product/service will be discontinued, re-submitted or made operational (official). (See Appendix I for the procedures make official, discontinue or re-submit the product/service)

6. Approval for Operational Use. Once the experimental phase has been completed and the product has been approved, an updated PDD/SDD will be submitted to OCWWS (OS1) for posting (see Appendix I). The database manager will post the updated PDD/SDD to the official section and remove the old PDD/SDD from the experimental section of the National Catalogue of New or Enhanced Products/Services. OCWWS (OS1) will provide a copy of the updated PDD/SDD and any decision/evaluation documentation to the SPP.

6.1 Local/Regional Products/Services. Regional directors will approve/disapprove new products/services or product/service enhancements intended for local use. Regional products/services for users in more than one NWS region are approved by all appropriate directors. A copy of the product/service evaluation (see Appendix F) will be kept on file by all approving directors and a copy sent to: [nws.infoservice.changes@noaa.gov](mailto:nws.infoservice.changes@noaa.gov) and [nwsproducts@noaa.gov](mailto:nwsproducts@noaa.gov).

6.2 National Products/Services. The OCWWS Director will have the authority to approve or disapprove new products/services or enhancements to products/services intended for national operational use (this includes the National Centers). For those national products/services

proceeding through the full OSIP implementation process, OSIP Gate 4 will provide the implementation decision. When OSIP reaches a final decision to approve or disapprove a product/service, the OCWWS Director will document the decision in a memorandum. A copy of the product/service evaluation (see Appendix F) will be provided to all affected NWS units and a copy sent to: [nws.infoservice.changes@noaa.gov](mailto:nws.infoservice.changes@noaa.gov) and [nwsproducts@noaa.gov](mailto:nwsproducts@noaa.gov).

6.3 Operational implementation of national products/services. Products/services approved for national implementation will be available for issuance by all equivalent NWS offices (e.g., all WFOs or all RFCs). OCWWS and Regional Program Managers will collaborate in providing implementation guidance to all relevant NWS offices. Local management may determine appropriate thresholds for issuance of nationally implemented products/services, if not otherwise defined in an NWS directive.

6.4 Notification. Partner/users will be provided 30 days notification prior to discontinuing an experimental product/service or converting an experimental product/service to an operational product/service. Notification will be made by issuing Public Information Statements (including Service Change Notices [SCN] and Technical Implementation Notices [TIN]) for the application dissemination pathways (e.g., Family of Services, NOAA Port, EMWIN) through coordination with NWS Headquarters (NWSH) and the responsible offices. This includes any product/service that is only available via a Web page. If applicable, notification will also occur on the Web site containing the product/service.

6.5 Directives Review/Official Product Designation. The appropriate service program manager under the approving NWS Director at regional or national headquarters will ensure that necessary changes are made to an existing directive or that a new directive is added to cover the new/enhanced product or service. When all required changes are complete, the operational product/service will be designated as an official NWS product/service.

7. Umbrella PDDs/SDDs. PDDs/SDDs exist which contain several sub-elements (i.e., aspects or features of a product/service) under a parent PDD/SDD. Normally a one-to-one correspondence between a product/service and a PDD/SDD is required to provide adequate documentation for all products/services, including both “policy” documentation (why we produce it, connection to mission, etc.) and “technical” documentation (techniques used to produce it, format description, etc.). Under an Umbrella PDD/SDD one general document may be written for the overall product/service (e.g., NDFD). Included within the umbrella PDD/SDD are references or links to other documents that may be, for example, regional or optional national. Web links can simply link back to the “umbrella” PDD/SDD for the description of all of the applicable general information required, leaving only the specifics about the individual element in the “attachment.” Using cross-links in a uniform way can improve the readability of every parent/child PDD/SDD, avoid duplicating information in multiple locations, and show more clearly how the information in any product/service is related to the information in other products/services.

8. Feedback on Operational Products/Services. NWS will ensure ongoing user feedback capabilities on all official products/services are available and reviewed on a scheduled basis.

8.1 Feedback Statements. For products/services that lend themselves to the inclusion of a statement requesting feedback, the statement will include the name of the person responsible for receiving feedback for each specific product/service and instructions on how to submit comments.

8.2 Periodic Feedback Notices. For products/services that do not lend themselves to the inclusion of such a statement, periodic notices via Public Information Statements and/or other appropriate mechanisms will be transmitted on the same data stream as the products/services in question.

8.3 Feedback Review. Each person responsible for receiving feedback will review the feedback at least annually and, when necessary, pursue modifications to the product/service.

9. Provision for Emergencies. When the need to protect life and property requires emergency dissemination of NWS information in a form other than an official product/service, the responsible office will do so. If the office(s) involved intend to continue issuing this information as a new product/service, the provisions of this Directive will be followed within 30 days after the emergency has ended.

## **APPENDIX A**

### **Definitions**

**AWRP** - Aviation Weather Research Program

**AWTT** - Aviation Weather Technology Transfer

**Consistency of Services** – NWS products and services will, to the maximum extent possible, be offered consistently across the country and seamlessly across regional boundaries. Variations in products/services are acceptable in the following cases: (1) Products and services offered in a particular program area (e.g., marine program) are not required by a particular NWS office due to geographical differences; (2) A unique user need is identified at one or a subset of NWS offices; or (3) Thresholds for issuance of a particular product may be determined by local management and may vary from office to office or region to region.

**DOC** – Department of Commerce

**Data Service** - Any capability provided by NWS for users to interactively access a subset of NWS data.

**EMWIN** - Emergency Managers Weather Information Network

**Enhanced Product/Service** – Substantial change to an existing Operational Product/Service – a major change to a current product/service, for example, involving use of an entirely new delivery mechanism – e.g., display of current text product information in graphical form on the Internet. See NWSPD 1-10, for guidance on what is considered a “substantial” change.

**Experimental Products/Services** – Products/Services available for testing and evaluation for a specified, limited time period for the explicit purpose of obtaining user feedback.

**FAA** – Federal Aviation Administration

**Guidance** - Forecast models and tools used by forecasters in creating official forecast products

**HSD** - Hydrologic Services Division

**Local Operational Implementation** - A locally generated product/service produced at one or several NWS site(s) for a sub-national user-defined area that often extends across NWS regional boundaries

**Local/Regional Product/Service** – A product/service which satisfies a unique, local/regional need.

**MSD** – Meteorological Services Division

**NCEP** - National Centers for Environmental Prediction

**NOAA** – National Oceanic and Atmospheric Administration

**NWS** – National Weather Service

**NWSH** – NWS Headquarters

**NWSI** – NWS Instruction

**NWSPD** – NWS Policy Directive

**National Product/Service** – A product/service which will be implemented at all equivalent NWS offices according to the principles of “Consistency of Services” (see section 6.3)

**National Operational Implementation** - A locally generated product/service produced at all sites of the same Operational type (e.g., WFOs, centers) for users nation-wide

**OCWWS** - Office of Climate, Water, and Weather Services

**ORD** – Operations and Requirements Division

**OS1** – Office of Services, number 1 (i.e. the Operations and Requirements Division)

**OSIP** - Operations and Services Improvement Process

**Official Products/Services** - Operational products/services defined in NWS policy

**Operational** - Produced on a reliable and continuous basis

**PDD** – Product Description Document

**PNS** – Public Information Statement

**Partners** - Companies, corporations, vendors, agencies, universities, etc., that associate with NWS in the distribution of weather information

**Product** - Any collection of NWS information in a defined format

**RFC** – River Forecast Center

**SCN** – Service Change Notice

**SDD** - Service Description Document

**SPP** - Strategic Planning and Policy



**SSD** – Scientific Services Division

**Service** - Any method for providing NWS information

**TIN** – Technical Implementation Notice

**User** - an individual, government agency, or other entity which obtains and applies NWS water, weather, and climate information and services.

**WFO** – Weather Forecast Office

## APPENDIX B

### Guidelines for preparation of Product Description Documents (PDDs) and Service Description Documents (SDDs).

1. Introduction. This appendix provides the document format required to describe experimental (new or enhanced) and official NWS products/services. Advances in science and technology [e.g., Interactive Forecast Preparation System (IFPS), National Digital Forecast Database (NDFD), and Advanced Hydrologic Prediction Services (AHPS)] provide the capability to produce better information in multiple formats for use by users and partners. We consider the content and format of proposed new products/services to ensure they meet our mission, effectively convey information, and are understandable and consistent in format.
2. Guiding Principles. NOAA acts in a fair and evenhanded manner and in accordance with NOAA's Partnership Policy. To maximize fairness and openness, we will follow the six principles outlined in NWSPD 1-10, section 3.
3. Detailed explanation of Product/Service Description Document
  - 3.1 Part I – Mission Connection. A brief description of the product/service as well as responses to questions designed to stimulate thought about content and format plus rationale for the product or service.
    - a. Product/Service Description – Provide a brief description of the experimental product/service.
    - b. Purpose/Intended Use – Why should the NWS produce this information? Is the product/service available to our general mission or to a well-established area of service?

Keep in mind:

- (1) There are specific areas where NWS has been prohibited from providing services (e.g.):
  - (a) Specific agricultural forecasts
- (2) New products/services should be developed to satisfy valid user needs and/or requirements
- (3) Products/Services created to support another government agency's mission should document the request from that agency.

- c. Audience – Who is the intended audience for the product/service? For example, is the product/service intended for the general public, for the government decision makers, etc. Remember to consider the principles in section 3 of NWSPD 1-10. In general, specialized products/services for a limited number of users (e.g., for a particular industry group or company) are not allowed.
- d. Presentation Format – How is the information presented (e.g., text, graphic) and why have we chosen to present it in this manner?
- (1) We should aim to make currently available forecast information readily accessible, usable, and understandable.
  - (2) We should aim for presentations of forecast information to be consistent nationally.
  - (3) Presentations in a proprietary format are generally not acceptable. Stick to formats which are widely accepted as standards (e.g., GRIB, HTML, XML, KML/KMZ for geo-referenced data).
  - (4) We should not expend resources to produce “cool” or “cute” presentations of information if no specific benefit is provided.
- e. Feedback Method – Describe how feedback can be provided on the experimental product/service

Provide the following information:

- Point of contact for information on the product/service. For example, the person who originally developed the product/service.
- Name of point of contact’s office.
- Office address.
- Telephone number for point of contact.
- Email address for point of contact.
- Dates of Comment Period
- Link to survey, if one is being used

Describe where comments on the new product/service can be registered and how they will be addressed. Follow the guidelines in Appendix D of NWSI 10-102 for collecting feedback on experimental products/services from the user community.

### 3.2 Part II – Technical Description

- a. Format and Science Basis – Provide a brief description of the product/service format. What type of software is required to decode and/or display the product/service? Be sure to include whether it is one of the following:
- Text or graphically disseminated over an NWS-supported system. Include the format for the product/service data, e.g., ASCII, JPG, etc. Optional: provide an example which can be uploaded.

- Image or data displayed via the Internet. Provide the URL where the product /service can be accessed. Briefly describe any capabilities that users may need to custom configure for the product/service to meet their own needs.
  - Briefly describe the science basis for the product/service as well as its technical limitations (e.g., what it can and cannot do). What input data are used to generate the product/service (e.g., model output)?
  - Describe why the product/service presents information in the selected format (e.g., text, graphic, probabilistic). Keep the following in mind:
    1. Make currently available forecast information readily accessible, usable, and understandable
    2. Make presentations of forecast information consistent nationally.
- b. Availability – Describe: When is the information available? How often is the product/service updated?
- c. Additional information – Include any other pertinent technical detail, such as:
- (1) Who created the product/service (person, office)?
  - (2) What data are used to generate the product/service (e.g., model output)?
  - (3) Software package that can be used to decode or display the product/service.
  - (4) References to relevant technical or scientific publications (e.g., UGC or VTEC) and Directives

**APPENDIX C**  
**Examples of PDDs/SDDs**

**NATIONAL MULTI-SENSOR PRECIPITATION ESTIMATES WEB-BASED  
EXPERIMENTAL SERVICE**

**Part I - Mission Connection**

a. Product Description - The National Weather Service (NWS) collects rainfall data to support its forecast and warning operations. Individual River Forecast Centers (RFCs) and Weather Forecast Offices typically provide rainfall collectives in text format and graphical format for their areas of responsibility. This service provides unified precipitation estimates for the continental United States (CONUS) and Puerto Rico on the Internet. The service includes graphics that display these precipitation data, as well as the ability to download the information in GIS and netCDF formats.

This suite of graphics includes precipitation for the last day, last 7-days, last 14-days, month-to-date, and year-to-date. Monthly and yearly archives will be maintained. Except for the 1-day duration, graphics of the normal precipitation, percent of normal precipitation, and departure from normal will be generated. Note that other durations may be made available in the future.

b. Purpose - Quantitative Precipitation Estimates (QPE) Graphics are representations of rainfall that has occurred for a specific length of time. Currently, each office prepares its QPE graphics using different colors, precipitation thresholds, and geographic projections. By producing these graphics centrally, it will enable the public to compare data across the CONUS and Puerto Rico.

Parameter-Elevation Regressions on Independent Slopes Model (PRISM) climate data from a cooperative venture between Oregon State University and the United States Department of Agriculture-Natural Resources Conservation Service provides a grid format of normal precipitation. More information about PRISM can be found at <http://www.ocs.oregonstate.edu/prism/docs/przfact.html>.

c. Audience - The target audience for these graphics is wide ranging. Partners, such as the Army Corps of Engineers, the U.S. Geological Survey, the Federal Emergency Management Agency, the U.S. Department of Agriculture, the National Park Service, state emergency managers, and river authorities have areas of responsibility that span states and often River Forecast Centers. The centralized location of these graphics makes it easy for these partners to view precipitation data for a wide area. Water resources managers and climatologists can use the departures/percent of normal information for drought monitoring and climatological applications. Use will not be limited to those interested in large areas, however. Local emergency managers and the general public will also use these graphics to evaluate conditions at the local level.

d. Presentation Format - The Precipitation Graphics are web-based graphics, and can be viewed at the following URL:

[http://www.srh.noaa.gov/rfeshare/precip\\_analysis\\_new.php](http://www.srh.noaa.gov/rfeshare/precip_analysis_new.php)

The information can also be downloaded in GIS and netCDF formats.

e. Feedback Method - We are always seeking to improve our services based on user feedback. Comments regarding the National Multi-Sensor Precipitation service should be sent to the feedback email address on the graphics webpage.

Comments may also be provided to:

Arkansas-Red River Forecast Center  
10159 E. 11<sup>th</sup> Street, Suite 300  
Tulsa, Oklahoma 74128-3050  
Attn: Ken Pavelle  
918-832-4109  
[SR-TUA.Precip@noaa.gov](mailto:SR-TUA.Precip@noaa.gov)

Experimental Feedback Period: November 14, 2005 through June 16, 2006.

## **Part II - Technical Description**

a. Format and Science Basis - Rainfall data (gage) are collected from cooperative observers and data collection networks such as GOES Data Collection Platforms and Automated Surface Observing Systems (ASOS). Hourly precipitation estimates from WSR-88D NEXRAD radar are compared with gage precipitation and satellite-derived estimates to derive a multi-sensor precipitation estimate. Using 24-hour multi-sensor precipitation files generated at the CONUS RFCs, software written in C is used to prepare the web-ready precipitation suite for the CONUS and Puerto Rico. Web browsers using standard Hypertext Markup Language (HTML) can be used to display these graphics. A sample graphic is shown in Figure 1. Users can also download the observed precipitation information in shapefile and netCDF formats for use in their projects or research.

b. Product Availability - The Precipitation Graphics are routinely updated twice daily.

c. Additional Information – Please click on the “About NWS Precip Analysis” tab at the top of the graphics webpage.

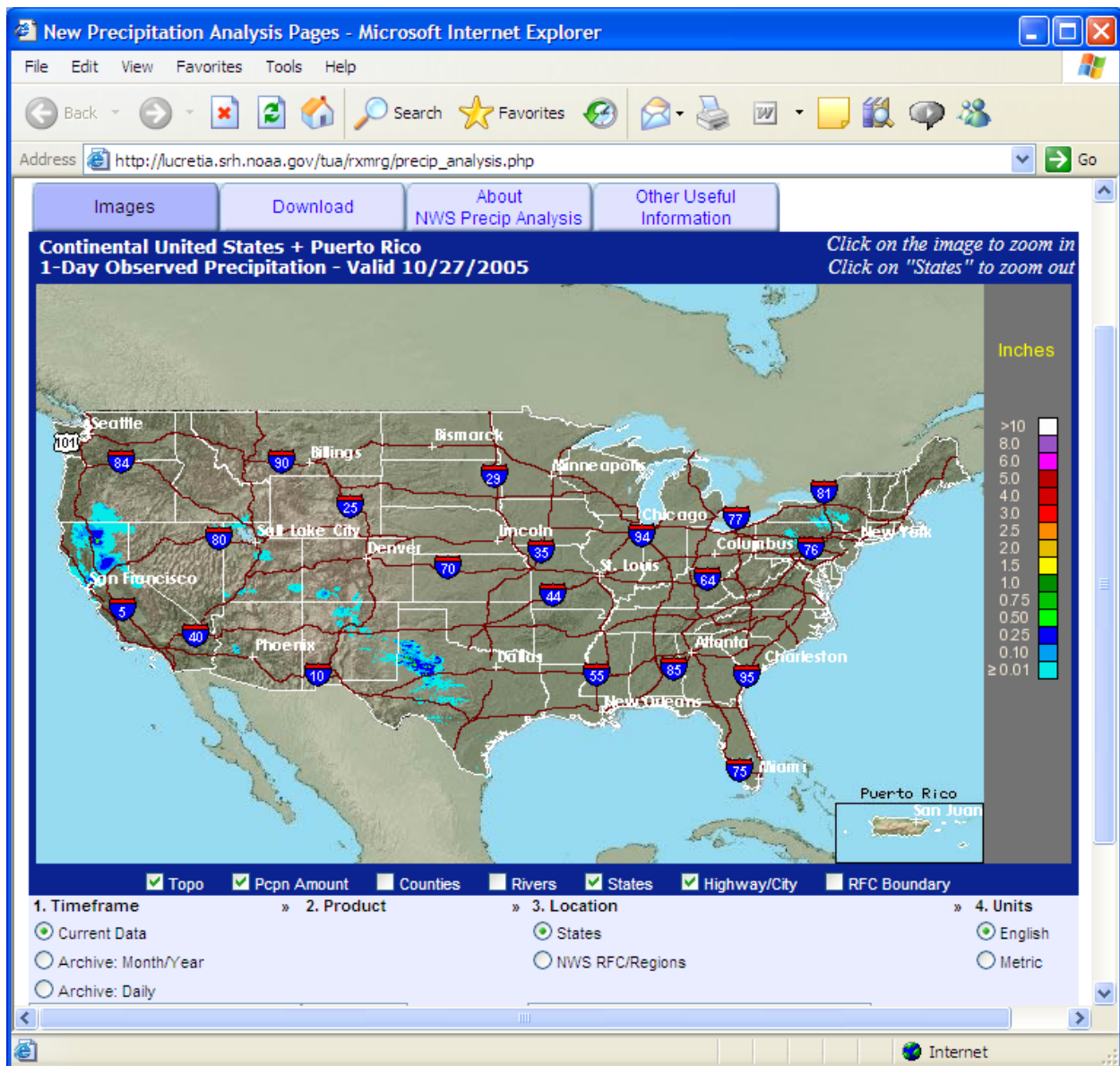


Figure 1. Screen capture showing estimated precipitation for October 27, 2005

## Examples of PDDs/SDDs (cont)

### Experimental NOAA Weather Radio Podcasts Product Description Document (PDD)

#### Part 1 – Mission Connection

##### 1. Product Description:

The NWS is responsible for making its weather, water and climate information widely available to taxpayers using commonly accepted standards and technologies. Currently, the NWS provides only limited audio broadcasts of their NOAA Weather Radio All Hazards (NWR) via the Internet.

The Voice Improvement Program (VIP) software on the NWR is able to convert the text transmitted to the Console Replacement System (CRS) into MPEG audio Layer-3 (MP3) files. Southern Region NWS offices are making these MP3 files available on the Internet as “podcasts”. Podcasting allows for publishing of audio programs to the internet and subsequent downloading of these programs to a personal computer or MP3 device. Users subscribe to the NWR podcast by using a freely available podcasting application that downloads the MP3 file automatically using an RSS (Really Simple Syndication) feed. Podcasting applications typically check for new content (new MP3 files) at user defined intervals. Once downloaded, the user can then listen to the podcast at his/her leisure (versus a radio broadcast of NWR).

##### 2. Purpose/Intended Use:

The purpose of the podcasts is to provide NWR products and weather information to people who either do not have access to a weather radio or do not live close enough to a transmission tower to receive an NWR audio signal. Podcasting has the benefit of allowing automatic download of NWR broadcasts and the convenience of allowing people to listen to these broadcasts on their own time.

##### 3. Audience:

This service is available to anyone with a computer connected to the Internet, a device that can play MP3 files, and a podcasting subscription (free) service.

##### 4. Presentation:

Podcasts are available in the commonly-accepted compressed audio format of MP3. Virtually all desktop computers can play MP3 files. In addition, stand-alone MP3 players are widely available on the market and, just recently, many cell phones and car radios are being outfitted to accept and play MP3 files.

Podcasts can be retrieved manually. However, a benefit to using podcasting applications is the ability to receive podcasts automatically via a subscription to an RSS feed. This software is widely available on the Internet. The podcasting software will periodically check for new podcasts and subsequently download them to a designated computer or MP3 device. For



example, podcasting software could be configured to check for and automatically download an NWR broadcast of a specific zone forecast product. Once downloaded, the broadcast would be available to listening at the subscriber's convenience.

5. Feedback Method:

We are always seeking to improve the availability and quality of NWS products and services based on user feedback. Comments regarding the podcast service should be e-mailed to the National Weather Service Southern Region webmaster at: [SR-SRH.Webmaster@noaa.gov](mailto:SR-SRH.Webmaster@noaa.gov). The feedback period for this experimental service will extend from October 19, 2005 through April 19, 2006.

## **Part 2 – Technical**

1. Format and Science Basis:

The MP3 files for the podcasts will be generated with the VIP on the NWR CRS for subsequent transfer to the NWS office's Local Data Acquisition and Dissemination (LDAD) system. Once on LDAD, a PERL script will take the MP3 file and give it a unique file name based on the product and time the MP3 was created. Then, the script file will produce the RSS file and transfer the MP3 and RSS file to the website. During access from the website, a PHP script dynamically reads each RSS file and creates a table for each geographic location with the latest time stamp for each MP3 file.

2. Availability:

This service will be available 24 hours a day and 7 days a week. Availability of broadcast information may differ from site to site.

**APPENDIX D**  
**Example of Umbrella PDD/SDD**

**National Digital Forecast Database (NDFD) Gridded Data Product Description**  
**Document 6/15/05**

**Part I - Mission Connection**

Product/Service Description - The National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) is charged to collect data on climate, water, and weather, provide forecasts and warnings of severe weather in order to protect life and property, and create and disseminate forecasts and other weather information for the benefit of a wide range of weather sensitive businesses and activities.

By capitalizing on rapid advances in science and technology and infusing these advances into its operations, the NWS has taken steps to proactively respond to ever changing and growing demands of its users and partners. The 2003 Fair Weather report, produced by the National Research Council, recommended making NWS data and products available in an Internet accessible digital form. The specific recommendation is as follows: *“Information held in digital databases should be based on widely recognized standards, formats, and metadata descriptions to ensure that data from different observing platforms, databases, and models can be integrated and used by all interested parties in the weather and climate enterprise.”* The Internet is now a principal means of communicating NWS forecasts.

The NWS provides access to operational and experimental gridded forecasts of sensible weather elements (e.g., Maximum Temperature, Sky Cover) through the National Digital Forecast Database (NDFD). NDFD contains a seamless mosaic of digital forecasts from NWS field offices working in collaboration with the National Centers for Environmental Prediction (NCEP).

Experimental gridded weather forecast elements available in NDFD (and the associated comment/ feedback periods) for the coterminous United States (CONUS) and Puerto Rico are shown in Table 1 below.

<b>Grid Element</b>	<b>Comment Open Date</b>	<b>Comment Close Date</b>
Quantitative Precipitation Forecasts (QPF)	6/13/03	9/15/05
Significant Wave Height	6/13/03	9/15/05
Sky Cover	6/13/03	9/15/05
Snow Amount (CONUS only)	6/13/03	9/15/05
Wind Direction and Wind Speed	6/13/03	9/15/05
Apparent Temperature	6/15/05	12/15/05
Relative Humidity	6/15/05	12/15/05

**Example of Umbrella PDD/SDD (cont)**

**Table 1.** NDFD Experimental Grid Elements (CONUS and Puerto Rico) and Associated Comment/Feedback Period.

Experimental gridded weather forecast elements available in NDFD (and the associated comment/feedback periods) for Hawaii, and Guam are shown in Table 2 below.

<b>Grid Element</b>	<b>Comment Open Date</b>	<b>Comment Close Date</b>
Significant Wave Height	9/14/04	9/15/05
Sky Cover	9/14/04	9/15/05
Snow Amount (Hawaii only)	9/14/04	9/15/05
Wind Direction and Wind Speed	9/14/04	9/15/05
Apparent Temperature	6/15/05	12/15/05
Relative Humidity	6/15/05	12/15/05

**Table 2.** NDFD Experimental Grid Elements (Hawaii and Guam) and Associated Comment/Feedback Period.

Purpose/Intended Use – NDFD is a central database storing geospatially referenced (GIS compatible) digital forecast information. The NDFD houses both operational and experimental (as defined in *NWSI 10-102, New or Enhanced Products and Services*) grid fields. The NDFD is the primary means by which grids will be made available to users and partners.

Audience – The current audience for NDFD gridded data is large volume users of forecast information, utilities, emergency managers, businesses/industry, academia, and any others who wish to decode and explore various potential applications of the NWS digital data.

Presentation Format - The NDFD is available for 16 predefined and slightly overlapping geographic sectors throughout the CONUS, as depicted at the following URL: <http://www.weather.gov/ndfd/coverage.htm>. Three OCONUS sectors are also available for Hawaii, Guam, and Puerto Rico/Virgin Islands. The data is presented in GRIB, Edition 2 format and can be readily decoded for those that wish to create derived products from the forecast parameters/values contained within the NDFD. A user defined GRIB2 access is also available. This service allows the user to provide latitude/longitude points for two corners and a weather element. A resulting GRIB2 message is built “on-the-fly” and downloaded by the user. For more information about User Defined GRIB2 access, please refer to the Products/Service Description Document at the following URL:

[http://products.weather.gov/PDD/User\\_Defined\\_Grib2.pdf](http://products.weather.gov/PDD/User_Defined_Grib2.pdf)

**Example of Umbrella PDD/SDD (cont)**

In addition, NDFD data is available in Extensible Markup Language (XML). XML is a service that provides the ability to request NDFD data over the internet and receive the information back in an XML format. The request/response process is made possible by the NDFD XML Simple Object Access Protocol (SOAP) server. For additional details regarding XML, please refer to the NDFD XML Service Description Document at the following URL:

[http://products.weather.gov/PDD/Extensible\\_Markup\\_Language.pdf](http://products.weather.gov/PDD/Extensible_Markup_Language.pdf)

Feedback Method - User feedback is extremely important in our effort to improve the quality and usefulness of products and services. Please submit your comments on these experimental grids by completing our brief experimental product survey during the comment period specified for the individual grid shown in Tables 1 or 2 above. Comments may also be submitted by clicking on the “Feedback/Survey” link on the NDFD web pages at the following URL: <http://www.weather.gov/ndfd>.

For general questions regarding the National Digital Forecast Database, please email: [nws.ndfd@noaa.gov](mailto:nws.ndfd@noaa.gov)

Technical questions regarding the NDFD may be addressed to: National Weather Service Headquarters ATTN: David Ruth, W/OST21 1325 E-W Highway, SSMC2 Silver Spring, MD 20910

## **Part II - Technical Description**

Format and Science Basis - The NDFD forecast element definitions and technical information (e.g., temporal and spatial resolutions of the graphics, and geographic coverage) may be found on the NDFD technical page at the following URL:

<http://www.nws.noaa.gov/ndfd/technical.htm>

Product Availability - Updates to the NDFD are made available shortly after the top of each hour. Forecast grids for the next Day 7 will be introduced daily no later than 1800 UTC.

### Additional Information -

- (1) National Weather Service Instruction (NWSI) 10-506, Digital Data Products/Services Specification provides detailed information on both experimental and operational elements in NDFD.
- (2) Experimental grids are evaluated regularly on timeliness, completeness, spatial consistency, accuracy, and other subjective criteria. When they meet the guidelines established by the NWS, they are declared “operational” and are no longer covered by this PDD for experimental grid elements.

## **APPENDIX E**

### **Dissemination and Feedback**

#### Dissemination of Web Based Products/Services

##### Experimental Product/Service Web Page

Experimental Web-based products/services will be accompanied by a Web page that, as a minimum, contains the following:

- “Experimental” label and the evaluation period, for example:  
  
“New Product/Service Name” is an experimental product/service that will be posted to this page for evaluation from (beginning date) to (ending date). During this period, we encourage your comments or suggestions for improvements using the electronic survey provided. Your feedback will help us determine product/service utility, if modifications are needed, and whether the product/service should become part of our operational suite.
- A brief statement of the intended use of the product/service,
- Link to a Product/Service Description Document (PDD/SDD)
- Point of Contact (address/phone/e-mail) to address additional comments/feedback
- A link to a survey (Submit Request for Survey to Survey System - see Appendix H).
- Date when Web page was last updated
  - Note: All Experimental Product/Service Web Pages are required to conform to all DOC/NOAA/NWS Web Policies and Directives

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#### Feedback Solicitation for all experimental products/services

- Public Information Statement
  - Locally-generated or national Public Information Statements (PNS) will be issued before distribution of any experimental products/service. The PNS will include a brief description of the product/service, Web address, evaluation period, and a local and/or regional point of contact.
- Other Methods for Soliciting User Feedback.

- In addition to the Web-based experimental product/service survey, offices should actively seek comments on products/services. The following examples are ways to seek user feedback:

- User/Partner Workshops – Partner’s Web Site
- Weather Forecast Office (WFO) Warning Coordination Meteorologist
- River Forecast Center (RFC) Service Coordination Hydrologist
- Management meetings and SKYWARN training sessions
- WFO/RFC Outreach (open house events, school and community visits, workshops, fairs, conventions, expos, seminars)
- Conferences of professional organization

**APPENDIX F**  
**Evaluation and Recommendation Guidance**

The product evaluation (see section 5.2) will consist of the following:

A technical evaluation of the product/service including the scientific basis of the product. An evaluation of comments received including assessment of public reaction, whether stated user needs have been met, or whether further development is required. Describe outreach activities intended to educate affected users and invite their comments.

Product/Service evaluation form

Evaluation By: \_\_\_\_\_  
Product/Service Name: \_\_\_\_\_  
Product/Service Developed By: \_\_\_\_\_  
Product/Service Website (URL): \_\_\_\_\_  
Brief Product/service description: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Does product/service comply with NOAA partnership policy?                      Yes       No

Is this product/service replacing or similar to another product/service?      Yes       No

Does product/service meet scientific specification?                                      Yes       No

Comments for this product/service have been favorable?                                      Yes       No

Do any comments express a view that it is inappropriate for NWS to provide this product/service? (If yes provide comments)                                      Yes       No

Does product/service need further development?    Yes       No

Product/service availability:    Seasonal       Non-Seasonal

Is special equipment required to receive/view product/service?                                      Yes       No

Are resources available to implement and sustain the product/service operationally?                                      Yes       No       Unknown

Describe special equipment required: \_\_\_\_\_  
\_\_\_\_\_

Indicate any outreach activities used to educate affected users and invite their comments:

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**APPENDIX G**  
**Information Template (example)**

Product/Service Name: Wireless Application Protocol for Marine and Coastal Products

Type product/service: Experimental

Scope: Local, Regional, or National

Originator: The Wireless Application Protocol (WAP) is the de facto industry standard of making available products which are currently disseminated via the Internet, available to users of wireless technology.  
John Doe

Email: [john.doe@noaa.gov](mailto:john.doe@noaa.gov)

Office: Marine and Coastal Weather Services Branch W/OS21

Address: 1325 East West Highway Silver Spring, MD 20910

Phone: 301-713-???? X100

Parameters: Wind, waves, pressure, fog, ice, seismic information, tsunami travel times, tide heights, water run-up distances.

SW Required: Web Browser

Date Type/Format: Alphanumeric/graphic

Example: Provide example if available

Product URL: Provide URL for new/enhanced product/service

PDD files name: twcDM pdd2.pdf

Dates of Comment Period: 20 January 200X to 21 December 200X

Approved By: Jane Doe

The above information is required to quickly link PDDs/SDDs to the National Catalogue of New or Enhanced NWS Products/Services

**Information Template**  
**(Electronic version available on the web page for New and Enhanced Products Catalog)**

Product/Service Name:

Type product/service:

Scope:

Description:

Originator:

Email:

Office:

Address:

Phone:

Parameters:

SW Required:

Data Type/Format:

Example:

Product URL:

PDD file name

Dates of Comment period:

Approved By:

## APPENDIX H Request for Survey

To add a new product/service or website to the survey system you will need to submit a request for Survey

Requests for surveys should be submitted to [w-nws.webmaster@noaa.gov](mailto:w-nws.webmaster@noaa.gov)

The following information will be needed to set up the survey:

- 1) Type of survey (Experimental Product/Service or Web site Satisfaction survey)
- 2) Experimental Product/Service Name
- 3) If email notification of survey responses is desired, the name(s) of the recipients

\*\*Note that the following is only an example and is not fillable – do not try to use this for your own survey.

### Add a New Product or Website to the Survey System

Please select a product type

- Experimental NWS Product  
 Generic NOAA website satisfaction survey

Please enter your product code (maximum 16 characters)

**Set by OCIO**

Please enter your product name

Please enter the OMB control number (maximum 16 characters)

*Generic NOAA web survey number: 0648-0342*

*NWS product survey number: 0648-0342*

0648-0342

Please enter the expiration date

*Generic NOAA web survey date: 07-31-2008*

*NWS product survey date: 07-31-2008*

07-31-2008

Please enter the mailing list. These people will get the results in the form of an email, but the results will also be stored in the database (the default domain is noaa.gov).

### Request for Survey (cont)

**Survey Results For NWS/PDT-SUNPROB  
Graphical Sunshine Probability Chart**

**17 surveys submitted  
from 01.14.2005 to 01.21.2006**

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From  
mm  dd  yyyy

To  
mm  dd  yyyy

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Summary of Ratings  
 Summary of Comments  
 Individual Surveys  
 Raw Data

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**APPENDIX I**  
**Checklists for PDDs/SDDs**

Checklists with the details of the procedures (and the necessary forms) to submit, extend the comment period , discontinue or transition to official a new or enhanced product/service can be found on the Web Page for the National Catalog of New or Enhanced Products <http://products.weather.gov/> or by clicking on the links below.

-

- [Checklist to Submit a new or enhanced product/service](#)
- [Checklist to Extend the comment period for a new or enhanced product/service](#)
- [Checklist to Discontinue\(terminate\) a new or enhanced product/service](#)
- [Checklist to Transition a new or enhanced product/service from experimental to operational \(official\) status](#)