Wildland Fire Decision Support System

WFDSS NextGen Frequently Asked Questions

February 2025

General

What is WFDSS NextGen?

Over the past 50 years, fires have dramatically increased in size and complexity, often stretching the capacity of the management systems in place. The Wildland Fire Decision Support System (WFDSS) project evolved from the need to streamline and improve decision-making processes, as well as take advantage of improvements in technology, fire modeling, and geospatial analysis.

The Wildland Fire Decision Support System is an interagency, web-based application designed for agency administrators and fire managers to make collaborative, risk-informed decisions for all wildland fires, regardless of complexity. This system is designed to be easy to use, intuitive, linear, scalable, and progressively responsive to changing fire complexity.

WFDSS NextGen (WFDSS NG) was built upon feedback, and lessons learned from the field while using WFDSS Classic over the past 15 years to improve the Risk-Informed Decision Processes. WFDSS NG will continue to receive improvements throughout its lifecycle based on technology enhancements, field feedback and lessons learned.

WFDSS Next Gen is designed to improve the user experiencing by being Scalable, Map-Focused and Intuitive while providing users with authoritative data and “as near to” real-time information as possible to facilitate informed and rapid decision making. WFDSS NextGen will be utilizing services as the primary method for displaying spatial data, populating weather data throughout the application, running the fire behavior analyses and displaying Spatial Fire Planning data. Utilizing services gives WFDSS NextGen much more flexibility on the data it provides to the end user while ensuring that data is the most up to date and accurate information available.

Why WFDSS NG?

WFDSS NG was born out of an effort to reduce the number of bugs and malfunctions and update the infrastructure of the WFDSS application which began in earnest in 2018 after the failure of Near-Term Fire Behavior (NTFB) in 2016/2017. This effort first was begun as a plan to refactor WFDSS Classic code. After it was determined by multiple developers to be a nearly impossible task, an

application redesign and build to incorporate the latest technology was begun in 2019, with a project kick off in January of 2020.

Using WFDSS Classic user feedback dating back to 2007, the NextGen team has created an application that preserves the key functionality of the operational version of WFDSS while incorporating some key foundational technology changes that will improve user experience and smooth Operations and Maintenance (O&M) and future Development, Modernizations and Enhancements (DME) going forward. These technology changes will also allow for incorporation of research and new products from groups like Risk Management Assistance (RMA) and Incident Strategic Alignment Process (ISAP). Several data layers from RMA have already been incorporated like Snag Hazard, Suppression Difficulty Index (SDI) and Potential Control Lines (PCL).

The Wildland Fire Management Research, Development, & Application (WFM RD&A) team is working to fully transition to the new WFDSS application in March 2025. This application will include a new user interface as well as an updated systems architecture that incorporates new technology. It is estimated that WFDSS NextGen will host over 8,000 active users annually and will reference 100 to 150 data services within the mapping interface.

Will WFDSS NG have all the capabilities/functionality of WFDSS Classic?

The modernization of the WFDSS application is being realized through a full redesign and reconfiguration utilizing an agile process where the end result will not only preserve the key functionality of the operational version of WFDSS, now referred to as WFDSS Classic, while incorporating some key foundational technology changes to improve user experience.

The initial production release will include features deemed part of the Minimum Viable Product (MVP) and will include necessary features for decision makers to fully progress through the decision framework and publish a decision.

WFDSS NG is in active development – which means new features will be incorporated almost weekly and will continue throughout the Development, Modernizations and Enhancements (DME) process. Subsequent releases will include enhancements to the user experiences, incorporation of new technology and concepts, and continual evaluation of connected systems and services.

The initial MVP release of WFDSS NG will include FSPro and the Landscape calculator, as well as a fire modeling Analysis Summary to capture results and interpretation related to analyses completed outside of the application. FSPro has been prioritized as the model is only available within the WFDSS interface due to the intense data requirements to produce outputs. MVP does not include fire behavior models that are available for analysts to use outside of the application, including MTT, FlamMap and FARSITE.

What will the Minimum Viable Product (MVP) for the first release of WFDSS NextGen be?

The Minimum Viable Product (MVP) consists of key components to make an informed decision a using the Risk Informed Decision Process. In addition to the components below, the application includes many features and functionality to support decision making including a map–focused, intuitive User Interface (UI).

1. Spatial Inventory – The Spatial Inventory provides a complete picture of the values within your planning area to facilitate making an informed decision. WFDSS NG uses an automated planning area to produce a automated Spatial Inventory at the beginning of any decision. Users can also generate a Spatial Inventory based on other features such as Landscape Extent. Future enhancements include the ability for users to define additional spatial layers for inclusion in the Spatial Inventory as well as other shapes used to summarize information, like PODs.
2. FSPro – Fire Spread Probability (FSPro) model was prioritized for fire behavior modeling within WFDSS NextGen primarily because there is no desktop or web-based alternative. FSPro is the most complex model to incorporate due to external dependencies tied to the Fire Environment Mapping System (FEMS), Fire Modeling Service Framework (FMSF) and LANDFIRE Product Service (LFPS).
3. Relative Risk - WFDSS NG is closely aligned with the NWCG PMS-236 - Wildland Fire Risk and Complexity Assessment and incorporates Part B from the form into the Relative Risk stepper of the application. The deployment in WFDSS NextGen has advantages over the paper copy (PDF) by automatically presenting products derived from the spatial Inventory of the Planning Area, and in the future, present other information such as fire behavior analysis to inform the Relative Risk ratings. Relative Risk has been enhanced by the fact that users never leave the map screen, allowing consultation of the map on the fly to better inform the Relative Risk considerations rather than toggling back and forth within the interface to populate the required fields.
4. Organization and Complexity – The Organization and Complexity stepper within the application incorporates Part C: Organization Assessment, Part D: Functional Complexity Assessment and Part E: Incident Complexity Level of the NWCG PMS-236 - Wildland Fire Risk and Complexity Assessment. The incorporation of the PMS 236 in WFDSS NextGen will be aligned to reflect any changes to the NWCG 236 as they are published.
5. Strategic Decision – The "Decision" is a multi-part product that incorporates analytics and the components of the Risk Informed Decision Process into a comprehensive format for use in Wildland Fire Management. For the context of the MVP, the decision is broken into its core components which are listed below:
    a. Strategic Assessment(s) - Strategic Assessments in WFDSS NextGen is analogous to the Objectives and Requirements section in WFDSS Classic. Minor differences have been implemented in WFDSS NextGen including, making all Spatial Assessments Spatial (Tied to Feature Layer and Feature Name), linking the Critical Values at Risk (CVAR) from the ISAP process, the additional categories of Spatial Assessments (SA), highlighting in the decision of select SAs and the pre-clipping of Spatial Fire Planning Shapes.
    b. Strategic Course of Action – The Strategic Course of Action (SCOA) in WFDSS NextGen will be an explicitly spatial process but otherwise will be very similar to COA in WFDSS Classic and is a required part of the decision in that there must be at least one SCOA per decision.
    c. Cost – Estimated Final Cost is an important component of the decision in that it is tied to AA/LO certification levels, as well as the expected complexity and duration of the incident.
    d. Approver Rationale – This is a crucial component of the decision in that it gives the overall decision context and leader's intent.
    e. Decision Approval and Publication - The final step of the decision is for the collaborating agencies to approve and publish the decision. It is at this point that the working files become an official record of the fire. One complicated and time-consuming part of this

feature is the encapsulation of all the information included in the decision to this point in a PDF document that can then be retained as part of the permanent record.

6. Legacy Data - Archiving of Legacy Data is a critical part of the WFDSS MVP as it helps us comply with National Archive and Records Administration (NARA) records management requirements and the Freedom of Information Act (FOIA).

When will the first production release of WFDSS NextGen be?

The target release of WFDSS NextGen is planned for March 26, 2025.

Policy

Is WFDSS NG mandatory?

When the transition from WFDSS Classic to WFDSS NG takes place, WFDSS NG will become the official system of record for wildland fires that escape initial attack. WFDSS Classic will be available in a read-only state while legacy data is transferred. The timing of this transition has been chosen through an analysis of WFDSS Classic records, targeting a time of the year when historically few wildland fire decisions are being published to ensure a smooth transfer. Wildland Fire Management Research, Development and Application (WFM RD&A) team members will be fully involved in facilitating both the transfer of active incidents and providing pre-season training.

The Training (WFDSS NG EDU) instance of WFDSS NG is being released to the field prior to the release of the Production environment to allow users to become familiar with the similarities and differences in the functionality of WFDSS Classic and WFDSS NG in real-time.

How do ISAP and the RMA Dashboard align with WFDSS NG align?

Strategic risk tools and discussions including the Incident Strategic Alignment Process (ISAP) and Risk Management Assistance (RMA) Dashboard can inform the decision process in WFDSS NG, specifically Strategy, Course of Action (COA), and Rationale. They can also serve to check assumptions and verify if a changed condition warrants a change in decision.

WFDSS NG is not just incorporating new analytic data/tools and processes but structuring inputs and outputs to better align and inform these processes and lead to better risk-informed decision making.

WFDSS NG utilizes over 100 spatial data services and layers, ensuring that users have access to the most up to date information. Data available from the RMA Dashboard informs the Firefighter safety graphs available on the Incident Info Tab as well as general intelligence gathering – this includes Potential Control Locations (PCL), Suppression Difficulty Index (SDI), Snag Hazard, and Estimated Ground Evacuation Time (GET). Strategic Lines, lines that outline the overall strategy for achieving an incident's defined goals, are incorporated into WFDSS NG through the National Incident Feature Service and are also part of the ISAP workflow.

Environments

How do the environments differ in WFDSS NG?

Like many wildland fire applications, WFDSS NG will maintain multiple environments for developing, testing and user operations. Three of these environments will be available for field users.

The **User Acceptance Testing (UAT)** environment is considered a development environment where final testing and evaluation of feature areas by the application team occurs before they are deployed to the Training and Production environments. Access to this environment was initially provided to any interested user to facilitate comparison between WFDSS Classic and WFDSS NG in real-time during the peak of the 2024 fire year. Now that the EDU environment is available, the UAT environment will only be used by selected testers and the application team.

The **Training (EDU)** environment will operate similarly to the Training environment of WFDSS Classic. The Training environment exists to allow users to practice working in the application and facilitating training courses. The Training environment is considered a production environment and should have the same functionality available as the PROD environment, with the exception of writing data to any other service. This environment is not appropriate for official documentation of active wildland fire incident decisions but can be used to compare the workflow between incidents in WFDSS Classic and WFDSS NG.

The **Production (PROD)** environment will be the official system of record and is appropriate for supporting and documenting decisions for active wildland fire incidents after the transition, scheduled for March 26, 2025.

Account Management

How are accounts managed in WFDSS NG?

All account management for WFDSS NG is controlled through the Wildland Fire Application Portal - FAMAuth. The primary responsibility for account approval and role validation lies with the Geographic Area Editors.

Since WFDSS Classic managed roles within the application and WFDSS NG manages roles through FAMAuth, there isn't a way to automatically copy the user list from one application to the other.

Application access and roles for each instance (UAT, EDU, PROD) will need to be requested separately – there is no duplication across instances like in WFDSS Classic.

Do I need more than one role?

User roles are hierarchical in WFDSS NG, where each higher role includes all the privileges of the roles below. Users are limited to one role per instance (EDU, PROD) but those roles do not need to be the same across instances.

How often will I need to update my password?

Since WFDSS NG accounts are managed through the Wildland Fire Application Portal -FAMAuth, the security requirements are handled through that system. There is no password associated with the WFDSS NG account specifically, but users will have to maintain their Login.gov, PIV and FAMAuth accounts to access applications within the FAMAuth portal.

FAMAuth enforces a non-activity provision; Users without activity in the WFDSS NG application in 330 days will lose access to the application and associated roles and will have to request a new account and role approval for each instance of the application. Each login to the WFDSS NG application resets the clock for that instance/environment.

Transition

Will I still be able to use WFDSS Classic for analysis or other functions after the transition to WFDSS NG?

WFDSS Classic will be available in a read-only state while legacy data is transferred. Fire behavior analyses that are not yet available in WFDSS NG can be performed on desktop applications (FlamMap, FARSITE, etc.), leveraging the Fire Modeling Services Framework (FMSF), or through IFTDSS for the MTT model.

When will users transition to WFDSS NG?

Users can request access to the Training (EDU) environment/instance NOW to get a feel for the system, compare functionality across applications and provide feedback. As the Training and Production environments become available for user access, a wide-spread communication campaign will be initiated and will target users of the current WFDSS system.

The full transition to WFDSS NG is planned for March 26th, 2025.

Incident Management

Will I be able to create a wildland fire incident in WFDSS NG?

Since the implementation and integration of the Integrated Reporting of Wildland Fire Information (IRWIN) system in 2014, the creation of incidents within the WFDSS application has become virtually unnecessary. In the event that an incident is not being reported to WFDSS, users should work with their dispatch center to ensure the incident has been created in the appropriate authoritative system.

In limited circumstances, such as system outages, WFDSS NG users with the Support role will have the ability to create non-IRWIN incidents within the Production environment of WFDSS – these incidents will be placeholders and will not communicate with IRWIN. In the future, Users with the role of Editor and higher will be able to create incidents in the Training (EDU) instance of the application - This functionality is currently in development.

How do I change Incident Information?

All incident information is ingested from IRWIN; any change an Incident Size, Unit, Location, Jurisdiction, Unique Fire ID, etc., will have to be edited at the Authoritative Data Source (ADS). Most often times this information will be edited in the Computer Aided Dispatch (CAD) system that manages incidents that particular Jurisdiction, but varies by Agency and area.

What application roles do I need to start a decision?

Any user with the Editor role or higher in WFDSS NG has the ability to start an Incident Decision. The user that starts the Incident Decision becomes the Point of Contact (POC) by default. Each Incident Decision must have one Point of Contact (POC), but any Collaborator on the Incident Decision can assign or claim that role. Once a user is added as a Collaborator, that user can add additional users as Collaborators or remove Collaborators. Actions related to the Collaborator List are tracked in the Incident History. Users with the Analyst role or higher are implicit Collaborators and can help manage the Collaborators list without being explicitly added as a Collaborator.

How do I manage my incident roles?

If a user is a Collaborator on an incident, they can navigate to the Collaborator tab on the Incident Info stepper and view the Collaborators List. Using the Edit Collaborators accordion, a collaborator can add or remove collaborators, reassign POC or assign an Approver. Only users that have self-certified Approver qualifications on their user profile can be assigned as Approver. Multiple Approvers are allowed to maintain a collaborative risk-informed decision.

If a user is not a collaborator on an incident where a decision has been started, they should contact the POC to be added to the incident by navigating to the Collaborator tab on the Incident Info stepper and viewing the Collaborators List to locate the POC. Clicking on the POCs name will open a new window, displaying the POC contact information, including email and phone number.

I've started an Incident decision – how do I navigate back to the full Incident List?

To navigate away from an Incident decision, first ensure that the content on the current screen has been saved. Selecting any topic on the header at the top of the view will navigate away from the incident content; selecting Incident will take a user back to the Incident Search page.

Can I upload or draw shapes associated with an incident?

Users with the Editor role can upload or draw shapes (Planning Area, Incident Perimeters, User Defined Strategic Shapes, Landscape Extent [draw only], Ignition, Barriers, and Masks only when Collaborators on an incident. Users with the Analyst role and above are considered implicit collaborators and can add spatial data to any incident, when requested by the incident.

Can I create groups or create a decision for a complex of incidents?

WFDSS does not support the creation of complexes or groups within the application at this time.

What does the icon that looks like a blue eyeball do??

The Watchlist icon (the blue eye next to the Incident name) allows users to add or remove (black eye icon with slash) an Incident from their Incident Watchlist. The Incident Watchlist appears below the list of user's Active Incidents on the My Home screen.

What's the difference between My Incident Watchlist and My Active Incidents?

My Active Incidents reflects the list of Incidents on which the user is a collaborator. The Incident Watchlist reflects a list of incidents that a user has selected (using the Eye icon) to watch – if the user is not a collaborator on the Watchlist incidents, they will be able to view the information in an initiated decision, including completed analysis outputs, but not able to make edits or upload shapes unless they have the Analyst roles or higher.

I just started a Decision and there is already a Planning Area– what kind of funny business is this?

The Initial Planning Area (PA) is automatically generated using the initial Point of Origin reported by the reporting system of record (through the IRWIN exchange) as the center point of a 7 x 7 mile square (~31,360 acres). The application will automatically generate a Spatial Inventory based on the Initial Planning Area which will populate the Firefighter Safety graphs on the Fire Area tab of the Incident Information stepper.

If the Point of Origin is "moved" or edited in another system, the Initial Planning Area remains centered on initial Point of Origin.

Users that are Collaborators on an incident, can draw or upload a new Planning Area, which will automatically replace the Initial Planning Area and named "Current". Users cannot rename the Planning Area.

Once a user generates a "new" Current PA, the Current and Initial Planning Areas will have different symbology on the map. The Initial Planning Area can be turned off in the Layer List in the Incident parent group to remove it from the map view.

Any time the Current Planning Area is updated, the Spatial Inventory should be generated again – validate the currency of the Spatial Inventory using the date and time generated value in the Spatial Inventory table.

The Planning Area is tied to features throughout the application, including Strategic Assessment section. Best practice is to finalize the Planning Area and generate a Spatial Inventory prior to starting work on the Strategy tab as that process automatically clips the Spatial Fire Planning information to the Planning Area to allow for assigning objectives, requirements or other strategic categories spatially.

The steppers *seem* intuitive…

The concept behind the Steppers in NextGen is to make the application as intuitive as possible to work through a decision, moving from left to right, top to bottom. Both WFDSS Classic and Next

Gen have integrated the PMS-236, NWCG Wildland Fire Risk and Complexity Assessment into the respective applications - It can be confusing to users that aren't interacting directly with the PMS236 frequently, but the concepts around Relative Risk and Organization Assessment aren't new to WFDSS users.

User Support

How do I get help?

The User Support link in the header banner of any WFDSS NG instance will open the WFDSS NG Home page in a new window on the User's browser. Users can use the search box in the upper right of the screen, navigate to topics on the left-hand panel or select resources from the Quick Links section.

Microvideos are available on our YouTube playlist.
For application access and role requests, please coordinate with your local GAE.
Users can report issues with the system at WFDSS NextGen Feedback.
As the application is currently in development, these user support topics will continue to evolve.

How do I provide feedback?

Users can provide feedback related to appearance and functionality at WFDSS NextGen Feedback . Before submitting feedback, please check the WFDSS NG Requirement and Enhancement Inventory, which will be updated periodically to see if your suggestion has already been addressed.

What should I do if the application isn't functioning as expected?

First, navigate away from the current tab and navigate back – this usually resets any temporary disruptions in service. Try logging out of the application and logging back in and clearing the browser cache. Check the Known Issues of the User Support page. Document the expected behavior and demonstrated behavior and provide feedback using the WFDSS NextGen Feedback form.

The application seems to time out quickly.

Since the application can be accessed through the Wildland Fire Application Portal (FAMAuth), sometimes the authentication period of FAMAuth can override that of the WFDSS NG application. Closing the FAMAuth window may allow the user an extended period of use.

Fire Behavior Modeling

How will fire behavior modeling be enhanced in the WFDSS NG application?

The design of WFDSS NG has moved from housing all the data and conducting all modeling within the application to utilizing an external, system-based framework which not only allows users to

interact with the most current data sources and models but takes the computational load off of the WFDSS application. Current and edited Landscapes will be provided by the LANDFIRE Product Service (LFPS), weather and climatology data will be provided by the Fire Environment Mapping System (FEMS) and the computation is completed using the Fire Modeling Services Framework (FMSF), all without the analyst leaving the WFDSS NG application. See the diagram below.

Fire Modeling Services Framework (FMSF) brings improved performance, consistent data, and faster analysis results. FMSF also provides a key feature to users by greatly reducing the Information Technology (IT) needs by hosting models and tools in one service.

Generally speaking: FMSF hosts wildland fire behavior and effects models and tools for Application Programming Interface (API) connections to other systems (e.g. IFTDSS, WFDSS, etc.). FMSF provides fire forecasting data (flame lengths, rates of spread, fire progression, tree mortality, fuels consumed, emissions, etc.) outputs for use in other application analyses. This structure (build once, use multiple times) saves time and costs.

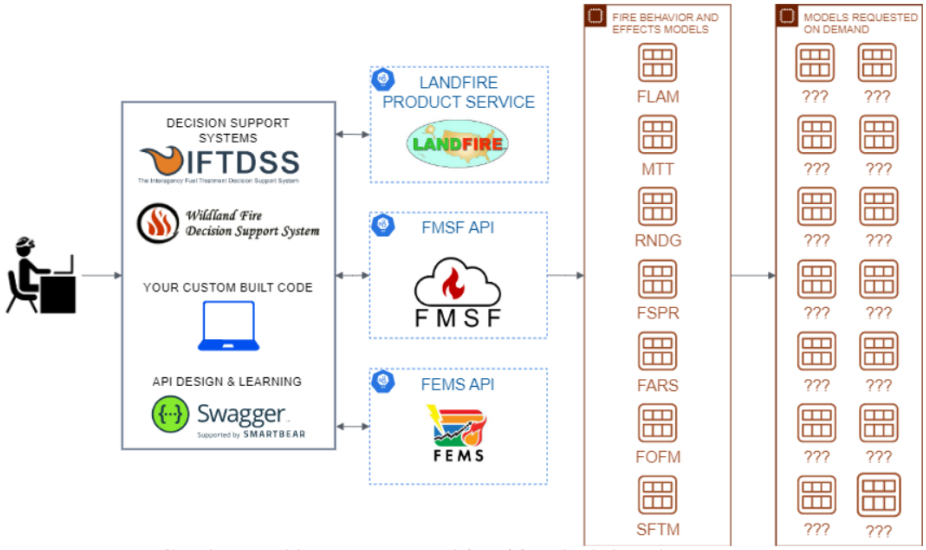

Figure 1. Diagram of how the Fire Modeling Services Framework (FMSF) fits within the larger decision support system ecosystem.

Which fire behavior models will be available in WFDSS NG? How will these models differ from those available in WFDSS Classic?

With the initial release of WFDSS NG, only the FSPro model will be available. Users with Editor roles will be able to request FSPro analyses while those users with the Fire Behavior Analyst role and above will be able to calibrate and run analyses. Priority was given to FSPro as the model is not available outside of the WFDSS system as a desktop application.

Future enhancements will include the incorporation of the FlamMap, MTT and FARSITE models to replace the Basic, Short Term Fire Behavior (STFB), and Near Term Fire Behavior (NTFB) models, respectively.

What are some of the differences associated with the Landscape Editor?

Landscape rules within the Landscape Editor will operate using similar logic to IFTDSS, with the exception that a cell value for a specific attribute can be modified multiple times during an editing session. Read more about IFTDSS Rule Ordering Considerations here.

What are some of the differences related to running an FSPro analysis?

With the transition to utilizing services to obtain and process data as well as run models comes the dependency on those services. All three services WFDSS NG relies on to run analyses (FEMS, LFPS, FMSF) are also fully engaged in Development, Modernization and Enhancement – there is close coordination behind the scenes between all of these applications.

How do I incorporate the results from MTT, FlamMap and FARSITE?

Since only the FSPro model will be available in the first production release of WFDSS NextGen, users will want to include important results associated with desktop fire behavior modeling applications in the decision process and incorporate within the approved decision document. The Analysis Summary element will include a rich text editor field for users to include descriptive text, images and tables to document model results and considerations. The application will not support uploaded or attached documents or pdfs, but text and photos can be copied and pasted into the narrative field.

Decision (Strategy)

How do I add a Management Action Point (MAP)?

MAPs are not associated with the Strategic Decision in WFDSS NextGen and have been replaced by Strategic Course of Action shapes. Users will have access the Strategic Operations/Strategic Lines on the map under the National Incident Reference group, when available on the incident - These lines can be copied and applied to Strategic Course of Action or Strategic Assessment, along with narrative information, to incorporate and document ISAP discussions.

Where are the Relative Risk and Organization Assessment Charts (Zimmograms)?

WFDSS NextGen is closely aligned with the Relative Risk and Organization Assessments sections of the NWCG PMS 236. As such, the elements have been broken out to their own individual sections, with the PMS 236 Recommended Relative Risk Rating.

How do I see all my Strategic Assessments of Strategic Course of Actions?

Below the ‘Create/Edit Strategic Assessment’ and ‘Create/Edit Strategic Course of Action’ are the existing ‘Strategic Assessments’ and ‘Strategic Course(s) of Action’ tables. These tables can be viewed in the split or expanded view of the right-hand panel. Additionally, a spreadsheet of either can be downloaded by clicking the csv icon above and to the right of those tables. The csv icon will export data corresponding to the current view – to ensure that all the columns are exported, expand the right-hand panel before clicking the button.

How do I assign a review to the decision?

WFDSS NextGen does not require a reviewer to approve the decision before the approver can sign and approve the decision. Instead of a review process, WFDSS NextGen allows the user to lock each section by marking it ‘Ready to Publish’, having all the required sections marked as ‘Ready to Publish’ in effect marks the decision as having had been reviewed and will allow it to be submitted for approval by an approver.