

# **MANAGING LONG DURATION WILDFIRES WORKSHOP**

**Northern Rockies, Rocky Mountain, Southwest, and Intermountain Regions  
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## **What is a Long Term Implementation Plan**

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### **OBJECTIVES:**

1. Define What Long Term Implementation Plans (LTIP),
2. Define the purpose of LTIP's,
3. Discuss how LTIP's relate to WFSAs, WFIP's, and IAP's,
4. Review the contents of LTIP's.

### **I. INTRODUCTION**

Wildland fire management is evolving and varying in response to changing organizational capability, changing fire environments, and overall fire complexity. Standard operational procedures have evolved from a single focus response to multi-focus responses that vary substantially, and are formulated in response to objectives, the overall fire situation, fiscal efficiencies, firefighter safety concerns, and management capability.

Strategic direction on many fires is now driven by management capability. No longer is the option of implementing direct attack on all fires until controlled available. Broader strategic analysis and review is necessary and often, it is necessary to implement appropriate management responses that reduce expenditures, provide for greater firefighter safety, and accomplish protection objectives through point or area protection actions.

Most wildfires that receive point or area protection responses will persist for longer time periods than those that receive a successful direct perimeter control response. Longer duration wildfires need to be assigned a long duration status and have long term planning completed. This planning is critical to ensure that managers remain proactive in their management, anticipate and plan for potential outcomes and developments, and stay engaged with and aware of the fire's progression. These plans must make certain that adequate management attention is given to: all values to be protected, risk, necessary management actions with management action points, and continual re-assessment of progress in meeting protection objectives, given the current and predicted fire environment and resource capability. The appropriate management plan for documenting this type of information is the Long Term Implementation Plan.

## II. WHAT IS A LONG TERM IMPLEMENTATION PLAN?

A Long Term Implementation Plan (LTIP) is a plan that provides long term management direction for long duration wildfires based on an analysis of all factors affecting fire suppression capability and effectiveness, fiscal management, firefighter and public safety, values to be protected, and management objectives for the fire area.

LTIP's are:

- developed through collaboration by all partners and cooperators involved in the fire action,
- **comprehensive management plans, they are not merely assessments.** They include a long-term risk assessment as part of their analysis **but are the single source for long term management direction for the particular fire(s),**
- derived from the Wildland Fire Implementation Plan (WFIP) model used for planning and implementing wildland fire use, but focus on suppression actions for wildfires,
- developed in response to a Wildland Fire Situation Analysis (WFSAs), initiated after completion of a WFSAs, and extend the direction presented and documented in the WFSAs,
- developed in a manner so the complexity of the plan matches the complexity of the incident to be managed,
- a dynamic document that are updated as often as conditions change.

LTIP's are not:

- developed to manage wildland fires for resource benefits (the WFIP is the proper tool for this purpose at this time),
- an assessment, but are a complete long term management plan for long duration wildfires,
- a static document.

## III. PURPOSE OF LONG TERM IMPLEMENTATION PLANS

LTIP's are intended to validate and implement the selected Wildland Fire Situation Analysis (WFSAs) alternative to meet objectives from the LRMP, FMP and those developed by the Agency Administrator specific to current local social, political, and economic concerns. They are intended to provide long-term management direction for long duration wildfires where initial and extended attack actions have been unsuccessful; they provide an extension of the decision documented in the WFSAs and provide any management organization the information needed to conduct appropriate tactical operations to meet objectives, inform the public on management direction, and respond to a long duration incident.

#### IV. RELATIONSHIP OF LTIP'S TO WFSAs, WFIP'S, AND IAP'S

The LTIP has a direct relationship to the WFSa in that it is intended to validate and implement the WFSa selected alternative to meet objectives stated in the Land and Resource Management Plan, the Fire Management Plan, and any specific concerns and considerations from the Agency Administrator specific to local social, political, and economic concerns. The LTIP has no specific relationship to the WFIP due to the differences in their respective strategic objectives. The LTIP relationship to the Operational Period Incident Action Plan (IAP) is that the IAP will reflect a set of control objectives and tactics to accomplish the strategic objective for a single operational period. The temporal scale of an IAP is strictly short-term while the LTIP is long-term. The IAP defines actions, concerns, and operational activities that are consistent with objectives and constraints stated in the LTIP.

The following table illustrates a comparison of the WFSa, WFIP, IAP, and LTIP in terms of numerous characteristics of each process.

**Table 1.** Comparison of current wildland fire strategic and tactical planning and implementation processes.

| Characteristic          | WFSa   | WFIP  | IAP   | LTIP  |
|-------------------------|--|---|---|---|
| Primary Role            | Comparison of multiple alternatives and documentation of selection of a preferred strategic alternative (decision) | Documentation of fire use decision, completion of long-term risk assessment, completion of long-term operational plan | Short-term tactical plan – designed for a single operational period | Documentation of a course of action consistent with WFSa, including long-term risk assessment/decision support and long-term operational plan |
| Strategic Objective     | Protection   | Resource Benefits   | Protection and Resource Benefits                                    | Protection  |
| Management Action Focus | Strategic  | Strategic and tactical  | Tactical  | Strategic and tactical  |
| Temporal Scale          | Short to long  | Short to long   | Short   | Long  |
| Spatial Scale           | Incident or complex of incidents (small to large)  | Incident or complex of incidents (small to large)   | Incident or complex of incidents (small to large)                   | Incident or complex of incidents (moderate to large)  |
| Validation              | Daily  | Daily or as defined   | New plan completed for each operational period                      | Defined frequency   |
| Revision/Updates        | Whenever strategic alternative is not accomplishing objectives   | Updated continually in response to changing conditions  | New plan completed for each operational period                      | Updated continually in response to changing conditions  |

|         |                   |   |   |   |
|---------|-------------------|---|---|---|
| Tactics | Not primary focus | Full range of tactical responses available, must be justifiable | Full range of tactical responses available, must be justifiable | Full range of tactical responses available, must be justifiable. However, differ from responses for resource benefit objectives, potentially higher values to be protected and potentially greater urgency and precision in implementation. |
|---------|-------------------|---|---|---|

#### **IV. LONG TERM IMPLEMENTATION PLAN CONTENTS**

Contents of LTIP's will vary little between plans but length and specificity of various elements may vary considerably between plans. However, it should be remembered that the complexity of the plan should match the complexity of the incident, thus excessively long and detailed plans will not be the norm but will be appropriate when the situation warrants.

All LTIP's will contain the following information as a minimum (a full description of these elements will be presented later in this session):

- Fire(s) Description/Situation Documentation,
- Objectives,
- Validation of the Selected WFSA Alternative Boundary,
- Description of all fire protection agencies or governmental entities that are or may be involved during the life of the event,
- Description of all values within and adjacent to the WFSA boundary that may require protection,
- Description of mitigation actions to protect the WFSA boundary and identified values at risk,
- Description of management action points for each of the mitigation (management) actions,
- List of resources needed to implement planned management actions,
- Clear assignment of responsibility for structure protection on private property,
- Signature and Dates,
- Monitoring Activities,
- Appendix,
  - Long-Term Risk Assessment – Decision Support tools and outputs.

## ***Decision Support Background***

There are numerous steps that can be followed through the course of decision making. These steps allow for a logical and progressive definition of the focus and need for the decision, collection of applicable information, analysis, decision, and implementation. These steps are shown in the following table:

**Table 2.** Decision-making steps and associated results.

| <b>Decision-Making Steps</b>                           | <b>Results</b>   |
|--|--|
| <b>Framing the issue</b>                               | <ul style="list-style-type: none"> <li>• Define the problem</li> <li>• What decision is needed</li> <li>• Identify hazards and values potentially affected.</li> </ul>   |
| <b>Data Collection</b>                                 | <ul style="list-style-type: none"> <li>• Acquisition of all information relevant to the issue or problem needing a decision and action</li> <li>• Make a list of significant evidence and arguments for and against each hypothesis.</li> <li>• Identify the items which are most helpful in judging the relative likelihood of the hypothesis.</li> </ul>                           |
| <b>Data Analysis</b>                                   | <ul style="list-style-type: none"> <li>• Evaluation of all relevant data and information to develop recommendations to support for decision- making</li> <li>• Identify the consequences – both positive and negative</li> <li>• Identify probability of negative impacts and determine how the hazard, probability, and values interact to influence the decision needed</li> </ul> |
| <b>Application</b>                                     | <ul style="list-style-type: none"> <li>• Make the decision(s), determine the appropriate action(s) to accomplish objectives/resolve issue.</li> </ul>  |
| <b>Learn and adjust from monitoring and evaluation</b> | <ul style="list-style-type: none"> <li>• Identify milestones for future observation that may indicate events are taking a different course than expected.</li> <li>• Adjust decision during implementation if dynamic situation warrants.</li> </ul>   |
| <b>Documentation</b>                                   | <ul style="list-style-type: none"> <li>▪ Creation of permanent record of information acquisition, analysis, and application.</li> </ul>  |

Decision making is best accomplished when the maximum amount of information is available regarding the decision and its implications. While there are different approaches to decision making, there are also different types of decision support information. Decision support can be multi-dimensional, subjective or objective, qualitative or quantitative. Adding the element of objectivity adds specificity and precision to decision support information.

### ***Decision Support for Wildland Fire Decision Making:***

Decision-making associated with managing wildland fire can have critical impacts. It is important to make the highest quality informed decisions as possible. Decision-making is facilitated by factual information and prediction of outcomes or consequences of the decision.

Wildland fire decision-making is inherently contextual in nature. As a result of broad-scale importance and utility, it can be completed at different levels for different purposes. The context of decision-making is best defined by the specific objective and its associated scale. Scale can include both temporal and spatial considerations and can vary from a site-specific individual fire tactical situation to a national strategic level. Application focus ranges from decisions regarding fire management across large areas to an assessment of entire programs.

Combinations of scale and focus result in four major levels of decision-making and include: site-specific incident level (tactical), site-specific incident level (strategic), unit or Area level (strategic), and national (strategic) level.

The following table defines these four levels and shows where the LTIP has its highest applicability:

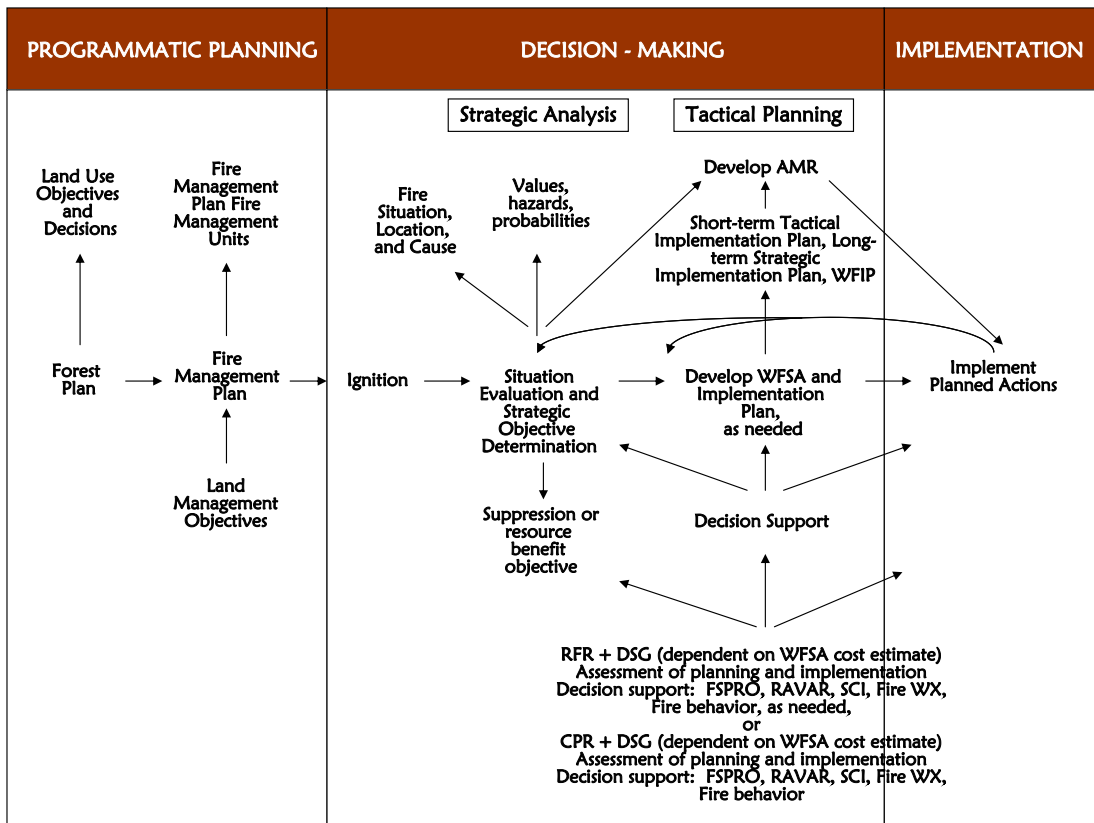
**Table 3.** Definition of decision making levels and applicability of various processes for decision support and documentation.

| Decision Making Level   | Management Focus (strategic or tactical) | Applicable Process and Importance   |
|---|--|---|
| <p><b>Incident level:</b><br/>Relates to specific activities that may have an immediate short-term temporal dimension and a small spatial dimension or may trend toward a long-term temporal dimension and larger spatial dimension relative to a site-specific incident. Examples of decision-making at this level would address the determination of tactical operations on a wildland fire, will be completed after a fire has been ignited, and may be completed on a frequent basis (may be as often as twice daily). Decision support applicable at this level focuses more on situational information and short-term predictive information.</p> | Tactical                                 | Incident Action Plan (IAP)  |
| <p><b>Incident level:</b><br/>Relates to decisions about strategic direction for a particular fire. This determination involves a slightly broader/coarser scale analysis; one that evaluates specific concern (communities, sensitive resources, water quality, air quality, habitat, resource management objectives, etc. = values), the fire environment</p>   | Strategic                                | Wildland Fire Situation Analysis, Wildland Fire Implementation Plan, Long Term Implementation Plan – all directly important at this level |

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| <p>(weather, fuels, topography, etc. = hazard), and likelihood of negative impacts. Examples of decision-making at this level involve developing a strategic alternative and objectives for a wildland fire, may occur after ignition (but could be developed prior to ignition), and will be completed once but can be revised, adjusted, or re-done as needed. Decision support applicable at this level will focus on longer-term periods, provide more quantitative information about potential outcomes, and factor in values, hazard, and probabilities.</p>  |                  |  |
| <p><b>Unit or Area level:</b><br/>Relates to decisions about individual or multiple fires on both a short- and long-term temporal situation. It will be strategic in nature and focus on a broader scale than individual incident decisions. These decisions will be made by Agency Administrators, central office (State, Regional, Area) or Geographic Area MAC Groups. An example of this type of assessment could include the completion of a long-term risk assessment for complex multiple fire events affecting local and regional capabilities, resource availabilities, and potentially persisting for long durations. Applicable decision support will be long-term situational and fire spread and behavior projections and fire occurrence information.</p> | <p>Strategic</p> | <p>Compilation of Wildland Fire Situation Analyses, Wildland Fire Implementation Plans, and Long Term Implementation Plans – indirect importance in developing resource needs, critical management actions and management action points, and assigning scarce resources and prioritizing incidents</p> |
| <p><b>National level:</b><br/>Involves long-term strategic decisions affecting large areas with varying timeframes. This level is the most coarse and seldom focuses on an individual incident. It will be made at the Agency Head and National MAC Group levels. It will primarily focus on fire activity effects on resource availability, incident prioritization, and resource allocation. Applicable decision support will come from predictive service units and Geographic Areas.</p>  | <p>Strategic</p> | <p>No specific process has a direct relationship at this level, all long-term processes could have some indirect relationship and importance but decisions are not made for individual incidents</p>   |

Wildland fire management activities start with programmatic planning that provides the foundation for the actual implementation. Land and Resource Management Plans and Fire

Management Plans define objectives, resource practices, fire management strategies and tactics, and the overall program to manage wildland fire. This direction will influence both decision making and implementation of management actions in the later stages. Scale, scope, and duration of management actions result from the fire situation and decisions made during the decision making stage. It is critically important to accumulate the best available information and compare and evaluate alternatives during decision making. Good, informed decisions can limit potentials for unnecessarily excessive or long-term suppression expenditures. The implementation stage is where decisions are fully implemented and goals of achieving management efficiencies do not stop once implementation starts. Continual monitoring, evaluation, and revision as needed contribute to improved management efficiency. Figure 1 shows these categories and the flow of activities from land use planning to implementation for a specific incident.



**Figure 1.** Generalized flow of management activities from programmatic planning to implementation.

Fire Management Plans, initial fire size-up, fire danger information, and weather and fire behavior information as well as pre-planned information are readily available to the local managers. Tools and information analysis processes are available to provide further decision support assistance to managers.

After an ignition occurs, a standard information set (refer to Incident Response Pocket Guide or Interagency Standards for Fire and Fire Aviation Operations, WFIP Stage I Strategic Fire Size-Up, or locally developed operating guidelines and forms) is needed for managers to determine if



the fire meets requirements for management under wildland fire use or will be suppressed. Two key pieces of information must be acquired to make this determination: fire location in regard to the Fire Management Plan's Fire Management Unit and the cause of the fire. Additionally, basic information regarding the situation surrounding the fire, including observed and predicted weather; observed and predicted fire behavior; fuels and fuel moisture situations; fire danger, local, regional, and national situations; values, hazards, and probabilities of effects on values; and Agency Administrator input are needed. After review of this information, managers will have a description of the fire situation, an initial assessment of risk, and clarification of the strategic objectives for the fire. Products generated from this phase of Decision Making include: documentation of fire situation, location, and cause; completion of risk assessment; determination and documentation of strategic objective; and definition of an initial appropriate management response.

**When is an LTIP Completed:** In the absence of detailed pre-planning, the decision-making process that directly influences the management of wildland fires begins after an ignition occurs. Decisions will be made regarding requirements of the fire to be managed for resource benefits; what the risk of the fire is in terms of site-specific values, threats, and probability of negative impacts; if this level of risk is acceptable to Agency Administrators; what strategic objective will be selected for management actions, and strategy and tactics. Sources of information to support these decisions will include the FMP; components of the Wildland Fire Implementation Plan (WFIP) Stage I, II, and III; Wildland Fire Situation Analysis (WFSa); decision support tools and data; and dependent upon projected costs to manage the fire, a Regional Forester's Representative (RFR) and Decision Support Group (DSG) or Chief's Principle Representative (CPR) and DSG. Information associated with the decision process will assist in the preparation of and be documented in the WFSa, WFIP, any short-term implementation plan, or LTIP, and will aid in development of the appropriate management response.

**WILDLAND FIRE MANAGEMENT DECISION SUPPORT TOOLS:**

An array of decision-making support tools is available to support wildland fire decision-making. The use of technological tools is appropriate when a specific tool can give the decision-maker information that helps reduce uncertainty associated with possible outcomes of the decision facilitate better decisions.

Technological advances in fire behavior prediction, meteorological analysis, fire spread estimation, fire effects prediction, smoke production and dispersal, rare event assessment, and fire area simulation make it possible to obtain better information, reduce uncertainty, assess potential fire outcomes, evaluate consequences of failure, determine probabilities of success, and evaluate strategic alternatives and tactics more effectively than ever before. Using these tools to gain the type of information necessary for consideration in decision-making can promote better management choices, improved management efficiency, and hopefully, more desirable outcomes.

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|--|---|
| <b>Specific areas where decision support tools add value</b> | <ul style="list-style-type: none"> <li>• Indications of how the fire may burn; predictions of intensity and severity,</li> <li>• Fuel conditions, moisture conditions, departures from average conditions,</li> <li>• Fire dynamics - indicators of potential rapid escalation in fire</li> </ul> |
|--|---|

- behavior,
- Analysis of fire danger indicators, comparison with historic records,
- Fire history reviews, records of past fires in terms of area burned and type of fires (i.e., low - moderate intensity, surface fire, stand replacement, etc.),
- Probability of the fire reaching a planning area boundary,
- Probability of a season-ending weather event,
- Indications of where the fire may spread, or total area that may be burned by the fire,
- How fast the fire will travel,
- How soon the fire may reach critical sites or the planning area boundary,
- Predictions of the range of potential fire effects on natural and cultural resources,
- Projections of values to be protected in the proximity of the fire,
- Identification of primary resource values to be protected and/or at risk by ongoing large fire events. and
- Probability of where the fire will spread.

**What Decision Support Tools are available?**

Decision support tools that can be utilized to provide additional information concerning the fire environment include, but are not limited to:

- FSPPro – Fire Spread Probability Model,
- RAVAR – Rapid Assessment of Values at Risk Model,
- SCI - Stratified Cost Index,
- FARSITE – Fire Area Simulator,
- FlamMap,
- BEHAVE Plus,
- FireFamily Plus,–
- RERAP – Rare Event Risk Assessment Process, WindWizard,
- NFDRS,
- Fuel Moisture Monitoring.

The choice of technique will depend on the information needed and the state of knowledge regarding that subject area.

**V. SUMMARY**

Long Term Implementation Plans represent an additional tool for managers to develop and document long term direction for long duration wildfires. Given the changing fire environment that we are faced with, the potential for increasing fire sizes, scarcity of firefighting resources, and competition for resources, our ability to move those fires with lower direct threats to values into long duration designation and develop an appropriate plan to guide actions over the course of the fire is becoming increasingly important.

An LTIP must be recognized as a comprehensive plan that provides this direction from an analysis of the situation and utilization of the appropriate decision support tools.