Project Name**:** Valley Forge National Historical Park

Unit Name**:** Yellow Springs 1

Element 1: Signature Page

PRESCRIBED FIRE PLAN

ADMINISTRATIVE UNIT NAME(S): Valley Forge National Historical Park

PRESCRIBED FIRE NAME:
Prescribed Fire Unit (Ignition Unit): Yellow Springs 1

PREPARED BY:
Name (print): Matthew Boss Qualification/Currency: RXB2/ Current

Signature: /s/ Matthew Boss Date: 8/26/14

TECHNICAL REVIEW BY:
Name (print): Tomas K. Liogys Qualification/Currency: RXB2/ Current

Signature: /s/ Tomas K. Liogys Date: 9/9/14

COMPLEXITY RATING: Moderate

MINIMUM BURN BOSS QUALIFICATION: RXB2

APPROVED BY:
Name – Agency Administrator (print): Kate Hammond, Superintendent Valley Forge NHP

Signature – Agency Administrator: /s/ Kate Hammond Date**:** 9/29/14

AGENCY ADMINISTRATOR IGNITION AUTHORIZATION
(Prescribed Fire Plan, Element 2A)

Instructions: The Agency Administrator Ignition Authorization must be completed before a prescribed fire can be implemented. If ignition of the prescribed fire is not initiated prior to expiration date determined by the agency administrator, a new authorization will be required.

Prior to signature the agency administrator should discuss the following key items with the fire management officer (FMO) or burn boss. Attach any additional instructions or discussion documentation (optional) to this document.

Key Discussion Items

A.	Has anything changed since the Prescribed Fire Plan was approved or revalidated? *Such as drought or other climate indicators of increased risk, insect activity, new subdivisions/structures, smoke requirements, Complexity Analysis Rating.*
B.	Have compliance requirements and pre-burn considerations been completed? *Such as preparation work, NEPA mitigation requirements, cultural, threatened and endangered species, smoke permits, state burn permits/authorizations.*
C.	Can all of the elements and conditions specified in Prescribed Fire Plan be met? *Such as weather, scheduling, smoke management conditions, suitable prescription window, correct season, staffing and organization, safety considerations, etc.*
D.	Are processes in place to ensure all internal and external notifications and media releases will be completed?
E.	Have key agency staffs been fully briefed about the implementation of this prescribed fire?
F.	Are there circumstances that could affect the successful implementation of the plan? *Such as preparedness level restrictions, resource availability, other prescribed fire or wildfire activity*
G.	Have you communicated your expectations to the Burn Boss and FMO regarding if and when you are to be notified that contingency actions are being taken?
H.	Have you communicated your expectations to the Burn Boss and FMO regarding decisions to declare the prescribed fire a wildfire?

Implementation Recommended by:
FMO or Prescribed Fire Burn Boss Signature: /s/ Cliff Lively Date: 9/29/14

I am authorizing ignition of this prescribed fire between the dates of 9/29/2014 and 11/20/2014. It is my expectation that the project will be implemented within this time frame and as discussed and documented and attached to this plan. If the conditions we discussed change during this time frame, it is my expectation you will brief me on the circumstances and an updated authorization will be negotiated if necessary.

Additional Instructions or Discussion Documentation attached (Optional): Yes ☐ No☐

Ignition Authorized by:
Agency Administrator Signature and Title: /s/ Kate Hammond Date: 9/29/14

PRESCRIBED FIRE GO/NO-GO CHECKLIST

(Prescribed Fire Plan, Element 2B)

*** Preliminary Questions**	**Circle YES or NO**
A. Have conditions in or adjacent to the ignition unit changed, (for example: drought conditions or fuel loadings), which were not considered in the prescription development? If **NO** proceed with the Go/NO-GO Checklist below, if **YES** go to item B.	YES NO
B. Has the prescribed fire plan been reviewed and an amendment been approved; or has it been determined that no amendment is necessary? If **YES**, proceed with checklist below. If **NO, STOP: Implementation is not allowed. An amendment is needed.**	YES NO

GO/NO-GO Checklist	**Circle YES or NO**
* Have ALL permits and clearances been obtained?	YES NO
* Have ALL the required notifications been made?	YES NO
* Have ALL the pre-burn considerations and preparation work identified in the prescribed fire plan been completed or addressed and checked?	YES NO
* Have ALL required current and projected fire weather forecast been obtained and are they favorable?	YES NO
* Are ALL prescription parameters met?	YES NO
* Are ALL smoke management specifications met?	YES NO
* Are ALL planned operations personnel and equipment on-site, available and operational?	YES NO
* Has the availability of contingency resources applicable to today's implementation been checked and are they available?	YES NO
* Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones?	YES NO

If all the questions were answered "**YES**" proceed with a test fire. Document the current conditions, location and results. If any questions were answered "**NO**", DO NOT proceed with the test fire: Implementation is not allowed.

After evaluating the test fire, in your judgment can the prescribed fire be carried out according to the prescribed fire plan and will it meet the planned objective? **Circle: YES or NO**

* Items required if checklist is modified *

Burn Boss Signature:_____ Date:_____

Project Name: Valley Forge National Historical Park

Unit Name: Yellow Springs 1

Element 3: Complexity Analysis Summary

This summary should include the same summary rationale that is in the complexity analysis in Appendix C of the prescribe fire plan.

ELEMENT	RISK	POTENTIAL CONSEQUENCE	TECHNICAL DIFFICULTY
1. Potential for escape	Low	Moderate	Low
2. The number and dependence of activities	Moderate	Moderate	Low
3. Off-site values	Low	Low	Low
4. On-site values	Moderate	Moderate	Moderate
5. Fire behavior	Low	Low	Low
6. Management organization	Moderate	Moderate	Moderate
7. Public and political interest	Moderate	Moderate	Moderate
8. Fire treatment objectives	Low	Low	Low
9. Constraints	Low	Low	Low
10. Safety	Low	Low	Low
11. Ignition procedures/methods	Moderate	Moderate	Moderate
12. Interagency coordination	Low	Low	Low
13. Project logistics	Low	Low	Low
14. Smoke management	Low	Moderate	Low

COMPLEXITY RATING SUMMARY	OVERALL RATING
RISK	Moderate
CONSEQUENCES	Moderate
TECHNICAL DIFFICULTY	Moderate
SUMMARY COMPLEXITY DETERMINATION	Moderate

Remarks: This project ranks as moderately complex due to the factors listed in the Complexity Analysis (Appendix C) and will require a qualified RxB2 to complete. Operationally, the planned prescribed fire would not be considered unusual, but this being the first time prescribed fire will be applied within the park boundaries, public interest and attention levels may be higher than normal. The potential consequences may be amplified during this operation due to the increased awareness and first time exposure of prescribed fire operations to the public of this area.

Element 4: Description of Prescribed Fire Area

A. Physical Description

1. **Location:** Lat/Long: 40° 04' 59.47" N X 75° 27' 36.92" W
   County/State: Chester County, Pennsylvania
2. **Size:** 18 Acres
3. **Topography:** Rolling hills, 0-5% slope
4. **Project area:** Valley Forge National Historical Park
5. **Ignition unit boundaries:**
   North- Yellow Springs Road
   East- A mow line to be constructed parallel to Wilson Road
   South- A mow line at edge of field or a leaf blown line inside wood line
   West- Unnamed creek drainage adjacent to field edge

B. Vegetation/Fuels Description:

1. **On-site fuels data:** Fuels within the burn units consist of Fire Behavior Fuel Modeling (FBFM) GR3 (103) low load, very coarse, humid climate grass (dynamic), and TU2 (162) moderate load, humid climate timber-shrub
2. **Adjacent fuels data:** Fuels adjacent to the ignition unit are similar to fuels found within the unit.
3. **Percent of vegetative type and fuels models:** GR3 = 80%
   TU2 = 20%

C. Description of Unique Features, Natural Resources, Values:

Unique Features- Valley Forge National Historical Park educates the American people about one of the most defining events in our nation's history and preserves the natural and cultural resources that commemorate the encampment of the Continental Army at Valley Forge in 1777-78. Preserving, maintaining and interpreting a cultural landscape representative of that event has been identified as a primary goal of the park.

Natural Resources- There are several large trees within the unit that will need to be protected from heat. Park Management has made it clear that excessive scorch to these trees is unacceptable.

Values- The burn location was selected largely due to its lack of intensive use during the 1777 encampment. Although some cultural artifacts may be present, the chance of finding/disturbing such items is much less than in other areas of the park.

-A historic barn (Walker Barn) is located at the northwest corner of the unit. The barn has wood and stone wall construction, wooden roof shingles, and several large door/window openings.

-There is a remnant homesite adjacent to the barn (non-historic). The structure has been removed but some inactive utilities are still present. There is an inactive electrical service and septic tank vents that will need additional prep.

-There is a municipal public water main with associated infrastructure including manholes and valve covers located within the unit running parallel to Yellow Springs Road.

D. Maps - Attach in Appendix A

1. Vicinity (Required)
2. Project/Ignition Unit(s) (Required)
3. Significant or Sensitive Features (Optional): ☐ Included ☒ Not Included

Element 5: Objectives

Goal 1: Provide for Firefighter and Public Safety.
- **Objective 1:** Ensure the public experience no injuries.
- **Objective 2:** Ensure fire personnel receive no lost time injuries.

Goal 2: Perpetuate Open Grasslands and Reduce Woody Species.
- **Objective 3:** Maintain <25% of woody vegetation as measured after 3 prescribed fire treatments.
- **Objective 4:** Maintain >80% cover of native grass and herbaceous species as measured after 3 prescribed fire treatments.

Goal 3: Control Invasive/Exotic Plant Species.
- **Objective 5:** Reduce the percent cover of Oriental bittersweet (*Celastrus orbiculatus)*, Japanese honeysuckle (*Lonicera japonica)*, Chinese silver grass (*Miscanthus sinensis)* by 25% percent after 3 prescribed fire treatments.

Goal 4: Conduct burns with Minimum Smoke Impacts.
- **Objective 6:** Visibly reduce smoke impacts to roads by completing ignitions quickly and with limited ignition of any heavy fuels present.Element 6: Funding

A. Cost: Costs will be primarily for personnel and equipment conducting burn operations. The unit will require some preparation. Firing operations and post firing patrols should be of short duration with the goal of keeping overall costs low.

B. Funding source: This project will be funded through wildland urban interface hazard fuel reduction funding sources. A cost accounting code will be established.

Element 7: Prescription

A. Prescription Narrative: Past treatments in other parks have shown that the fire behavior generated under these environmental prescription parameters has been generally effective in meeting management objectives. The prescription range has been selected in order to allow implementation of burns during varying season (growing or dormant). This flexibility of implementation based on seasonal plant characteristics is expected to allow managers to better influence target species or take advantage of unique environmental conditions that may present themselves infrequently. It also offers managers appropriate windows in order to pair differing types of treatments such as mechanical or chemical, with fire, in order to better meet the park's open space objectives.

B. Prescription Parameters:

Elements	Acceptable Range
Temperature (degrees F)	32 – 90
Relative Humidity	20 – 70
Wind Direction	Any Direction With Appropriate Lift and Dispersion
Mid-Flame Wind Speed	1 – 10 mph*
1 Hour Fuel Moisture (%)	5-13
Air Quality Index	<101

* Mid-flame wind speed ranges derived by applying an unsheltered wind adjustment factor (WAF) to the 20-foot winds used in BehavePlus calculations. WAF = 0.7 for all fuel models.

** No burning will be conducted when the forecast is 101 or above. Below 101 corresponds to an air quality action day code of green and yellow. The Air Quality Index Forecast is available for Chester County and is usually available May through September.

C. Fire Modeling: See Appendix E

Element 8: Scheduling

A. Implementation Schedule: Implementation may occur anytime fuel and weather conditions will allow resource objectives to be met.

B. Projected Duration: Generally, no more than one operational period for ignition and mop-up. The unit will be checked daily until the prescribed fire has been declared out.

C. Constraints: No burning will be conducted in an area covered by an Air Quality Index (AQI) forecast when the forecast is 101 or above. Below 101 corresponds to an air quality action day code of green and yellow.

Element 9: Pre-burn Considerations and Weather

A. Considerations: All burn unit site preparations undertaken will conform to Minimum Impact Suppression Tactics (MIST) as described in the Fireline Handbook and Incident Response Pocket Guide.

1. **On-site: <u>To be confirmed by burn boss or designee prior to the burn;</u>**
   - Control lines in place around perimeter of targeted area are adequate for forecasted conditions.
     Control lines may consist of:
     - Leaf blown/raked lines into the woods allowing fire crews to utilize creeks, drainages and changes in vegetation to control fire.
     - Mowed outer perimeter control lines with a width from 4 to 12 feet and a resultant vegetation height averaging 4 inches. *(It is preferred to mow lines well in advance of the burn, allowing cut material to compact down to the thatch layer and to allow the line to become green with new grass growth).*
   - Preparations completed around historic cultural features (buildings, foundations, etc.)
   - Preparations completed around park infrastructure (utilities, monuments, etc.)
   - Assess unit perimeter for snags that may pose holding concerns or firefighter/public safety issues, prep or fall as required.
   - Break up and scatter jackpots and windrows adjacent to fire lines that pose a threat to holding forces.
   - Inspect contingency lines and infrastructure adjacent to the burn unit for holding concerns in the event of an escaped fire.
   - Designate and mark drop points as required.
   - Water sources identified and scouted.

2. **Off-site: <u>To be completed by designated park staff at least one week prior to burn</u>:**
   - Park Fire Coordinator/Cultural Resource Staff- consult as to sensitive cultural value locations within targeted sub-units. Generate maps with known locations. These locations may be sensitive and care should be taken to not allow distribution to the general public.

- PIO or designee- Issue Press Release, notify adjacent land owners and park staff of pending burn.

To be completed prior to ignition the day of burn by Burn Boss or designee:

- Obtain spot weather and Air Quality Index forecast.
- Determine potential smoke impacts and place signs as required.
- Complete Notification List Items (see below).
- Ensure an Administrative Go/No-Go has been prepared and signed by the Agency Administrator..
- Prepare maps and Incident Action Plans.

B. Method for Obtaining Weather and Smoke Management/Air Quality Forecasts:

- A spot fire weather forecast will be obtained from the Mt. Holly NJ forecast office of the National Weather Service http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=lwx
- An Air Quality Index Forecast will be obtained from the PA DEP through the regional DEP office or at: http://www.airnow.gov/index.cfm?action=airnow.fcsummary&stateid=45

C. Notifications: A pre-burn notification checklist is located in the Communications section of the IAP (appendix F).

Pre-Burn Notification Checklist

Contact	Phone Number
Chester County Dispatch	[redacted]
Montgomery County Dispatch	[redacted]
PA BOF District 17	[redacted]
NPS NER Fire Management Officer	[redacted]
NPS Mid-Atlantic Fire Management Officer	[redacted]

Element 10: Briefing

A. Briefing Checklist; including, but not limited to: (additional items may be added)

- ☐ Burn organization and assignments
- ☐ Prescribed Fire objectives and prescription
- ☐ Description of prescribed fire project area
  - ☐ Special considerations and sensitive features
- ☐ Expected weather and fire behavior
- ☐ Communications
- ☐ Ignition plan
- ☐ Holding plan
- ☐ Contingency plan and assignments
- ☐ Wildfire declaration
- ☐ Safety and medical plan

Element 11: Organization and Equipment

Position	Red Card Qualification*	Minimum # of Personnel Required
Burn Boss	RXB2	1
Firing Boss	FIRB	1
Ignition Personnel	FFT2	2
Holding Boss	SRB	1
Holding Personnel	FFT1	1
	FFT2	4
Fire Weather Observer	FEMO if available	1 (may also be performed by holding personnel)
Minimum Personnel		**10**

Equipment	Type	Minimum # Required
Engine #1	Type 6 or larger	1
Engine #2	Type 6 or larger **or** UTV w/pump package	1

*The above table represents the **recommended minimum** personnel and equipment. The Burn Boss is ultimately responsible for evaluating each specific burn unit the day of the burn and determining the required number, and type of resources required to safely implement the burn.*

- Additional resources may be added or resource configurations/assignments altered as long as the minimum requirements are met. Individual burn organization and assignments will be documented in the IAP.
- A review of the anticipated fire behavior (Appendix E), along with prior experience in these fuel models, indicates that the above minimum staffing levels are adequate.

Element 12: Communication

A. Radio Frequencies:

Function	Name	RX Freq.	TX Frequency	DEC NAC	Channel	Remarks
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]

B. Telephone Numbers:

Position	Phone Number
VAFO Superintendent	(office) 610-783-1037 [redacted]
VAFO Chief Ranger	[redacted]
VAFO Safety Officer/Fire Coordinator	[redacted]
VAFO Chief of Interpretation	[redacted]
VAFO Chief of Maint.	[redacted]
VAFO Chief of Planning	[redacted]
VAFO Resource Manager	[redacted]
VAFO GIS Specialist	[redacted]
VAFO Business Manager	[redacted]
VAFO LE Supervisor	[redacted]
VAFO Public Information Officer	(office) 610-783-1013

Mid Atlantic Area Fire Management Officer	[redacted]
Northeast Region Fire Management Officer	[redacted]
Chester County Dispatch	[redacted]
Montgomery County Dispatch	[redacted]
NWS Mt. Holly 24hr Forecaster Desk	[redacted]

Element 13: Public and Personnel Safety, Medical

A. Safety Hazards: Safety hazards generally associated with prescribed fire such as sharp tools, equipment with moving parts, flammable liquids and materials, uneven terrain, environmental hazards (snakes, ticks, smoke, etc.), will be present with this operation. **Additional important safety hazards unique to this operation will be vehicular traffic on Yellow Springs Road,**

B. Mitigation: All personnel will wear required wildland fire PPE and receive a full operational briefing to cover risk management, LCES and other critical mitigation tools. Visibility on roads will be monitored, and "Smoke Ahead" or "Prescribed Burn" signs will be posted. The wind direction will be monitored closely to ensure smoke impacts to roadways are at a minimum. Supervisors will make efforts to avoid putting people on or alongside the road. Personnel will only work alongside the road when absolutely necessary and with mitigation measures in place (traffic control, spotters, etc.) Personnel will be monitored for excessive smoke exposure. Engines and UTV's will have headlights on and emergency lights (if available) flashing while driving on roadways.

C. Emergency Medical Procedures: In the event of an injury, contact will be established with the injured party's immediate incident supervisor and burn boss. If the injury requires medical assistance, on-site crewmembers that are certified as medical first responders will assist the injured party until relieved by more qualified medical personnel. The Burn Boss will implement the IAP Medical Plan as required to initiate medical response and transportation to the nearest treatment facility. Area ambulance services and hospitals with contact information are included in the IAP Medical Plan (Appendix F) and will be reviewed with incident personnel at the beginning of each operational period**.**

D. Emergency Evacuation Methods: Emergency evacuation methods will be largely dependent on the needs of the patient, the level of care available on site, and the location of the most appropriate treatment facility, if the needs have exceeded that level of care available. Generally, for minor injuries not requiring EMS response, transport to care facilities may be by NPS vehicle. For injuries requiring EMS response, ground transport by ambulance or medevac by helicopter are both available options. EMS response will be initiated by the burn boss and the most appropriate evacuation method will be determined by the medical personnel treating the patient.

E. Emergency Facilities:

Name	Telephone/Radio	Address	Ground	Air	Helipad	Burn Center
Valley Forge Urgent Care	(610) 539-3221	2521 West Main Street Norristown, PA 19403	10 min	N/A	N	N
Phoenixville Hospital	(610)-983-1000	140 Nutt Road Phoenixville, PA 19460	10 min	5 min	Y	N
Temple University Hospital	(215) 707-2000	3401 N Broad St, Philadelphia, PA 19140	30 min	10 min	Y	Y

Element 14: Test Fire

A. Planned Location: The burn boss will determine the test fire site the day of the burn based on weather, topography, and fuel conditions. The test fire will then be ignited at a downwind location in fuels that best represent the majority of the burn unit. The burn boss will observe the test fire to ensure wind direction and burning conditions are within predicted and required parameters. If conditions are not within these parameters the test fire will be extinguished and the burn postponed until conditions improve. The size and duration of the test fire will be determined by the burn boss.

B. Test Fire Documentation: The test fire results documentation table can be found in the IAP Template (Appendix F).

Element 15: Ignition Plan

A. Firing Methods, Techniques, Sequences and Patterns: Backing, Flanking, Headfire and Point Source Ignition techniques may be used. Typically, ignition will begin on the downwind side of the burn unit. Once started, the two firing groups will split and work in opposite directions. These two groups will work slowly creating a wide enough black line to stop fire if a wind shift takes place. Eventually the two ignition groups will meet on the opposite side of the burn unit. Interior ignition may be used to facilitate blacklining or to assist in achieving desired fire effects.

B. Devices: Any approved common ground ignition devices may be employed during the implementation of this plan. The most commonly used ignition devices that may be employed are matches/lighters, drip torches, fusees and flares. Firing operations may employ any combination of these tools to achieve resource management objectives. Established safety practices for the use of these ignition devices will be observed at all times, refer to the attached JHAs.

C. Minimum Ignition Staffing: See Element 11: Organization and Equipment.Element 16: Holding Plan

A. General Procedures for Holding: The Holding Boss will recommend holding strategies to the Burn Boss who will make the final decision on which resources will be used based on needs identified in the Adequate Holding Resources Worksheet (attached).

Holding actions include all standard fire suppression actions approved within the current Fire Management Plan. In general, the emphasis on selecting holding actions will be the use of Minimum Impact Suppression Tactics (MIST). Holding resources may include engines, water tenders, or UTVs with water-handling equipment and personnel with hand tools. Holding resources will work to ensure that the prescribed burn is contained within the targeted area and to protect infrastructure, private property, cultural sites, monuments, research equipment, and other values at risk. Known values at risk and water sources will be identified for personnel in briefing. Use of wet line along mowed perimeters will be the primary tactic utilized.

B. Critical Holding Points and Actions: Perimeters adjacent to the park boundary should be considered the critical holding areas. Additional critical points of concern include those areas of sensitive resources such as park infrastructure, buildings, monuments, and identified cultural values. Items included in Element 4C Values are the primary focus adjacent to the unit.

Actions taken to mitigate these areas of concern will include reconnaissance prior to ignition by burn personnel to verify that adequate unit preparation has taken place and to familiarize burn personnel with the location of and access to these critical holding areas. Additionally, the Holding Boss may choose to staff these areas with additional personnel and/or stage additional equipment to be ready to respond to holding issues.

C. Minimum Organization or Capabilities Needed: See Element 11: Organization and Equipment.

Element 17: Contingency Plan

A. Management Action Points or Limits:

- **a.** Resources management/hazardous fuel reduction objectives not being met during the burn operation.
- **b.** Prescription elements exceeded.
- **c**. Smoke impacts to roads begins to threaten public safety
- **d**. Spotting and/or escaped fire occurs.

B. Actions Needed:

a. **Resources management/hazardous fuel reduction objectives not being met during the burn operation:** The FEMO or designated weather observer is responsible for observing fire behavior and documenting first order fire effects as the burn progresses and relaying these observations to the Firing Boss and Burn Boss. The Firing Boss may attempt to modify firing methods in order to achieve objectives. Should it become apparent that despite modification of firing techniques, objectives are not being met, the Burn Boss will relay to the Firing Boss to terminate the prescribed fire. Termination of ignition operations will take place at a location where holding actions can stop the unwanted spread of fire, preferably utilizing natural barriers. Operations will concentrate on holding and/or mop-up until such time as conditions become more favorable to continue ignition operations.

b. **Prescription Elements Exceeded:** Should prescription elements be exceeded during the course of ignition operations, the Burn Boss shall notify the Firing Boss, if assigned, to terminate ignition at the first available opportunity as described above. Operations will concentrate on holding and / or mop-up until such time as conditions return to acceptable levels. If it is anticipated that conditions will improve, operations may hold in place until weather / fire behavior observations indicate it is acceptable to continue. If conditions are unfavorable to continue ignition operations, efforts shall be directed towards improving holding lines and mopping up fire to preclude the possibility of escape. Weather and fuels conditions shall be monitored by the FEMO or designated weather observer to determine when conditions are favorable to resume burn operations.

c. **Smoke impacts to roads begin to threaten public safety:** The burn boss will designate resources to post Prescribed Fire and Smoke Ahead signs along the impacted road. If required, the Burn Boss through the Chief Ranger shall task law enforcement or burn personnel with traffic duties to slow down road traffic, implement one-way traffic, escort pilot car through smoke impacted areas, or close roadways until visibility improves.

d. **Spotting and / or Escaped Fire:** In the event of spot fire or slop-over, holding forces shall immediately notify the Burn Boss with a size-up and assessment as to additional resource needs at the scene. Holding actions will be undertaken as needed to contain the fire to the target area identified in the IAP.

If spot fires or slop-overs occur outside of project area, the Burn Boss or designee with appropriate qualifications will supervise suppression actions. If spot fires and/or slop-over cannot be controlled by the end of the next burning period with on-site and contingency resources, or exceeds the capabilities of onsite and contingency resources, the Burn Boss will declare the prescribed fire a wildfire per Element 18 below.

C. Minimum Contingency Resources and Maximum Response Time(s): The following resources are typically available as contingency resources. The availability of contingency resources shall be identified prior to initiation of operations and be identified in the IAP for that operational period.

Contingency Resource	Response Time
Berwyn Fire Company	15 min.
Valley Forge Fire Company	15 min
King of Prussia Fire Company	15 min
Pennsylvania Bureau of Forestry	2 hours
NPS Engine or Squad	Next operational Period

Element 18: Wildfire Declaration

A prescribed fire must be declared a wildfire by those identified below when that person determines that the contingency actions have failed or are likely to fail, and control of the escaped prescribed fire cannot be attained by the end of the next burning period by on-site and listed contingency resources. A prescribed fire can be converted to a wildfire for reasons other than an escaped fire as determined by the Burn Boss.

The Burn Boss will assume the role of Incident Commander (IC) upon declaring an escaped fire. The IC will immediately notify all burn personnel of the change in status and will order contingency/additional resources necessary for suppression strategies through the 911 system.

Once declared a wildfire, the fire may not be returned to a prescribed fire status. All escaped fires will be reviewed per NPS policy.

A. Wildfire Declared By: Burn Boss

B. IC Assignment: Burn Boss (RXB2) transitions to ICT4 role. Personnel within the prescribed fire organization will transition into ICS wildfire positions they are qualified to fill.

C. Notifications: When a prescribed fire is declared a wildfire the following notifications will be made

Position	Contact #
VAFO Superintendent	(office) 610-783-1037 [redacted]
VAFO Chief Ranger	[redacted]
NPS Northeast Region Fire Management Officer	[redacted]
NPS Mid-Atlantic Area Fire Management Officer	[redacted]
PA Bureau of Forestry District 17	[redacted]

Element 19: Smoke Management and Air Quality

A. Compliance:

1. **Federal-** Valley Forge National Historical Park exists within an area designated by the Environmental Protection Agency as a "non-attainment area" for ground level ozone and fine particulate matter (PM2.5). No compliance/notification is required.

2. **State-** On the day of the burn the Burn Boss or designee shall report the following information to the Pennsylvania Department of Environmental Protection (DEP) Region 1 AQ Ops Chief.

   Contact Info R1 AQ Ops Chief: [redacted]

   Burn Name
   County and location (latitude and longitude if possible)
   Vegetation (grassland/brush/forest)
   Acreage to be burned
   Purpose of burn
   Person in charge of burn and how he/she can be contacted

B. Permits To Be Obtained: No permits are required

C. Smoke-Sensitive Receptors:

North: Residential Subdivisions located approx. 0.5 miles from the unit.

East: NPS owned facilities located approx. 0.25 miles from the unit.
Residential Subdivisions located approx. 1.25 miles from the unit.
Children's Hospital of Philadelphia and King of Prussia Shopping Mall located approx. 3 miles from the unit.

South: Interstate 76 and Residential Subdivisions located approx. 0.2 miles from the unit.

West: Residential Subdivisions located approx. 0.3 miles from the unit.

D. Potential Impacted Areas: It is anticipated that the most likely smoke impacts will be to Yellow Springs Road and Wilson Road. These roads are adjacent to the identified burn unit.

E. Mitigation Strategies and Techniques to Reduce Smoke Impacts:

- The burn boss shall evaluate smoke impacts to roads, and if impacts are likely, establish mop-up standards as appropriate to reduce smoldering.
- The Chief Ranger or designee will contact park employees and residents about pending prescribed fire operations.
- The burn boss will designate resources to post Prescribed Fire and Smoke Ahead signs near park entrances along the main park road, and other possible locations as identified based on forecast weather conditions.
- If required, the Burn Boss through the Chief Ranger shall task law enforcement or burn personnel with traffic duties to slow down road traffic, implement one-way traffic, or escort pilot car through smoke impacted areas.

F. Mitigation Strategies and Techniques to Reduce Air Quality Impacts: No burning will be conducted in an area covered by an Air Quality Index (AQI) forecast when the forecast is 101 or above. Below 101 corresponds to an air quality action day code of green and yellow. The Air Quality Index Forecast is only available in certain counties and usually available May through September. The forecast can be found by contacting the regional DEP office or at: http://www.airnow.gov/index.cfm?action=airnow.fcsummary&stateid=45

Element 20: Monitoring

A. Fuels Information required and Procedures: The Burn Boss or designee will determine 1 hr Fuel Moisture prior to ignition and periodically throughout the burn as needed. No other fuels information will be required.

B. Weather Monitoring (Forecasted and Observed) required and Procedures: Local weather observations will be collected by the Burn Boss or designee.

C. Fire Behavior Monitoring required and Procedures: The Burn Boss or designee will observe fire behavior to confirm flame lengths and rates of spread are within prescription, periodically throughout project.

D. Monitoring Required to ensure that Prescribed Fire Plan Objectives are Met: Following the burn, the Burn Boss or designated personnel, will conduct a qualitative assessment of the project to determine if objectives have been met. VAFO Resource staff and/or The Northeast Region Fire Effects Monitoring Crew may also evaluate fire effects at regular intervals.

E. Smoke Dispersal Monitoring required and Procedures: Smoke observations will be collected by the Burn Boss or designee.

Element 21: Post-burn Activities

A. **Post-Burn Activities:** The Burn Boss assigned to the burn unit will initiate a Prescribed Burn file to contain required records from the burn. The files will be maintained at the DEWA Fire Office and a copy will be given to the local unit Fire Coordinator (a Prescribed Fire Post Burn Report Checklist is provided with the IAP to facilitate documentation).

Prescribed Fire Plan Appendices

Appendix A: Maps: Vicinity, Project or Ignition Units (or both), Optional: Significant or Sensitive Features, Fuels or Fuel Model, Smoke Impact Areas

Appendix B: Technical Reviewer Checklist

Appendix C: Complexity Analysis

Appendix D: Agency-Specific Job Hazard Analysis or Risk Assessment

Appendix E: Fire Behavior Modeling Documentation and Holding Resources Worksheet

Appendix F: IAP Template

Project Name: Valley Forge National Historical Park

Unit Name: Yellow Springs 1


Valley Forge National Historical Park
Pennsylvania
National Park Service
U.S. Department of the Interior
Yellow Springs 1 Prescribed Burn
N
Walker Barn
Yellow Springs Road
Wilson Road
Pennsylvania Turnpike
Legend
Proposed Prescribed Burn Boundary - 16.8 ac.
Hydrology
Authorized Park Boundary
Privately Owned Inholdings
Data Source: 2005 aerials obtained from the Delaware Valley Regional Planning Commission.
0
250
500
Feet