# Element 19: Smoke Management and Air Quality

Red text – guidance, to be deleted after it is considered

Green text – suggested language to be included

## A. Compliance:

Describe how the project will comply with State, Tribal, and Federal air quality regulations.

This burn plan complies with the Utah smoke management plan. For full information, see <https://smokemgt.utah.gov/static/pdf/SMP.pdf>. The following forms should be completed through the Utah smoke portal (smokemgt.utah.gov), and if the portal is unavailable, please contact the smoke coordinator.

* **Proposed annual schedule**.
* **Register and submit pre-burn information and this prescribed fire plan**. This can be submitted as far ahead of time as the information is available. Ordinarily this is done upon completion of the prescribed fire plan, but the burn boss should confirm that.
* **Burn Request.** At least two days before ignition.
* **Daily Emissions Report.** One report for each day of active ignition, within two days post-burn **-or-** once only at the end of the requested burn window if ignition does not occur.

## B. Permits to be Obtained:

Identify what permits, if any, need to be obtained.

The National Weather Service (NWS) will provide a value for atmospheric dispersion (the clearing index) in the spot weather forecast upon request. A clearing index value is also forecast by the Salt Lake NWS for each airshed in the state (<https://www.weather.gov/slc/ClearingIndex>). Either source is acceptable as a clearing index value for smoke purposes.

For days when the maximum clearing index is forecast to be 500 or greater, no additional documentation is required beyond section A, Compliance.

If the clearing index is below 500, two options are available: **De minimis**, and **HB92**

1. De minimis – This option is size-limited (no more than 20 acres of broadcast burning or 30,000 cubic feet of piled material per day). To calculate pile volume use adjusted volume from the pile calculator (<https://depts.washington.edu/nwfire/piles/>). With approval of the director, ignition may occur when the National Weather Service clearing index is between 400 and 499:
2. This approval is based on fuel type, tons of emissions, proximity to sensitive receptors, downwind values, distance from other burning, current and forecast air quality, and number of requests to burn within the airshed.
3. To request approval, the land manager is required to notify the coordinator with the above information via email or phone by 0800 hours the morning of the burn. The coordinator will make a recommendation to the director, and contact the burner with the decision.
4. If approved for de minimis burning with a clearing index below 500, the prescribed fire burn boss shall submit to the coordinator: hourly photographs, an hourly description of the smoke plume, hourly meteorological conditions, and a record of any smoke-related complaints. This can be done with the standard form for prescribed fire weather/smoke observations (Utah prescribed fire plan template appendix G) or equivalent.
5. HB92 – This is an option for potentially conducting prescribed fires with no minimum clearing index or size limit. If using this option please contact the smoke coordinator ahead of time, the week prior if possible. The land manager is required to provide a modeling demonstration to show how the burn will affect air quality. See links under policy tab at: [smokemgt.utah.gov](file:///C:\Users\pcorrigan\Documents\Smoke\Policy\Utah%20Rx%20Plan%20Template\smokemgt.utah.gov). If an HB92 demonstration is accepted, the prescribed fire burn boss shall submit to the coordinator: hourly photographs, an hourly description of the smoke plume, hourly meteorological conditions, and a record of any smoke-related complaints. This can be done with a standard form for prescribed fire weather/smoke observations, via survey123, or equivalent.

## C. Smoke-Sensitive Receptors:

Identify smoke sensitive areas including population centers, recreation areas, hospitals, airports, transportation corridors, schools, non-attainment areas, Class I areas, and restricted areas that may be impacted. Discussion may follow.

|  |  |  |
| --- | --- | --- |
| Receptor | Direction | Distance |
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|  |  |  |
|  |  |  |

## D. Potential Impacted Areas:

Special considerations must be taken to address smoke when the project is in a non-attainment area for a National Ambient Air Quality Standards including insuring compliance with State Implementation Plan provisions. Use this next green sentence if near nonattainment areas of Wasatch Front or Uinta Basin: By following the Utah Smoke Management Plan, this project conforms with federal and state regulations, including in nonattainment areas.

Projects which will potentially impact Class I areas should address any efforts to minimize smoke impacts on haze/visibility. If applicable, refer to Appendix A – Maps, which may contain maps identifying potentially impacted areas, smoke dispersion, and/or likely down-drainage paths that smoke may follow at night.

This section (D) may also be used to list general areas to screen for impact that are farther afield than the specific sensitive receptors identified above.

## E. Mitigation Strategies and Techniques to Reduce Smoke Impacts:

Include any modeling outputs, mitigation strategies, and techniques to reduce the impacts of smoke production. For emissions estimates, [BlueSky](https://tools.airfire.org/playground/v3/emissionsinputs.php) is suggested for broadcast burns and the [UW Pile Calculator](https://depts.washington.edu/nwfire/piles/) for pile burns.

The National Weather Service (NWS) will provide clearing indices pertinent to smoke dispersion in the spot weather forecast. Burn request info submitted to the Utah Smoke portal will be used to predict possible cumulative effects of all burning occurring at that time. The notification plan under Element 9 (Pre-Burn Considerations) will serve to alert appropriate partners and the public about the potential for smoke.

Emission reduction techniques that may be employed during unit prep or operationally can be mentioned here (see [examples](https://smokemgt.utah.gov/static/pdf/ERTS-V2.pdf) link).

The Burn Boss will review the spot forecast and confirm acceptable smoke dispersion with test fire. Favorable transport wind direction should be utilized, if possible, during days of ignition to minimize the impact of smoke to sensitive receptors. Burn Boss will attempt to complete active ignition during periods of adequate mixing and be aware of forecasted mixing height fluctuation throughout the burn period. Burn day hourly observations may also include a smoke plume assessment for early recognition of potentially affected areas.