**Standard Procedure**

For Portable Station Site Determination

*Adapted from Fort Air Partnership*

**Peace River Area Monitoring Program (PRAMP) Standard Procedure for selecting locations for the Portable air quality monitoring station**

**Overview**

Peace River Area Monitoring Program (PRAMP) employs a *Portable Air Monitoring Station* for use throughout the airshed.

The portable station is similar in construction and layout to other PRAMP continuous air monitoring stations, but the intention is that it is moved regularly as the need and issues arise.

The portable station must

* Be accessible year-round in normal weather conditions,
* Have available utilities,
* Be secure against vandalism,
* Be secure from both wild and domestic animals, and
* Meet the siting criteria outlined in AMD.

**Usage Guidelines**

The portable is equipped with the parameters required to calculate the Air Quality Health Index (AQHI) including NO/NOx/NO2, O3, PM2.5, and SO2 along with meteorological parameters including wind speed, wind direction, ambient temperature and relative humidity. NMHC, THC, CH4 analyzers are also installed and other intermittent samplers may be on board as the need dictates.

The portable can be used to:

* Address technical issues identified by the Technical Working Group (TWG).
* Monitor at locations in the Airshed that currently do not have monitoring (data gaps) or where little or no monitoring has ever been done.
* Monitor where other, less frequent or different time resolution monitoring has indicated there may be an air quality issue or a need for more comprehensive data.
* Identify transboundary air quality both entering and leaving the PRAMP airshed. This may involve deploying the portable in a community outside of the PRAMP airshed if it is expected that sources from within PRAMP boundaries may be causing or contributing to air quality issues in that area.
* Address issues suggested by the general public, or groups, agencies or organizations not directly part of PRAMP

The Portable station is not meant to be:

It is worth noting the portable station is not intended to provide immediate response to issues or respond to quickly changing situations like emergencies. At least 3 days is required to shut down at a current site, move the station and set up and recalibrate the instruments.

The Portable station will be placed in a single location for a minimum period of 18 months initially. This timing will be reviewed once a track record for deployment and use of the portable has been established.

**Data Collection**

Data collection from the Portable station must follow the monitoring and calibration requirements set out in the Air Monitoring Directive (AMD).

Reporting of data from this site must follow reporting requirements set out in the AMD.

Air Quality data collected by the Portable station will need to be evaluated / assessed in a timely fashion for relocation decision-making purposes.

**Scheduling**

Scheduling must be somewhat flexible to allow the portable station to remain at a site longer than originally planned should there be a need for more data to further evaluate or assess the issue or effects of any follow-up actions taken.

**Location Intake**

Candidate locations/issues will be gathered through various inputs, including the general public, TWG and the Board.

Any requests for use of the portable station must be in writing to PRAMP. The content of the request must address the following;

* Identify concern or problem in which monitoring is requested,
* Identify how long the problem has been occurring,
* What you would like to accomplish with air monitoring,
* How you think PRAMP can help?
* Are you aware of any previous air monitoring in this area or for this concern, and
* Has the appropriate regulatory organization been notified of the problem? Provide the date and contact information*.*

The TWG will convene annually to select the one location for the next 18 months of monitoring, with ranked alternative locations should the initial selected location not be available (i.e. if no suitable “on the ground” location to place the station can be found) or the previously identified issue and/or the urgency to respond to the issue have diminished sufficiently to no longer warrant monitoring by the time the portable is available to go there. The TWG may meet more frequently should the need arise.

The TWG will consider the various candidate locations according to a scoring.

Since not all factors supporting the selection of a site can be empirically recorded, the process should allow for other factors, some of which are not so easily measured or may not even be included in the Scoring Matrix at the time it is used. The TWG may reprioritize the site selection, however there must be documented reasoning for the reprioritization.

**Site Selection Approval Process**

Once the TWG approves the site selection, the PRAMP Board of Directors will be informed of the TWG’s decisions on siting, made as per this process.

The TWG will make the decision if any additional monitoring capabilities be added to the Portable to fully address the air quality issue at a given site. Once the TWG selects the site or issue to be addressed, work will begin to identify suitable “on the ground” locations if not already determined.

Although the sites selection process directs PRAMP to an issue or area to monitor, ground -truthing must be completed to select an appropriate site that has readily accessible power, good access, free of other potential ambient sources and meets the AMD siting criteria as specified in the AMD and have appropriate site documentation prepared prior to the end of sampling at the site.

Once identified, the selected locations and monitoring schedule must be included in the subsequent Monitoring Plan updates submitted to Alberta Environment and Parks as required by the AMD.

**Decision Criteria**

A decision matrix (below) will rank each candidate location using a score of 0-4 for its applicability of each of the following criteria. The scores for criteria 1, 2 & 3 will be valued at 1/3 the value of those for criteria 4, 5 & 6.

* + - 1. **Address data gaps - spatial**
			Add monitoring to parts of the airshed underserved by continuous air monitoring. Data generated from a Portable monitoring station could improve spatial characterization, characterize emissions/transport, and provide suitable input for air quality models. Additionally, they may help characterize sources and locations using triangulation.
			2. **Address Data gaps - temporal**
			A continuation of monitoring at a previous location.
			3. **Transboundary**
			Characterize air mass concentrations coming into the airshed by setting up a site upwind of most major emissions sources located inside of the PRAMP boundaries.
			4. **Population exposure**
			Enable the characterization of air quality where people live by placing the portable in various communities.
			5. **Respond to issues identified by the general public, or groups or agencies or organizations not directly part of PRAMP**

Enable PRAMP to respond to issues or concerns identified by public or groups who are not direct PRAMP members throughout the airshed (could include sites outside of PRAMP boundary as noted on page 1).

* + - 1. **Response to Issues identified by PRAMP**
			Enable PRAMP to respond to issues or concerns brought up throughout the airshed. (could include sites outside of PRAMP boundary as noted on page 1).

**Public Engagement**

The public has an on-going opportunity to bring to PRAMP’s attention air quality issues through a variety of means.  For the purposes of providing input into future portable station siting, PRAMP will engage in a formal process of gathering public input. A public engagement process has been developed alongside of this document and will be used in combination with the overall selection process. The focus will be identifying potential air quality issues – from the perspective of residents - in populated areas within the airshed that do not have a continuous air monitoring station.  The methods used will be:

* On line survey that can be accessed via PRAMP’s website.
* Meetings in or near communities that do not have a continuous air monitoring station.
* Opportunity for written input from community organizations such as Agricultural Societies and municipalities.

Locations of meetings are to be determined. The engagement process will begin when resources become available.

Issues may also be identified by the public and brought to PRAMP’s attention through informal methods.

**Scoring Guide**

* Use the following as a guideline when scoring:
	+ Score on a scale from 0-4.
	+ No half points.
	+ One aggregate score will be calculated for each candidate site.
* The quality of previous data, if any, must be considered:
	+ How recent is the data?
	+ Were the correct/same parameters measured?
	+ Proximity to other continuous sites?
* Passives data is not considered in the scoring of data gaps.

To determine the appropriate score, not all bullets under a score for a given criterion may apply or be known. Use any or all the bullets that apply to determine a score. Where stations may serve multiple purposes, place the appropriate score in each criteria. Non-applicable rows merit a score of 0.

NOTE: The scores for each of the Spatial Data Gap, Temporal Data Gap and Transboundary criteria will be multiplied by 1/3 prior to inclusion in the final total. Population Exposure, Public and PRAMP identified issues will be applied at full weight.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Score****Criteria**  | **0** | **1** | **2** | **3** | **4** |
| Spatial data Gap | Data exists from that location | Data exists from a location <5km away | Data exists from location nearby: 5 to 10 km away | Data exists from location nearby:10 to 20km | No continuous data exists from a nearby location |
| Temporal data gap | Recent data exists< 1yrs ago | Recent data exists< 3yrs ago | Data exists but is dated 3-5 yrs. ago | Data exists but is dated >5 yrs. ago | No continuous data exists at location |
| Transboundary\* | * Not near a PRAMP boundary ~25km
* Significant local sources present
* Site not representative of incoming air mass
 | Not representative of a boundary, i.e. localized sources will likely confound the data | * Within 20 km of a PRAMP boundary
* Limited local sources, low impact or moderate frequency expected
 | * Within 10 km of a PRAMP boundary
* Very representative of a boundary air mass
* Possibility of occasional impact from local sources
 | * Within 5 km of a PRAMP boundary
* No significant local sources
 |
| Population exposure | No one lives within 0.5 km of proposed monitoring site or identified source | One or 2 families live within 0.5 km of proposed monitoring site or identified source | 2 to 10 families live within 0.5 km of proposed monitoring site or identified source | 10-40 families line within 0.5 km of proposed monitoring site or identified source | >50 families live within 0.5 km of proposed monitoring site or identified source |
| Respond to issues identified by “public” (not a member of PRAMP) | * No issue identified
* Capability to address the issues identified cannot be addressed with current capability/analyzer complement or realistically added.
* No action can be taken regardless of monitoring findings (i.e. PRAMP has no influence on decision makers)
 | * Other parameters needed to address issue can be added with significant cost to PRAMP or funding is unlikely from other sources for additional parameters
 | * Identified by some residents (i.e. one family)
* Relatively new Issue with minimal impact, has only recently appeared on PRAMP radar
* Other parameters needed to address issue can be added with some cost to PRAMP
* Some consequences to not addressing it
* If source is identified, some likely hood action will be taken
 | * Issue identified by group of residents or several complaints to AEP, local councils
* Other parameters needed to address issue can be added with likely or promised funding from other sources
 | * Issue identified by an NGO, or government body
* Has been ongoing for some time, PRAMP has previously not been able to address it or it has escalated recently
* Potentially serious, concerning/damaging
* Damaging to public perception if not addressed
* Issue can be directly addressed once monitoring data is available
 |
| Response to Issues identified by PRAMP | * No issue identified
* Capability to address the issues identified cannot be addressed with current capability/analyzer complement or realistically added.
* No action can be taken regardless of monitoring findings (i.e. PRAMP has no influence on decision makers)
 | * PRAMP is pre-emptive and thinks this may become an issue
* Other parameters needed to address issue can be added with significant cost to PRAMP or funding is unlikely from other sources for additional parameters
 | * Relatively new Issue with minimal impact, has only recently appeared on PRAMP radar
* Other parameters needed to address issue can be added with some cost to PRAMP
* Some consequences to not addressing it
* If source is identified, likely hood action will be taken
 | * Other parameters needed to address issue can be added with likely or promised funding from other sources
 | * Has been ongoing for some time, PRAMP has previously not been able to address it or it has escalated recently
* Potentially serious, concerning/damaging
* Damaging to public perception if not addressed
* Issue can be directly addressed once monitoring data is available
 |