



# LaRosa Partnership Program Frequently Asked Questions

## Overall Program Strategy

### 1. What are the main research questions of water quality monitoring conducted through the LaRosa Partnership Program?

The State of Vermont considers and monitors all three components of stream health – biological, chemical, and physical. LPP aims to better characterize and fill in data gaps for the water chemistry component of stream health. The [LPP Monitoring Matrix](#) includes four monitoring categories focused on water chemistry, with the following objectives: identifying potentially high-quality waters; assessing lake tributaries' contribution to phosphorus loading in lakes; identifying stressed or impaired waters and refining the extent and/or source of the stressor; and evaluating the effectiveness of BMPs or other remediation efforts. Each LPP partner has a unique understanding of their watershed, and we rely on the partners to provide localized insight through their individual goals and research questions that fit within these broader LPP monitoring categories.

### 2. Why has LPP created one standardized sampling plan for all LaRosa partners?

The standardized plan allows the state and partners to meet our shared monitoring goals in a more efficient manner. It reduces the administrative and reporting requirements to participate in the program for partners. It also reduces the time investment required to run the program both for partners and the state by eliminating the RFP process and creating one general sampling plan and QAPP. However, we recognize that one size does not fit all, so not all monitoring goals and priorities can be included in our sampling plan. There are trade-offs with using one standardized plan, but it allows us to keep the current sampling capacity, expand the geographic distribution of monitoring sites across the state, and focus our time and energy on water quality monitoring instead of administrative processes.

### 3. What is the LPP sampling schedule?

The LPP sampling season begins in mid-April and ends in early August. This sampling schedule meets monitoring and assessment objectives such as capturing higher spring flow events and low flows typical in July and August. It also allows LPP staff to sustainably fulfill other water quality monitoring and assessment duties, such as acid lakes sampling, USFS stream sampling, and state-wide biomonitoring.

### 4. What are the financial requirements of participation?

LPP funding covers the laboratory chemical analysis of a standard set of preselected parameters (currently Total Phosphorus, Total Nitrogen, and Dissolved Chloride) sampled at sites determined during the site selection process for each partner. LPP provides funding for 8 regularly scheduled sampling events and 2 high flow events per site. LPP also provides training to project coordinators and sampling supplies including sample bottles, acidification kits, and test tube racks. Supplies will



be dropped off to partners in April and as needed throughout the season. LPP is not able to provide funding for tasks associated with monitoring such as attending the Annual Partner Training, organizing and moving samples to storage sites, or training and coordinating volunteers.

## 5. Where can partner organizations find a guide for participation in the LaRosa Partnership Program?

The [LPP Partner Guide](#) includes all the information partners need to know to participate in the program. It will be sent to all partners and posted on the [website](#) before the beginning of each sampling season.

## Site Selection and Program Capacity

### 6. How will monitoring sites be selected?

In early winter before the start of the sampling season, LPP staff will send a monitoring site nomination form to partners, who will work with their watershed planner to develop a list of nominated sites. Nominated sites will have to meet at least one of the four [monitoring matrix categories](#). Partner monitoring site nomination lists, along with those submitted by DEC staff, will be evaluated based on standardized criteria, including those outlined in the monitoring matrix, statewide spatial distribution, the analytical budget, and state and partner capacity. This evaluation will determine what sites are selected for the final annual sampling plan.

### 7. How much will VT DEC consider partners' priorities in site selection?

Partners provide important local insight and knowledge that will be considered when selecting sites for monitoring. We rely on partners' willingness and ability to sample their sites and recognize partners will be most willing to sample sites where there is shared interest between partners and DEC. However, it is likely that more sites will be nominated than we have capacity to manage and fund, so some sites will inevitably be cut during the site selection process. The Monitoring Site Nomination Form includes a section for partners to rank and explain each nominated site's monitoring priority and share the partner's assessment of the purpose/significance of monitoring that site and how well it meets the partner's organizational water quality goals. The LPP Site Selection Team considers these priorities and explanations when making the difficult decisions of which sites to prioritize for selection over others. For this reason, assigning different priorities (1, 2, or 3) and providing informative and thorough explanations for each nominated site is key to providing the critical and valued partner input needed to inform the site selection process.

### 8. What determines program capacity?

The LPP capacity is based on several factors, including VT DEC staff time and the \$100,000 analytical services budget. The exact number of sites that are chosen during the site selection process varies from year to year depending on the total number of sites submitted from all potential partner organizations. Typically, 23 - 30 partners participate in any given year, and the number of nominations per partner ranges from two to forty sites with an average of 11 sites. The LPP does its best to be equitable across all partners when selecting sites while also prioritizing sites that will provide meaningful data that best meet the shared goals of the VT DEC and partners as well as the nomination/selection criteria.



## Parameters

### 9. Why does LPP monitor the parameters total phosphorus, total nitrogen, dissolved chloride, and flow?

These parameters indicate the presence of pollutants from a range of potential sources, including direct discharges, eroding banks and roads, stormwater (lawn fertilizer, pet waste, wildlife droppings), manure, agricultural fertilizers, road salt, and atmospheric deposition. Flow information is crucial to interpreting and using this data effectively. Flow indicates what the base concentrations are and potential sources. Total phosphorus, total nitrogen, and dissolved chloride have longer hold times than other parameters (21-28 days), which provides flexibility for sampling and sample pick up. Excluding chloride and/or total nitrogen may be considered if there is sufficient recent data or evidence of land use that does not influence these parameters. Total nitrogen can also be excluded based on partner's safety concerns with using sulfuric acid required to acidify samples for preservation.

### 10. Will LPP consider sampling additional parameters?

Currently, it is not within LPP capacity to sample additional parameters. We understand that partners may have interest in monitoring other parameters and suggest contacting VAEL or other water chemistry laboratories to arrange sampling other parameters outside of LPP.

## Sampling Protocols

### 11. How will training be conducted?

LPP will hold an annual training for project coordinators who will then be responsible for training their volunteers in sampling, safety, and data recording protocols. Additional resources and details are available on the [LPP website](#) and in the [LPP Partner Guide](#).

### 12. Why does LPP require 8 regularly scheduled flow sampling events and 2 high flow events?

Sampling eight regularly scheduled events allow us to have a higher statistical power and confidence to evaluate concentrations under different flow conditions throughout the season. If we have less than 8 regularly scheduled events, the data is still useful, but the statistical significance drops. Two high flow events provide the potential range of concentrations that can occur at the site.

### 13. How do we measure flow?

Flow will be based on visual observations, not a quantitative measurement. Being familiar with the stream conditions will assist partners with accurate with observations. Flow type will be either base flow, freshet, or hydro. Flow level will be low, moderate, or high. A freshet event can be associated with low, moderate, or high flows. For more information, you can find this [flow observation guidance document](#) and sample photos on the LPP website under the educational materials section. We will also provide guidance at the Annual Partner Training.



#### 14. By high flow/freshet, do we mean samples collected during a rain event or a spring snowmelt and runoff event?

Either situation can be considered high flow. High flow samples could be rain induced or caused by snowmelt related runoff, so high flow event samples can be collected during either condition. Either situation can result in low, moderate, or high flow levels. Because the sampling season begins in mid-April, snowmelt related runoff has usually already occurred. Snowmelt related high flows can also be difficult to predict and time. Most partners find it simplest to collect high flow samples during a rain event. When determining if a storm is big enough to induce a high flow, generally look for at least 0.5-1 inch of rain falling in a 24-hour period prior to sampling. Safety is the main priority to consider when sampling during a high flow event. If safety is ensured, we will leave it up to your organization to determine the best protocols for sampling during a high flow event. Ideally, high flow samples would be collected at peak flow toward the end of the storm while the rainfall is still entering the streams.

#### 15. Can a sample collected on a regular sample day count as a high flow?

Yes, but the high flow sample does not take the place of the regular sample. If a high flow event happens to fall on a regular sampling day, then you will need to take the regular sample once flow returns to base flow. This will allow partners to keep to the sampling schedule and maintain 8 total regular sampling events.

#### 16. What if my organization is unable to sample 2 high flow events?

We ask that partners aim for two high flow event samples per site, but we recognize that this might not be possible during the sampling season, especially if it is an abnormally dry year or difficult logistically.

## Sample Storage and Pick-Up

#### 17. Where will samples be picked up?

LPP staff will coordinate with partners to establish regional sample pickup locations each year. If partners located close to one another collaborate to streamline the sample pickup route, that will make sample pickup more efficient for LPP staff.

#### 18. Are there specific sample preservation and storage procedures?

TN needs to be acidified within 24 hours and then refrigerated or kept on ice, but TP and CI do not. Samples can be held for up to 2 weeks at a nearby location until LPP staff can pick them up. All samples should be kept in a safe place where they are unlikely to leak, break, spill, or be contaminated. Make sure the samples are labeled clearly, away from food or drink, and stored upright in an area where they are unlikely to be tampered with by anyone inadvertently. This is particularly important for acidified total nitrogen samples which are hazardous. Provided that samples are stored properly, their hold times are 28 days. High flow samples can be stored and submitted with regularly scheduled samples. DEC staff will pick up samples every two weeks from April 26<sup>th</sup> to August 4<sup>th</sup>.



## Data Access and Management

### 19. How can I access LPP water quality data?

There are two ways to view data. To access both current and historical LPP data through the Watershed Management Division's database, [IWIS](#) (Vermont Integrated Watershed Information System), partners can download a chosen file type (including word, excel, CSV, or PDF) of all monitoring data through the [Water Chemistry Data Report](#) linked under the [LPP Data and Reports](#) section of the LPP website. Individual LPP sites can also be searched in IWIS using the 6-digit Location ID to view all data for each site. To view and download figures that plot water chemistry concentrations over time, land use for sites, and box plots based on flow type, go to the LPP website to view the Microsoft [Power BI data figures](#). You can also access a [list of monitoring sites](#) and their associated information organized by partner on the LPP website.

### 20. When will my organization's water quality data be available after the sampling season ends?

With LPP staff handling sampling plans, bottle orders, sample log-in, and data review, we can standardize and streamline water quality data management. We plan to have data available by early winter and Microsoft Power BI data figures available by late winter following the sampling season.

### 21. What will the data quality assurance process be?

Data quality assurance involves a three-stage review process. The first stage involves data authorization and verification by VAEL. Next, the data will be reviewed by the State of Vermont IT and LPP staff. A final review is done by the LPP coordinators as the data is entered into IWIS. Once the data has been entered into IWIS, it is considered fully approved and can be shared publicly.