FlowStation App User Manual

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Getting Started

The FlowStation App enables you to remotely configure and manage your FlowStation from a desktop, tablet, or mobile device.

In the FlowStation App, you can easily perform the following tasks:

- Design flows for water sources, control points, and mainlines
- Define operational delays for system stabilization based on time or pressure
- Assign zones to mainlines for optimized flow resolution

Here are the basic steps for getting started with the FlowStation App.

1. Activate your AppManager account. Refer to "Activating Your AppManager Account " below.
2. Sign into AppManager and then launch the FlowStation App. Refer to "Signing Into AppManager and Launching the FlowStation App" on the next page..
3. Go into AdminManager and add your FlowStation. Refer to "Adding a FlowStation to AppManager" on page 5.
4. Configure your FlowStation in the FlowStation App. Refer to "Working with FlowStation Settings" on page 11.

Activating Your AppManager Account

When you are ready to activate your AppManager account, call Baseline Support at 866-294-5847. Be prepared to provide the following information:

- Company name
- Site name
- The full name of the person who is to be the company administrator
- The email address of the person who is to be the company administrator

Baseline Support will assign the company admin username and password.

Signing Into AppManager and Launching the FlowStation App

Because FlowStation App is an app within AppManager, you need to sign into AppManager in your web browser, and then launch FlowStation App from the menu of available apps.

1. Open your web browser. Make sure you are using the most current version of Google Chrome, Mozilla Firefox, or Safari.

   IMPORTANT! AppManager and FlowStation App are not compatible with Microsoft Internet Explorer or Microsoft Edge.

2. In the URL field of the web browser, type the following web URL:

   https://baselineapps.net/

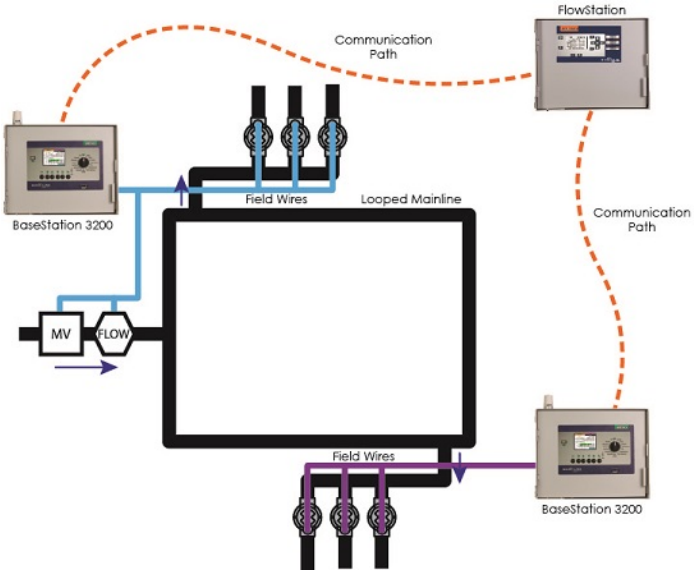
3. In the **Sign In** box, type your username and password in the appropriate fields.
4. Click the **Sign In** button. The AppManager interface displays.
5. Click the FlowStation App icon in the menu on the left. The FlowStation App homepage displays.

Signing Out of AppManager

1. Click the **Menu** icon in the upper-left corner.
2. Click **Sign Out**.

Understanding Shared Flow Design and Operation

A shared flow group consists of several BaseStation 3200 irrigation controllers, a FlowStation, the water sources, the control points, and the mainlines that have been turned over to the FlowStation. The FlowStation is the monitor for the entire group of controllers. It monitors the available water and allocates the water to the controllers based on priorities and concurrent zone settings. A shared flow group is illustrated below.



After all components in the shared flow group are communicating and configured, the BaseStation 3200 asks the FlowStation for water to run the zones in a program. The FlowStation allocates the water, and the programs start based on their priorities.

The controller sends status and flow information to the FlowStation once per minute. You can view status reports on the FlowStation or in PipeView.

Understanding the Hydraulic System Components

The FlowStation App is an application in the AppManager framework that enables users to remotely configure and manage a FlowStation from a desktop, tablet, or mobile device.

The FlowStation App makes it easy to work with shared hydraulic components across an entire site.

Before you begin working in the FlowStation App, make sure you understand the components and their requirements:

Water Source (WS)

- A water source identifies where water is coming from.
- The FlowStation enables you to designate how a water source is managed:
  - A "local" water source is managed by the BaseStation 3200 irrigation controller.
  - A "shared" water source is managed by the FlowStation.
- Each BaseStation 3200 irrigation controller supports up to 8 water sources.
- Each water source can be connected to a single control point.

Control Point (CP)

- A control point is a hydraulic component in Baseline controllers that collects data from assigned devices, and then enables the irrigation system to act on that data.
- The FlowStation enables you to designate how a control point is managed:
  - A "local" control point is managed by the BaseStation 3200 irrigation controller.
  - A "shared" control point is managed by the FlowStation.
- Each BaseStation 3200 irrigation controller supports up to 8 control points.
- Each control point can have a:
  - Flow sensor/meter with an appropriate k-value to read and record both the flow usage and rate.
  - Pump that can be used to control the flow of water through the control point.
  - Master valve (either normally open or normally closed) that can be used to control the flow of water through the control point.

    - Pressure sensor with appropriate 4-20 mA range to the read and record the pressure at the control point.
- A control point can be connected to a water source. On the FlowStation or in the FlowStation App, you can also create a “mainline in” and a “mainline out” connection for a single control point.

Mainline (ML)

- The mainline is the section of pressurized pipe from the control point to the valve that operates water flow to a zone.
- The FlowStation enables you to designate how a mainline is managed:
    - A “local” mainline is managed by the BaseStation 3200 irrigation controller.
    - A “shared” mainline is managed by the FlowStation.
- Each BaseStation 3200 supports up to 8 mainlines.
- On the FlowStation or in the FlowStation App, you can create a “mainline to mainline” connection, which enables you to represent a small mainline branching off a larger mainline.

Adding a FlowStation to AppManager

1. Install the FlowStation communication module according to the instructions that came with the equipment.
2. Make sure the FlowStation is powered up and the communication module is connected.
3. Enable the AppManager connection in the FlowStation and connect the FlowStation. Write down the authorization PIN that displays on the FlowStation. Pay close attention to the case of the letters. Refer to the related topics in the FlowStation User Manual.
4. Activate your AppManager account. Refer to "Activating Your AppManager Account " on page 1.

5. Sign into AppManager. Refer to "Signing Into AppManager and Launching the FlowStation App" on page 2.
6. Click the AdminManager icon in the menu on the left.
7. Click the **Manage FlowStations** option. The Manage FlowStations page displays.
8. Click **Add FlowStation**. The FlowStation Information pane displays.
9. Click the **FlowStation General Information** header row to expand the section if necessary.
10. In the **Description** field, type a description to identify the FlowStation.

    Note: Limit the number of characters in the Description to 42 characters. If you enter a longer description, the FlowStation will automatically shorten it, and then pass the new version back to AppManager.
11. In the **Activation PIN** field, type the PIN that you got from the FlowStation. Make sure to match the case of the letters exactly.
12. Click in the **Site** field. From the list that displays, select the site where the FlowStation is located.
13. Complete the optional **Geographical Settings** as needed.
14. Click **Add**. The Manage FlowStations page shows the newly added FlowStation in the list.

Viewing FlowStation Information

On the main FlowStation App page, click the row for the FlowStation that you want to view information for. The FlowStation Information Summary displays in a slide-out pane. Click the header rows to expand or collapse the sections. Scroll down the slide-out pane to see all of the summary information.

Perform any of the following tasks to view additional information:

View Irrigation Controllers Managed by the FlowStation

1. On the Information Summary slide-out pane, click the **FlowStation General Information** header row to expand the section if necessary.
2. Click **View Managed Controllers**. The list of BaseStation 3200 irrigation controllers that are connected to the FlowStation displays in the pane.
3. Click the header row for a controller to display the status details for the water sources, control points, and mainlines.
4. When you have finished viewing the details, perform one of the following options:
   - Go back to the previous slide-out pane by clicking **< Back**.
   - Close the slide-out pane by clicking **X**.

View Water Source Information

1. On the Information Summary slide-out pane, click the **Water Sources Assigned to Control Points** header row to expand the section if necessary.
2. Click the row for the water source that you want to view information for. The Water Source slide-out pane displays.
3. Click the header rows to expand the sections as necessary.
4. When you have finished viewing the details, perform one of the following options:
   - Go back to the previous slide-out pane by clicking **< Back**.
   - Close the slide-out pane by clicking **X**.

View Control Point Information

1. On the Information Summary slide-out pane, click the header row to expand one of the sections where control points are shown.
2. Click the row for the control point that you want to view information for. The Control Point slide-out pane displays.
3. Click the header rows to expand the sections as necessary.

4. When you have finished viewing the details, perform one of the following options:
    - Go back to the previous slide-out pane by clicking **< Back**.
    - Close the slide-out pane by clicking **X**.

View Mainline Information

1. On the Information Summary slide-out pane, click the header row to expand one of the sections where mainlines are shown.
2. Click the row for the mainline that you want to view information for. The Mainline slide-out pane displays.
3. Click the header rows to expand the sections as necessary.
4. When you have finished viewing the details, perform one of the following options:
    - Go back to the previous slide-out pane by clicking **< Back**.
    - Close the slide-out pane by clicking **X**.

Adding a FlowStation Marker to the BaseManager Map

BaseManager is Baseline's powerful cloud-based central control and remote access application that is part of the AppManager framework. The maps in BaseManager provide flexible tools for managing your sites. If you have a BaseManager account, you can add a FlowStation marker on a site-level map.

1. Make sure the FlowStation has been added to AppManager and the FlowStation is also connected to at least one BaseStation 3200 irrigation controller.
2. Sign into AppManager, and then click the BaseManager icon .
3. From the BaseManager menu, select the Company, Site, and Controller that the FlowStation is associated with.
4. Click the **Maps** tab, and then click **Current Site**. The site-level map displays.
5. Click **Edit** in the lower-right corner. The Edit menu displays.

6. Zoom in or zoom out on the map to see the amount of detail that you need.
7. Click **Markers**, and from the list of available markers, click **FlowStations**. The associated FlowStations display in the menu. A + (plus mark) displays in the row of a FlowStation that has not been added to the map.
8. Click on the + for the FlowStation that you want to add to the map.
9. Position the mouse pointer in the location where you want the marker to display, and then click the right mouse button. The FlowStation marker displays on the map.
10. Click **Save** in the lower-right corner.

    Note: For more information, refer to the Maps topics in the BaseManager Help.

Working with FlowStation Settings

In the FlowStation App, you have the ability to view and edit the settings for the hydraulic components in your system.

Examples of some of the tasks you can perform:

- Add or update descriptions of the FlowStation and the hydraulic components
- Enable or disable a component
- Set or change limits and/or values for devices
- Enable or disable variances

Any changes that you make in the FlowStation App are automatically copied to the associated BaseStation 3200 irrigation controller(s), to BaseManager (if subscribed), and to the FlowStation.

Updating the FlowStation Description

1. On the main FlowStation App page, click the row for the FlowStation that you want to update the description for. The FlowStation Information Summary displays in a slide-out pane.
2. Click **Edit** in the lower-right corner.
3. Click the **FlowStation General Information** header row to expand the section if necessary.
4. In the **Description** field, type a description to identify the FlowStation.

   Note: Limit the number of characters in the Description to 42 characters. If you enter a longer description, the FlowStation will automatically shorten it, and then pass the new version back to AppManager.
5. Click **Save**.

Working with Water Source Settings

In FlowStation App, you can add or update the following water source settings:

Note: Any changes that you make in FlowStation App are automatically copied to the associated BaseStation 3200 irrigation controller(s), to BaseManager (if subscribed), and to the FlowStation.

- The description of the water source
- Whether the water source is enabled or disabled
- The water source priority level
- The monthly water budget
- Whether the water source will shut down if it meets or exceeds the water budget
- Empty conditions for the water source

Refer to the topics within this section for specific instructions.

Updating a Water Source Description

1. On the main FlowStation App page, click the FlowStation where the water source that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the water source that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the water source that you want to work with. The Water Source information pane displays.
4. Click **Edit** in the lower-right corner. The water source details are available for editing.
5. If necessary, click the **Water Source General Information** header to expand the section.
6. In the **Description** field, type a description that identifies the water source.

Note: Limit the number of characters in the Description to 42 characters. If you enter a longer description, the controller will automatically shorten it, and then pass the new version back to the FlowStation App.

7. Click **Save** in the lower-right corner.

Enabling/Disabling a Water Source

1. On the main FlowStation App page, click the FlowStation where the water source that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the water source that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the water source that you want to work with. The Water Source information pane displays.
4. Click **Edit** in the lower-right corner. The water source details are available for editing.
5. If necessary, click the **Water Source General Information** header to expand the section.
6. Click in the **Enabled** field to add or remove the check mark. When a check mark displays in the field, the water source is enabled. When the field is empty, the water source is disabled and will not be used.
7. Click **Save** in the lower-right corner.

Setting the Monthly Water Budget

1. On the main FlowStation App page, click the FlowStation where the water source that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the water source that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the water source that you want to work with. The Water Source information pane displays.

4. Click **Edit** in the lower-right corner. The water source details are available for editing.
5. If necessary, click the **Flow Management** header to expand the section.
6. In the **Limit** field, click the up or down arrow to show the number of gallons that can be used from this water source during a month. The value increases in increments of 250 gallons.

   Note: When the value in the Limit field is greater than zero, the system monitors the total water used during a single month. If the monthly water used exceeds this number, an alert is generated. If you enable the Shutdown field, then the water is stopped until the first of the next month.

7. Click in the **Shutdown** field, to add or remove the check mark. This setting indicates whether the water source will shut down when the monthly budget amount has been exceeded. When a check mark displays in the field, the shutdown is enabled. When the field is empty, the shutdown is disabled.
8. Click **Save** in the lower-right corner.

Setting Up Empty Conditions

If one of your water sources is a cistern or reservoir, you can install a moisture sensor, an event switch (float), or a pressure sensor to monitor the water level and stop using that water source when the water drops below a specified level.

1. On the main FlowStation App page, click the FlowStation where the water source that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the water source that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the water source that you want to work with. The Water Source information pane displays.

4. Click **Edit** in the lower-right corner. The water source details become available for editing.
5. If necessary, click the **Empty Conditions** header to expand the section. You can perform any of the following tasks:

   Add an Empty Condition

   1. Click **+** in the Add Empty Condition row. The Empty Condition fields display.
   2. Click in the **Type** field, and then click the device that you want to use to monitor the empty condition.
   3. Click in the **Device** field. Connected devices of the selected type display in a list. Click the device that you want to use to monitor the empty condition.
   4. Click in the **Enabled** field to add or remove the check mark. When a check mark displays in the field, the empty condition is enabled. When the field is empty, the empty condition is disabled and will not be used.
   5. Click the up or down arrow in the **Empty Limit** field to set the value for the condition.
   6. Click the up or down arrow in the **Wait Time** fields to set the minimum duration for the empty condition. After this time has elapsed, the system can run if the condition has been cleared.
   7. Click **Save**.

   Change an Empty Condition

   1. Find the condition that you want to change in the Empty Conditions section.
   2. Change the fields as needed.
   3. Click **Save**.

   Remove an Empty Condition

   1. Find the condition that you want to remove in the Empty Conditions section.
   2. Click the **X** in the **Remove** column for the empty condition.

3. Click **Save**.

Setting the Priority for a Water Source

1. On the main FlowStation App page, click the FlowStation where the water source that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the water source that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the water source that you want to work with. The Water Source information pane displays.
4. Click the **Edit** button in the lower-right corner. The water source details are available for editing.
5. If necessary, click the **Flow Management** header to expand the section.
6. Click the drop-down arrow in the **Priority** field, and then click a number between 1 and 10 where 1 is the highest priority. When an irrigation system has more than one water source with different priorities, water from the source with the highest priority is used first until the monthly budget limit is reached. Then the system switches to the water source with the next highest priority.
7. Click the **Save** button in the lower-right corner.

Working with Control Point Settings

In FlowStation App, you can add or update the following control point settings:

Note: Any changes that you make in FlowStation App are automatically copied to the associated BaseStation 3200 irrigation controller(s), to BaseManager (if subscribed), and to the FlowStation.

- The control point description
- Whether the control point is enabled or disabled

- Enable and define the control point group for that control point which allows the FlowStation to activate the control point with the smallest GPM in that group to supply water for downstream zones based on their requested GPM
- The target flow of the control point
- High and unscheduled flow limits and whether or not to shut down if the flow limit is exceeded
- High and low pressure limits and whether or not to shut down if the pressure limit is exceeded
- Devices assigned to that control point, including:
  - Edit a flow sensor description
  - Enable or disable a flow sensor
  - Define the K-value for the flow sensor
  - Edit a master valve description
  - Enable or disable a master valve
  - Define whether the master valve is normally open

Refer to the topics within this section for specific instructions.

Updating a Control Point Description

1. On the main FlowStation App page, click the FlowStation where the control point that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the control point that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the control point that you want to work with. The Control Point information pane displays.
4. Click **Edit** in the lower-right corner. The control point details are available for editing.
5. If necessary, click the **Control Point General Information** header to expand the section.

6. In the **Description** field, type a description that identifies the control point.

   Note: Limit the number of characters in the Description to 42 characters. If you enter a longer description, the controller will automatically shorten it, and then pass the new version back to the FlowStation App.

7. Click **Save** in the lower-right corner.

Setting Up a Control Point Group

With a FlowStation, you can use the Control Point Group feature. When you put control points into a group, the FlowStation activates the control point with the smallest GPM in that group to supply water for downstream zones based on their requested GPM. You can create up to 10 groups.

1. On the main FlowStation App page, click the FlowStation where the control point that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the control point that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the control point that you want to work with. The Control Point information pane displays.
4. Click **Edit** in the lower-right corner. The control point details are available for editing.
5. If necessary, click the **Control Point General Information** header to expand the section.
6. Click in the **Control Point Group** field, and then select a group number from the list. Remember this number.
7. Click **Save** in the lower-right corner.
8. Close the slide-out pane by clicking **X** in the upper-right corner.
9. In the main FlowStation App pane, click another control point that you want to add to the group.

10. Repeat steps 4 - 5.
11. Click in the **Control Point Group** field, and then select the same group number that you assigned to the previous control point.
12. Click **Save** in the lower-right corner.
13. Repeat steps 8 - 12 as needed to assign additional control points to the group.

Enabling/Disabling a Control Point

1. On the main FlowStation App page, click the FlowStation where the control point that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the control point that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the control point that you want to work with. The Control Point information pane displays.
4. Click **Edit** in the lower-right corner. The control point details are available for editing.
5. If necessary, click the **Control Point General Information** header to expand the section.
6. Click in the **Enabled** field to add or remove the check mark. When a check mark displays in the field, the control point is enabled. When the field is empty, the control point is disabled and will not be used.
7. Click **Save** in the lower-right corner.

Setting Limits for a Control Point

1. On the main FlowStation App page, click the FlowStation where the control point that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the control point that you want to work with is shown. If necessary, click the header rows to expand the sections.

3. Click the control point that you want to work with. The Control Point information pane displays.
4. Click **Edit** in the lower-right corner. The control point details are available for editing.
5. If necessary, click the **Flow Management** header to expand the section.
6. In the **High Flow Limit GPM** field, click the up or down arrow to enter the maximum amount of flow in gallons per minute.
7. If you want zones (valves) assigned to this control point's mainline to be stopped and corresponding master valves (MVs) shut off when the flow rate exceeds the limit, click in the **Shutdown** field to display a check mark. If you do not want excessive flow to shut down the system, click in the **Shutdown** field to remove the check mark.
8. In the **Unscheduled Flow Limit GPM** field, click the up or down arrow to enter the maximum amount of unscheduled flow in gallons per minute.
9. If you want the mainline to be stopped and corresponding MVs to turn off when an unscheduled flow exceeds this limit, click in the **Shutdown** field to display a check mark. If you do not want excessive flow to shut down the system, click in the **Shutdown** field to remove the check mark.
10. In the **High Pressure Limit PSI** field, click the up or down arrow to enter the maximum amount of pressure in PSI.
11. If you want the mainline to be stopped and corresponding MVs to turn off when the pressure exceeds this limit, click in the **Shutdown** field to display a check mark. If you do not want excessive pressure to shut down the system, click in the **Shutdown** field to remove the check mark.
12. In the **Low Pressure Limit PSI** field, click the up or down arrow to enter the minimum amount of pressure in PSI.

13. If you want the mainline to be stopped and corresponding MVs to turn off when the pressure drops below this limit, click in the **Shutdown** field to display a check mark. If you do not want low pressure to shut down the system, click in the **Shutdown** field to remove the check mark.
14. Click **Save** in the lower-right corner.

Setting the Target Flow for a Control Point

1. On the main FlowStation App page, click the FlowStation where the control point that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the control point that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the control point that you want to work with. The Control Point information pane displays.
4. Click **Edit** in the lower-right corner. The control point details are available for editing.
5. If necessary, click the **Flow Management** header to expand the section.
6. Click the up or down arrow in the **Target Flow** field to enter the amount of flow in gallons per minute (GPM) that is allowed through this control point for the irrigation system.
7. Click **Save** in the lower-right corner.

Updating Details for Control Point Devices

You can update the details for the flow meter, master valve, and/or pressure sensor that are assigned to a control point.

1. On the main FlowStation App page, click the FlowStation where the control point that you want to work with is assigned. The slide-out pane displays.

2. Scroll down to the section where the control point that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the control point that you want to work with. The Control Point information pane displays.
4. Click **Edit** in the lower-right corner. The control point details are available for editing.
5. If necessary, click the **Flow Devices** header to expand the section.
6. Find the row for the device that you want to update.
7. In the **Description** field, type a description that identifies the device.

   Note: Limit the number of characters in the Description to 42 characters. If you enter a longer description, the controller will automatically shorten it, and then pass the new version back to PipeView.
8. Click in the **Enabled** field to add or remove the check mark. When a check mark displays in the field, the device is enabled. When the field is empty, the device is disabled and will not be used.
9. Update the specific information for any of the following devices:

   Flow Meter

   K Value: Click the up or down arrows in the field to enter the calibration factor for the flow device that this flow biCoder is connected to.

   Master Valve

   Normally Open: Click in the field to add or remove the check mark. When a check mark displays in the field, the master valve is normally open. When the field is empty, the master valve is normally closed.

   Pressure Sensor

   Min Limit: Click the up or down arrows in the field to enter the minimum pressure reading for the connected pressure sensor.

Max Limit: Click the up or down arrows in the field to enter the maximum pressure reading for the connected pressure sensor.

10. Click **Save** in the lower-right corner.

Working with Mainline Settings

In FlowStation App, you can add or update the following mainline settings:

Note: Any changes that you make in FlowStation App are automatically copied to the associated BaseStation 3200 irrigation controller(s), to BaseManager (if subscribed), and to the FlowStation.

- The mainline description
- Whether the mainline is enabled or disabled
- The design flow value for that mainline
- Either time or pressure as the type of flow stabilization management for that mainline
- The flow stabilization value as either a unit of time or a measure of psi
- Whether the mainline is managed by flow
- The flow variance percentage and whether or not to shut down if the flow variance percentage is exceeded
- Either time or pressure as the type of mainline delay option for that mainline
  - The delay before the first zone either by time or psi
  - The delay between zones either by time or psi
  - The delay after the last zone either by time or psi
  - The number of zones to run between delays
- Whether or not to enable or disable advanced flow variance
  - Define the values for each advanced flow variance range
  - Define whether or not to shut down if a flow variance is exceeded

Refer to the topics within this section for specific instructions.

Updating a Mainline Description

1. On the main FlowStation App page, click the FlowStation where the mainline that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the mainline that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the mainline that you want to work with. The Mainline information pane displays.
4. Click **Edit** in the lower-right corner. The mainline details are available for editing.
5. If necessary, click the **Mainline General Information** header to expand the section.
6. In the **Description** field, type a description that identifies the mainline.

   Note: Limit the number of characters in the Description to 42 characters. If you enter a longer description, the controller will automatically shorten it, and then pass the new version back to the FlowStation App.
7. Click **Save** in the lower-right corner.

Enabling/Disabling a Mainline

1. On the main FlowStation App page, click the FlowStation where the mainline that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the mainline that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the mainline that you want to work with. The Mainline information pane displays.
4. Click **Edit** in the lower-right corner. The mainline details are available for editing.

5. If necessary, click the **Mainline General Information** header to expand the section.
6. Click in the **Enabled** field to add or remove the check mark. When a check mark displays in the field, the mainline is enabled. When the field is empty, the mainline is disabled and will not be used.
7. Click **Save** in the lower-right corner.

Setting Up Advanced Flow Variance for a Mainline

Advanced flow variance enables you to set above and below variance percentages for GPM ranges. Depending on your settings, the controller monitors the flow within the range and shuts down the mainline if the measured variance is above/below the set percentage limit.

1. On the main FlowStation App page, click the FlowStation where the mainline that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the mainline that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the mainline that you want to work with. The Mainline information pane displays.
4. Click **Edit** in the lower-right corner. The mainline details are available for editing.
5. If necessary, click the **Advanced Flow Variance** header to expand the section.
6. Click in the **Enable Advanced Flow Variance** field to add or remove the check mark. When a check mark displays in the field, advanced flow variance is enabled. When the field is empty, advanced flow variance is disabled and will not be used.
7. In the **Variance Ranges**, click the up or down arrow to set the percentages for the allowable low flow and high flow variances.
8. If you want zones (valves) assigned to this mainline to be stopped and corresponding master valves (MVs) shut off when the flow rate

exceeds the limit, click in the **Shutdown** fields to display a check mark. If you do not want high or low flow to shut down the system, click in the **Shutdown** field to remove the check mark.

9. Click **Save** in the lower-right corner.

Setting Up Mainline Delays

You can set up delays based on time or pressure before, between, and after zones.

1. On the main FlowStation App page, click the FlowStation where the mainline that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the mainline that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the mainline that you want to work with. The Mainline information pane displays.
4. Click **Edit** in the lower-right corner. The mainline details are available for editing.
5. If necessary, click the **Mainline and Zone Delays** header to expand the section.
6. In the **Type of Delay** field, click Timed or Pressure to indicate how you want the delays to be monitored.
7. In the **Delay** fields, set the number of minutes to wait or the amount of pressure to achieve before the zone will run.
8. In the **Number of Zones** field, click the up or down arrow to set the maximum number of zones to be turned on at a time when the delay is active.
9. Click **Save** in the lower-right corner.

Setting a Design Flow for a Mainline

1. On the main FlowStation App page, click the FlowStation where the mainline that you want to work with is assigned. The slide-out pane

displays.

2. Scroll down to the section where the mainline that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the mainline that you want to work with. The Mainline information pane displays.
4. Click **Edit** in the lower-right corner. The mainline details are available for editing.
5. If necessary, click the **Flow Management** header to expand the section.
6. In the **Design Flow** field, click the up or down arrow to set the design flow value in gallons per minute (GPM).
7. Click **Save** in the lower-right corner.

Setting Up Flow Stabilization for a Mainline

In order to operate flow stabilization based on pressure, a pressure sensor must be assigned to the control point that this mainline is connected to.

1. On the main FlowStation App page, click the FlowStation where the mainline that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the mainline that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the mainline that you want to work with. The Mainline information pane displays.
4. Click **Edit** in the lower-right corner. The mainline details are available for editing.
5. If necessary, click the **Flow Management** header to expand the section.
6. In the **Type of Flow Stabilization** field, click Timed or Pressure to indicate how the flow stabilization will be monitored.

7. In the **Flow Stabilization Value** field, click the up or down arrow, to set the value to the number of minutes or amount of pressure that it takes to fill the pipe and achieve a steady flow rate after a valve change
8. Click **Save** in the lower-right corner.

Setting Up Flow Variance for a Mainline

Flow variance is the actual flow compared to the expected flow. Both above and below expected flow conditions can be detected and then acted upon.

1. On the main FlowStation App page, click the FlowStation where the mainline that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the mainline that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the mainline that you want to work with. The Mainline information pane displays.
4. Click **Edit** in the lower-right corner. The mainline details are available for editing.
5. If necessary, click the **Flow Management** header to expand the section.
6. In the **Limit** field of the **Flow Variance** row, click the up or down arrow to set the percentage for the allowable variance.
7. If you want zones (valves) assigned to this mainline to be stopped and corresponding master valves (MVs) shut off when the flow rate exceeds the limit, click in the **Shutdown** field to display a check mark. If you do not want excessive flow to shut down the system, click in the **Shutdown** field to remove the check mark.
8. Click **Save** in the lower-right corner.

Setting the Mainline to be Managed by Flow

When you set up the design flow for the mainline and then enable this option, the controller will use the design flow of the individual zones (or learned flow) and will turn on zones that are waiting to water until their design flow is equal to or less than the available flow on the mainline.

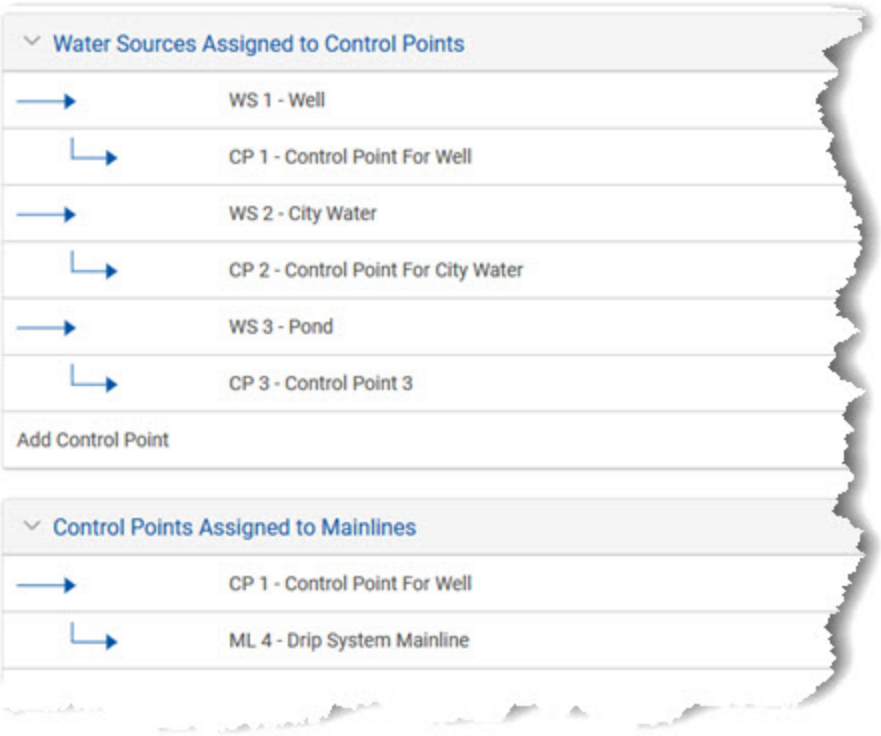
1. On the main FlowStation App page, click the FlowStation where the mainline that you want to work with is assigned. The slide-out pane displays.
2. Scroll down to the section where the mainline that you want to work with is shown. If necessary, click the header rows to expand the sections.
3. Click the mainline that you want to work with. The Mainline information pane displays.
4. Click **Edit** in the lower-right corner. The mainline details are available for editing.
5. If necessary, click the **Flow Management** header to expand the section.
6. Click in the **Manage by Flow** field to add or remove the check mark. When a check mark displays in the field, the mainline is managed by flow. When the field is empty, the mainline is not managed by flow.
7. Click **Save** in the lower-right corner.

Overview of the Hydraulic Layout

The FlowStation enables up to 20 BaseStation 3200 irrigation controllers to share water resources including water sources, control points, and mainlines. The FlowStation can manage 20 water sources (WS), 20 control points (CP), and 40 mainlines (ML).

When BaseStation 3200 irrigation controllers are connected to a FlowStation and the required water sources, control points, and mainlines from all controllers are set up as shared resources, the FlowStation sees the resources as a whole and users can connect any hydraulic component to another. For this reason, it's useful to refer to an as built drawing or a map of your hydraulic system when you are setting up the layout in the FlowStation App.

If you have assigned any hydraulic system connections in the BaseStation 3200 or in the FlowStation, those connections display in the slide-out pane on the FlowStation App as shown in the illustration below.



If you have not assigned any hydraulic system connections, the sections are empty, and you can use the Add option within each section to start creating the connections. Refer to the Hydraulic Layout topics for more information.

You can also look at the hydraulic system diagram in PipeView™ to visualize the structure of the connections. Refer to "Viewing the Hydraulic Layout in PipeView" on page 36.

Connecting a Water Source to a Control Point

In FlowStation App, you can connect hydraulic components together to build a representation of your hydraulic layout. A FlowStation supports up to 20 water sources (WS). A control point (CP) is a hydraulic component in Baseline controllers that collects data from assigned devices, and then enables the irrigation system to act on that data. You must connect at least one control point to each water source, but you can connect as many as 8 control points to a water source. For more information, refer to "Understanding the Hydraulic System Components" on page 3.

Any connections that you make in FlowStation App are automatically copied to the associated BaseStation 3200 irrigation controller(s), to BaseManager (if subscribed), and to the FlowStation.

1. On the main FlowStation App page, click the FlowStation where the water source that you want to work with is assigned. The slide-out pane displays.
2. Click the **Water Sources Assigned to Control Points** heading to expand the section if necessary. Any existing connections display under the Water Sources Assigned to Control Points heading.
3. Click **Add Control Point**. The Add Control Point fields display.
4. Click in the **Water Source** field. From the list that displays, select the water source that you want to work with.
5. Click in the **Control Point** field. From the list that displays, select the control point that you want to connect to the water source.

6. Click **Save**. The new connection displays under the Water Sources Assigned to Control Points heading.

Connecting a Control Point to a Mainline

A control point (CP) is a hydraulic component in Baseline controllers that collects data from assigned devices, and then enables the irrigation system to act on that data. A control point must be assigned to a water source. It can also have a “mainline in” and a “mainline out” connection. For more information, refer to "Understanding the Hydraulic System Components" on page 3.

In the FlowStation App, the Control Point to Mainline assignment represents the “mainline out” connection.

A mainline can have up to 20 control points assigned to it, but a control point can only be assigned to one mainline.

Any connections that you make in FlowStation App are automatically copied to the associated BaseStation 3200 irrigation controller(s), to BaseManager (if subscribed), and to the FlowStation.

1. On the main FlowStation App page, click the FlowStation where the control point that you want to work with is assigned. The slide-out pane displays.
2. Click the **Control Points Assigned to Mainlines** heading to expand the section if necessary. Any existing connections display under the Control Points Assigned to Mainlines heading.
3. Click **Add Mainline**. The Add Mainline fields display.
4. Click in the **Control Point** field. From the list that displays, select the control point that you want to work with.
5. Click in the **Mainline** field. From the list that displays, select the mainline that you want to connect to the control point.
6. Click **Save**. The new connection displays under the Control Points Assigned to Mainlines heading.

Connecting a Mainline to a Mainline

In FlowStation App, you can connect hydraulic components together to build a representation of your hydraulic layout. If your hydraulic system has a small mainline branching off a larger mainline, you can set up the hydraulic layout in the FlowStation to represent your actual system by connecting a mainline to a mainline.

A FlowStation supports up to 40 mainlines (ML). For more information, refer to "Understanding the Hydraulic System Components" on page 3.

Any connections that you make in FlowStation App are automatically copied to the associated BaseStation 3200 irrigation controller(s), to BaseManager (if subscribed), and to the FlowStation.

1. On the main FlowStation App page, click the FlowStation where the mainlines that you want to work with is assigned. The slide-out pane displays.
2. Click the **Advanced Mainline to Mainline Assignments** heading to expand the section if necessary. Any existing connections display under the Advanced Mainline to Mainline Assignments heading.
3. Click **Add Mainline**. The Add Mainline fields display.
4. Click in the **Upstream Mainline** field. From the list that displays, select the mainline that you want to designate as the upstream mainline.
5. Click in the **Downstream Mainline** field. From the list that displays, select the mainline that you want to connect to the upstream mainline.
6. Click **Save**. The new connection displays under the Advanced Mainline to Mainline Assignments heading.

Connecting a Mainline to a Control Point

In FlowStation App, you can connect hydraulic components together to build a representation of your hydraulic layout. A control point (CP) is a hydraulic component in Baseline controllers that collects data from assigned devices, and then enables the irrigation system to act on that data. A control point can be assigned to a mainline. It can also have a

“mainline in” and a “mainline out” connection. For more information, refer to "Understanding the Hydraulic System Components" on page 3.

A mainline can have up to 20 control points assigned to it, but a control point can only be assigned to one mainline.

In the FlowStation App, the Mainline to Control Point assignment represents the “mainline in” connection.

Any connections that you make in FlowStation App are automatically copied to the associated BaseStation 3200 irrigation controller(s), to BaseManager (if subscribed), and to the FlowStation.

1. On the main FlowStation App page, click the FlowStation where the mainline that you want to work with is assigned. The slide-out pane displays.
2. Click the **Advanced Mainline to Control Point Assignments** heading to expand the section if necessary. Any existing connections display under the Advanced Mainline to Control Point Assignments heading.
3. Click **Add Control Point**. The Add Control Point fields display.
4. Click in the **Upstream Mainline** field. From the list that displays, select the mainline that you want to designate as the upstream mainline.
5. Click in the **Downstream Control Point** field. From the list that displays, select the control point that you want to connect to the upstream mainline.
6. Click **Save**. The new connection displays under the Advanced Mainline to Control Point Assignments heading.

Removing an Existing Connection from the Hydraulic Layout

In FlowStation App, you can connect hydraulic components together to build a representation of your hydraulic layout. If you find an existing connection that you no longer need, you can remove it. If you find a connection that you need to change, you must remove it, and then add the correct component.

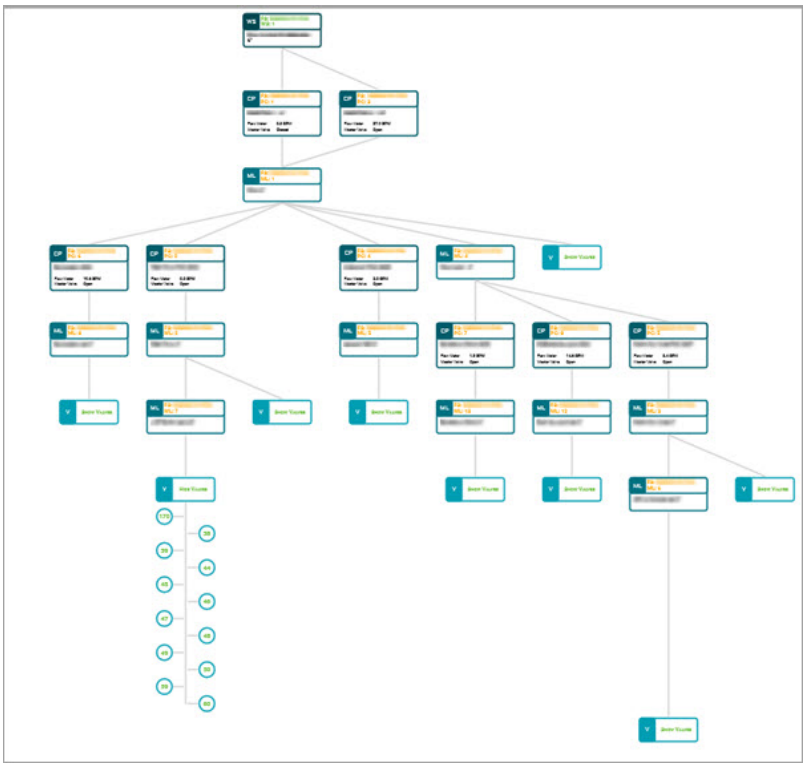
Any connection changes that you make in FlowStation App are automatically copied to the associated BaseStation 3200 irrigation controller(s), to BaseManager (if subscribed), and to the FlowStation.

1. On the main FlowStation App page, click the FlowStation where the hydraulic connections that you want to work with are assigned. The slide-out pane displays.
2. Click any of the headings to expand the sections if necessary. Any existing connections display under the headings.
3. Click **Edit** in the lower-right corner. The Remove option displays in the connection rows.
4. Find the row for the connection that you want to remove, and then click the **X**. A message confirms that the connection was removed.
5. Click **Save**. A message confirms that the changes were saved.

Viewing the Hydraulic Layout in PipeView

PipeView™ is an application in the AppManager™ framework that enables users to visualize the hydraulic structure that is configured on their BaseStation 3200™ irrigation controllers and in the FlowStation™.

After you configure your devices and set up your hydraulic system model on your BaseStation 3200 irrigation controller(s), on the FlowStation, or in the FlowStation App, PipeView automatically displays all hydraulic system components in a tree-type diagram as illustrated below.



In PipeView, users can see how water is moving through the hydraulic system and see color-coded statuses for all system components. Users can also view usage graphs for control points and make changes to hydraulic component details. Any changes that you make in PipeView are automatically copied to the associated BaseStation 3200 irrigation controller(s), to BaseManager (if subscribed), to the FlowStation, and to the FlowStation App.

To launch PipeView, click the PipeView icon on the app navigation pane in AppManager. For more information, refer to the PipeView Help.

Related Information

"Understanding the Hydraulic System Components" on page 3