



# PipeView User Manual

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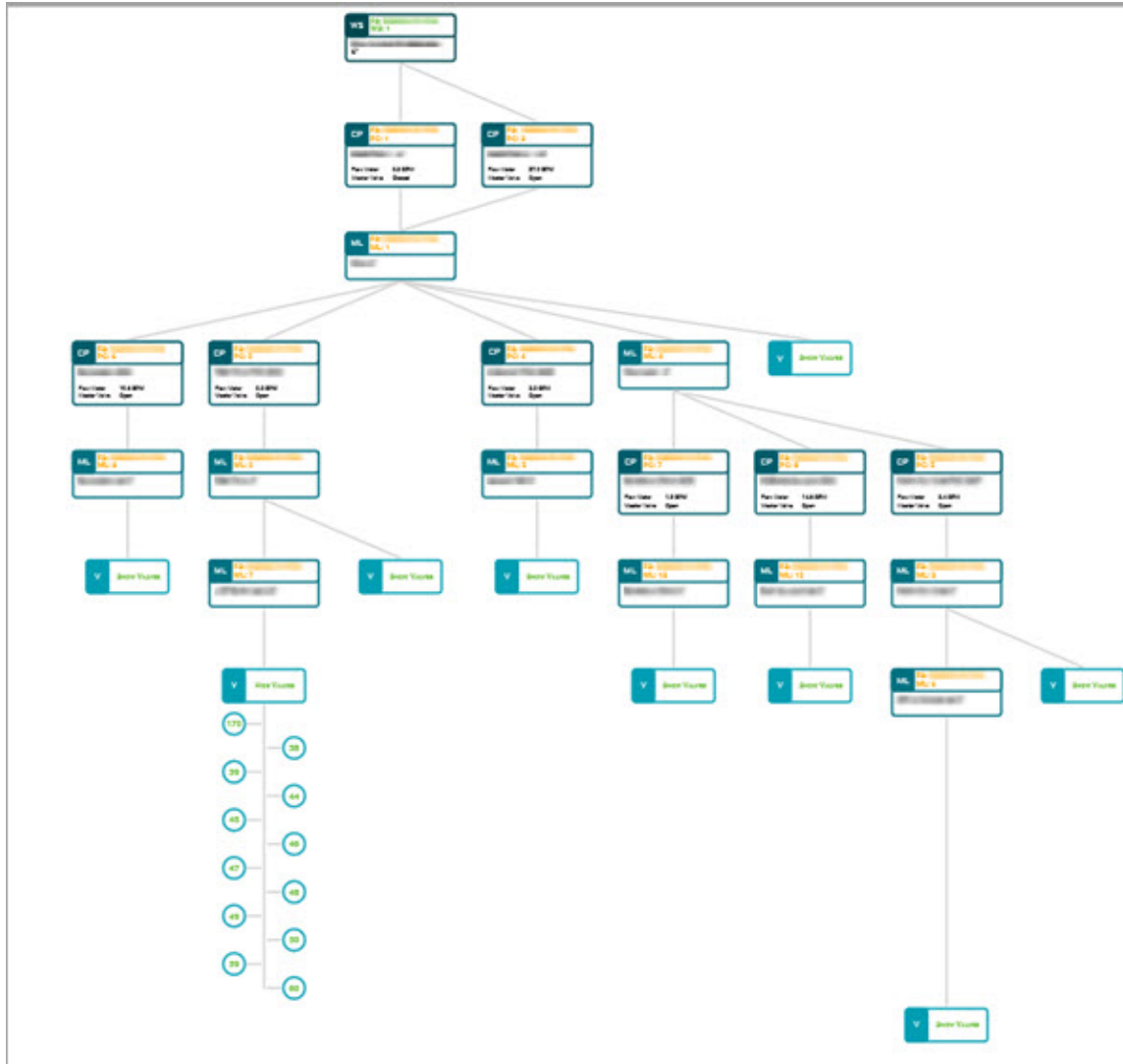
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## Getting Started

### Introducing 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 BaseManager.

After you configure your devices and set up your hydraulic system model on your BaseStation 3200 irrigation controller(s), PipeView automatically displays all hydraulic system components from those irrigation controllers in a tree-type diagram.



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), and to the FlowStation (if applicable).

### Related Topics

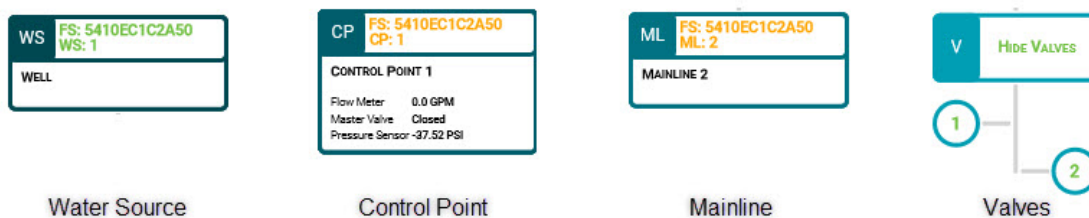
"Understanding the Hydraulic System Components" on the facing page

"Using PipeView" on page 9

## Understanding the Hydraulic System Components

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 BaseManager.

PipeView displays the following components in the hydraulic system diagram. When a hydraulic component is set up and enabled on a BaseStation 3200 or in BaseManager, a box representing that component displays in PipeView. Lines show the relationships between the components in the hydraulic system diagram.



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

### Water Source

- A water source identifies where water is coming from.
- A BaseStation 3200 supports up to 8 water sources.
- Each water source can be connected to a single control point.
- If you have a FlowStation, you can 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.
- The water source box in the hydraulic system diagram shows the assigned controller's MAC address and the sequential identifier at the top. The description displays in the lower section.



## Control Point

- 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.
- A BaseStation 3200 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, you can also create a "mainline in" and a "mainline out" connection for a single control point.
- If you have a FlowStation, you can 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.
- The control point box in the hydraulic system diagram shows the assigned controller's MAC address and the sequential identifier at the top. The description and any assigned devices display in the lower section.

## Mainline

- The mainline is the section of pressurized pipe from the control point to the valve that operates water flow to a zone.
- A BaseStation 3200 supports up to 8 mainlines.

- On the FlowStation, you can create a “mainline to mainline” connection, which enables you to represent a small mainline branching off a larger mainline.
- If you have a FlowStation, you can 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.
- The mainline box in the hydraulic system diagram shows the assigned controller's MAC address and the sequential identifier at the top. The description displays in the lower section.

### **Valve (Zone)**

- A valve (zone) is a device that opens to allow water to flow to the sprinkler heads or emitters in a designated area of landscaping. It closes to halt watering for that area.
- The BaseStation 3200 supports 200 standard zones.
- A valve (zone) is assigned to a mainline.

### **Signing In to and Out of AppManager**

PipeView is an application in the AppManager framework. To access PipeView, you must first sign into AppManager.

#### **Signing In to AppManager**

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



**IMPORTANT!** AppManager is 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 home page displays and the apps that you have subscriptions to are enabled for use.

## Signing Out of AppManager

1. Click the Home icon  on the left menu bar.
2. Click the Menu icon  in the upper-left corner of the page.
3. Click **Sign Out**.

## Using PipeView

PipeView is an application in the AppManager framework. In order to use PipeView, you must have access to AppManager and BaseStation 3200 irrigation controller(s) associated with a BaseManager account.

To access PipeView, first sign into AppManager, and then click the PipeView icon  in the menu on the left side of the screen. If you have configured your devices and set up your hydraulic system model on your BaseStation 3200 irrigation controller(s), PipeView automatically displays all hydraulic system components from those irrigation controllers in a tree-type diagram in the right pane.

You can perform the following actions in the diagram in the right pane.

**IMPORTANT!** The only functionality available from the touchpad on a laptop is point and tap.

## Zoom In/Zoom Out

- Mobile Device - Use pinch or spread gestures to zoom in or out in the diagram.
- Laptop or Desktop Computer - Position the mouse pointer in the diagram, and then rotate the scroll wheel forwards or backwards.

## **Reposition the Diagram**

- Mobile Device - Swipe the diagram to reposition it.
- Laptop or Desktop Computer - Position the mouse pointer in the diagram, and then click the left mouse button and drag.

## **Display the Details Pane**

- Mobile Device - Tap a hydraulic component box.
- Laptop or Desktop Computer - Position the mouse pointer on a hydraulic component box, and then click the left mouse button.

## **Related Topics**

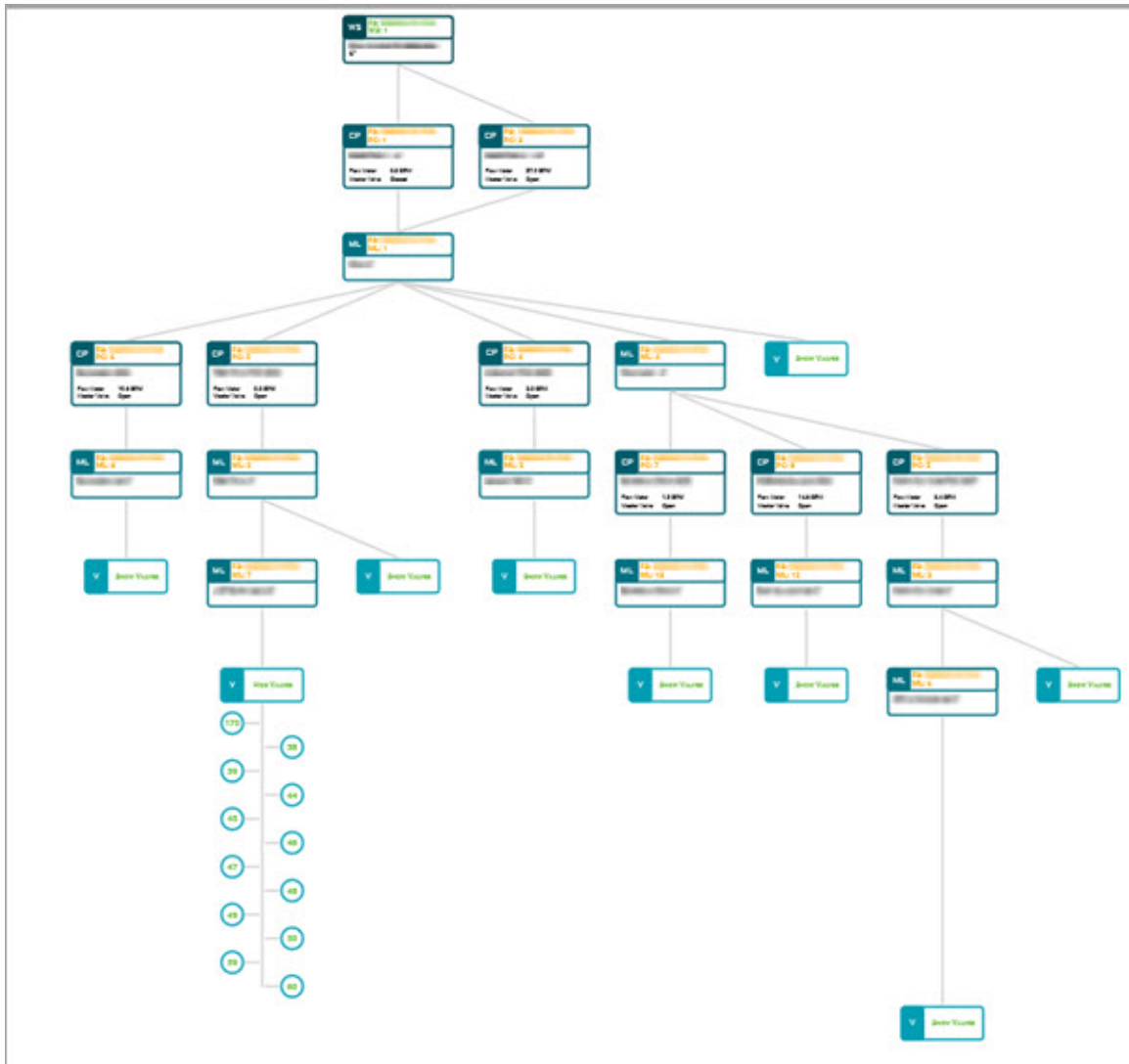
"Signing In to and Out of AppManager" on page 8



# Status, Graphs, and Reports

## Overview of Status, Graphs, & Reports

A major benefit of PipeView is the ability to view the hydraulic structure that is configured on your BaseStation 3200 irrigation controllers and in BaseManager. The hydraulic system diagram displays real-time, color-coded status details for water sources, control points, mainlines, and valves.



In PipeView, users can see how water is moving through the hydraulic system. Users can also view usage graphs for hydraulic components.

### **Related Topics**

"Viewing Graphs & Reports" below

"Viewing Status" on the facing page

"Viewing Messages" on the facing page

### **Viewing Details**

1. In PipeView position the hydraulic system diagram so you can see the components that you are interested in (refer to "Using PipeView" on page 9).
2. Click the hydraulic component. The slide-out pane displays.
3. Click **Details** in the lower-right. The details for the hydraulic component display.
4. Click the header rows to expand or collapse the sections.
5. Drag the scroll bar on the right edge of the slide-out pane to view all of the details.
6. 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**.

### **Viewing Graphs & Reports**

In PipeView, position the hydraulic system diagram so you can see the components that you are interested in (refer to "Using PipeView" on page 9).

Graphs and reports are available for water sources and control points. To display the graph/report, click the water source or control point box. The slide-out pane displays. When you have finished viewing the graphs and reports, click the **X** in the upper-right corner to close the slide-out pane.

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## Water Source Reports

Click the **Current Usage Budget Status Report** header row. The report details display. The Water Source report shows the monthly budget and the water used for the current month.

## Control Point Graphs


Click the **Flow Activity Report** header row. The report details display. You can click in the date range fields to set different dates, and then click **Refresh** to update the graph. The Control Point graph has the following sections:

- **Water Use Graph** - Shows how much water was used by the control point during the specified date range
- **Flow Rates Graph** - Shows the rate of flow through the control point during the specified date range
- **PSI Values Graph** - Shows the PSI of a pressure sensor assigned to the control point during the specified date range

## Viewing Messages

In PipeView, position the hydraulic system diagram so you can see the components that you are interested in (refer to "Using PipeView" on page 9).

You can use either of the following methods to view the messages:

- Click the Message icon  in the PipeView header.
- Click the hydraulic component. The slide-out pane displays. Click the **Messages** header row. The messages display. Click **X** to close the slide-out pane.

**Note:** You can delete messages through either interface.

## Viewing Status


In PipeView position the hydraulic system diagram so you can see the components that you are interested in (refer to "Using PipeView" on page 9).



You can use either of the following methods to view the status of the hydraulic components:

- Check the color of the label at the top of the hydraulic component box.
- Click the hydraulic component. The slide-out pane displays. Scroll down to the **General** section and review the **Status** field. Click **X** to close the slide-out pane.

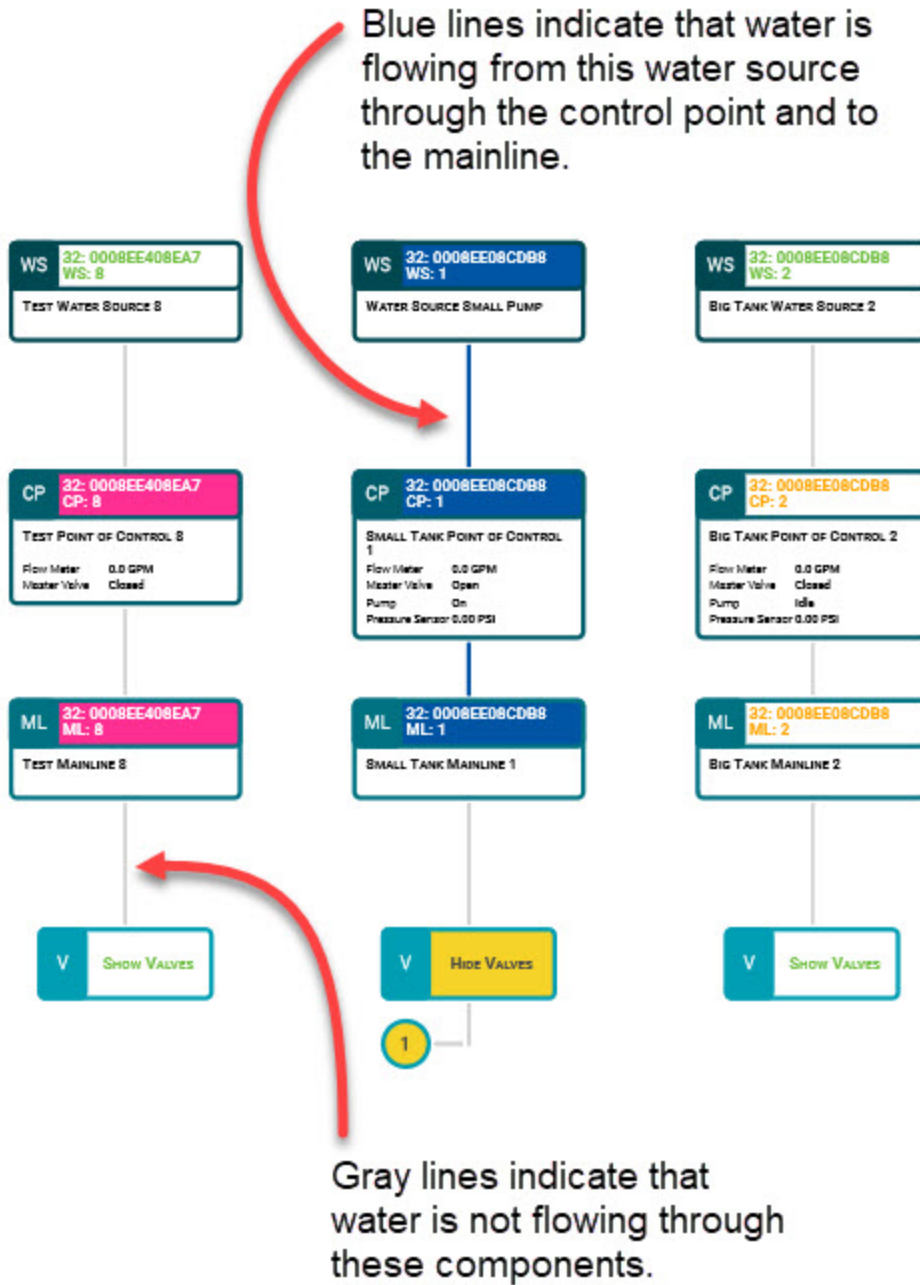
### Displaying the Status Color Key

1. Click the Menu icon  in the upper-left corner. The menu displays.
2. Click the **Status Colors** option. The Status Color key displays in the menu pane.
3. When you have finished using the Status Color key, click the **<** in the header, and then click the **<** in the Menu header.

### Viewing Water Flow

In PipeView position the hydraulic system diagram so you can see the components that you are interested in (refer to "Using PipeView" on page 9).

When water is moving through the hydraulic system, the lines between the boxes are blue. Gray lines indicate that water is not flowing.



The status of the hydraulic components is represented by color. Refer to "Viewing Status" on page 14.



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## Settings

### Control Point Settings

#### Working with Control Point Settings

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

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

- 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. In PipeView position the hydraulic system diagram so you can see the control point that you want to work with (refer to "Using PipeView" on page 9).
2. Click the control point that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right corner. The control point details display.
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 PipeView.

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

## Setting Up a Control Point Group

If you have 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. In PipeView position the hydraulic system diagram so you can see the control point that you want to work with (refer to "Using PipeView" on page 9).
2. Click the control point that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The control point details display.

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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 hydraulic system diagram, click another control point that you want to add to the group.
  10. Repeat steps 2 - 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. In PipeView position the hydraulic system diagram so you can see the control point that you want to work with (refer to "Using PipeView" on page 9).
2. Click the control point that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The control point details display.
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. In PipeView position the hydraulic system diagram so you can see the control point that you want to work with (refer to "Using PipeView" on page 9).
2. Click the control point that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The control point details display.
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**

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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. In PipeView position the hydraulic system diagram so you can see the control point that you want to work with (refer to "Using PipeView" on page 9).
2. Click the control point that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The control point details display.
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. In PipeView, position the hydraulic system diagram so you can see the control point that you want to work with (refer to "Using PipeView" on page 9).
2. Click the control point that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The control point details display.
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

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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.

## Mainline Settings

### Working with Mainline Settings

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

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

- 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. In PipeView position the hydraulic system diagram so you can see the mainline that you want to work with (refer to "Using PipeView" on page 9).
2. Click the mainline that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right corner. The mainline details display.
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 PipeView.

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

## Enabling/Disabling a Mainline

1. In PipeView position the hydraulic system diagram so you can see the mainline that you want to work with (refer to "Using PipeView" on page 9).
2. Click the mainline that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The mainline details display.

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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. In PipeView position the hydraulic system diagram so you can see the mainline that you want to work with (refer to "Using PipeView" on page 9).
2. Click the mainline that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The mainline details display.
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. In PipeView position the hydraulic system diagram so you can see the mainline that you want to work with (refer to "Using PipeView" on page 9).
2. Click the mainline that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The mainline details display.
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. In PipeView position the hydraulic system diagram so you can see the mainline that you want to work with (refer to "Using PipeView" on page 9).

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2. Click the mainline that you want to work with. The slide-out pane displays.
  3. Click **Details** in the lower-right. The mainline details display.
  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. In PipeView position the hydraulic system diagram so you can see the mainline that you want to work with (refer to "Using PipeView" on page 9).
2. Click the mainline that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The mainline details display.
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. In PipeView position the hydraulic system diagram so you can see the mainline that you want to work with (refer to "Using PipeView" on page 9).
2. Click the mainline that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The mainline details display.
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

1. In PipeView position the hydraulic system diagram so you can see the mainline that you want to work with (refer to "Using PipeView" on page 9).
2. Click the mainline that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The mainline details display.

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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.

## Water Source Settings

### Working with Water Source Settings

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

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

- 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. In PipeView position the hydraulic system diagram so you can see the water source that you want to work with (refer to "Using PipeView" on page 9).
2. Click the water source that you want to work with. The slide-out pane displays.



3. Click **Details** in the lower-right corner. The water source details display.
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 PipeView.

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

### **Enabling/Disabling a Water Source**

1. In PipeView position the hydraulic system diagram so you can see the water source that you want to work with (refer to "Using PipeView" on page 9).
2. Click the water source that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The water source details display.
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.

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## Setting the Monthly Water Budget

1. In PipeView position the hydraulic system diagram so you can see the water source that you want to work with (refer to "Using PipeView" on page 9).
2. Click the water source that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right corner. The water source details display.
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. In PipeView position the hydraulic system diagram so you can see the water source that you want to work with (refer to "Using PipeView" on page 9).
2. Click the water source that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right corner. The water source details display.
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 options:

#### **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. Click the condition that you want to change in the Add Empty

- 
- Condition row.
  2. Change the fields as needed.
  3. Click **Save**.

### Remove an Empty Condition

1. Click the **X** in the **Remove** column for the empty condition that you no longer need.
2. Click **Save**.

## Setting the Priority for a Water Source

1. In PipeView position the hydraulic system diagram so you can see the water source that you want to work with (refer to "Using PipeView" on page 9).
2. Click the box for the water source that you want to work with. The slide-out pane displays.
3. Click the **Details** button in the lower-right corner. The water source details display.
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.

## Zone Settings

### Working with Zone Settings

In PipeView, you can add or update the following zone settings:

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

- The zone description
- Enable or disable the zone
- The design flow for that zone

Refer to the topics within this section for specific instructions.

### **Updating a Zone Description**

1. In PipeView position the hydraulic system diagram so you can see the zone (valve) that you want to work with (refer to "Using PipeView" on page 9).
2. Click the zone that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right corner. The zone details display.
4. Click **Edit** in the lower-right corner. The zone details are available for editing.
5. If necessary, click the **Zone General Information** header to expand the section.
6. In the **Description** field, type a description that identifies the zone.  
**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.
7. Click **Save** in the lower-right corner.

### **Enabling/Disabling a Zone**

1. In PipeView position the hydraulic system diagram so you can see the zone (valve) that you want to work with (refer to "Using PipeView" on page 9).

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2. Click the zone that you want to work with. The slide-out pane displays.
  3. Click **Details** in the lower-right. The zone details display.
  4. Click **Edit** in the lower-right corner. The zone details are available for editing.
  5. If necessary, click the **Zone 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 zone is enabled. When the field is empty, the zone is disabled and will not be used.
  7. Click **Save** in the lower-right corner.

### Setting the Design Flow for a Zone

1. In PipeView position the hydraulic system diagram so you can see the zone (valve) that you want to work with (refer to "Using PipeView" on page 9).
2. Click the zone that you want to work with. The slide-out pane displays.
3. Click **Details** in the lower-right. The zone details display.
4. Click **Edit** in the lower-right corner. The zone details are available for editing.
5. If necessary, click the **Zone General Information** header to expand the section.
6. Click the up or down arrow in the **Design Flow** field to enter the amount of flow in gallons per minute (GPM) that this zone is expected to run.
7. Click **Save** in the lower-right corner.



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## Glossary

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### A

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#### **address**

When a device is connected to the two-wire, the device is given an address that identifies it to the Baseline irrigation controller. The controller refers to an address as a zone number.

#### **application rate**

The rate at which water is applied to an area within the landscape by an irrigation system. In order to determine proper duration of watering, it is essential that you know the application rate for each watering zone.

#### **auto-calibration**

The controller is able to determine the water holding capacity (field capacity) of soil when using biSensor based watering strategies. A single calibration cycle, or automatic monthly calibration cycles can be scheduled.

### B

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#### **biCoder**

This is Baseline's term for several types of two-wire devices. A Baseline valve decoder is referred to as a valve biCoder. Baseline decoders are called biCoders because they are capable of full, bidirectional communications, which enables biCoders to report back to the controller with specific information, including valve solenoid current and voltage, two-wire communications health and voltage, and other rich diagnostics information.



### **biLine protocol**

Baseline's proprietary two-way communication standard that operates over two-wire irrigation wiring

### **biSensor**

Baseline's patented digital Time Domain Transmission (TDT) soil moisture sensor

## **C**

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### **concurrent zones**

The number of zones (valves) that can be operated at the same time – typically limited by the amount of water available and the design flow of each of the zones. Set up the concurrent zones on a per program basis and have it automatically managed using a flow device.

### **crop coefficient**

A value for specific crops that can be used to calculate ET<sub>c</sub> when field data is not available. Crop coefficient is abbreviated as K<sub>c</sub>.

### **crop evapotranspiration**

Specific crop moisture requirements as determined by lysimeter studies or calculated by formulas. Abbreviated as ET<sub>c</sub>.

## **D**

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### **decoder**

A two-wire device that can actuate a valve when the controller sends a message to do so

### **density factor**

A value that represents the amount of leaf area in the hydrozone. An area of dense planting will typically lose more water than an area of sparse planting. Abbreviated as K<sub>d</sub>.

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**design flow**

The GPM that is expected for a zone or the capacity of a mainline, based on the physical components and topology used in construction

**distribution uniformity**

A measure of how evenly a sprinkler system applies water to any specific zone or area. High distribution uniformity means that the measured precipitation rate at any point in a zone will be roughly the same. Low distribution uniformity means that some areas get much more water per minute of water time than others.

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**E****ET-based watering**

A watering methodology that uses the principles of evapotranspiration (ET) to water when needed rather than on an established schedule. Also known as weather-based watering.

**ET<sub>o</sub>**

See reference evapotranspiration

**evaporation**

Loss of water as vapor from the soil surface or from moisture on the surface of a leaf. Differs from transpiration in that the water does not pass through the plant parts.

**evapotranspiration**

The process of transferring moisture from the earth to the atmosphere by evaporation of water and transpiration from plants. Also referred to as ET.

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## **F**

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### **field capacity**

This is the maximum water holding capacity of the soil, in other words, the level of soil moisture left in the soil after drainage of the gravitational water. Irrigation to levels above field capacity will result in runoff or drainage as gravitational water.

### **flow device**

A device that is capable of measuring water flow and water used

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## **G**

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### **GPH**

The abbreviation for gallons per hour

### **GPM**

The abbreviation for gallons per minute

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## **H**

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### **hydrozone**

A grouping of plants that have similar water requirements and can be watered the same

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## **I**

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### **infiltration**

The process by which water passes through soil – the liquid permeates the soil by passing through the pores in the soil

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**K**

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**k-value**

Also known as k-factor. A calibration factor for a flow device expressed in pulses per unit volume. The k-value is used to calibrate the volumetric throughput of a flow device. Manufacturers give the k-value (or k-factor) of their flow device in the device specification.

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**L**

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**landscape coefficient**

A formula that uses the values for species factor ( $K_s$ ), density factor ( $K_d$ ) and microclimate factor ( $K_{mc}$ ) to estimate the crop coefficient.

**linked zone**

Within a zone group, there is one primary zone and all other zones are then "linked" to the primary and will get their programming information from the primary (water time, program, schedule, etc.)

**lower limit**

Also known as lower threshold. This watering strategy is programmed by setting the controller to water every day and then setting the biSensor to allow watering only when the moisture level drops below this limit – the controller can automatically set this lower limit after a calibration cycle, or it can be set manually.

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**M**

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**mainline**

A pressurized pipe that supplies water from the point of connection (water source) to the valves

### **master valve**

An automatic or manual valve installed on the mainline piping. Abbreviated as MV.

### **maximum allowed depletion**

When the soil moisture content reaches this level, irrigation needs to start. In most cases, the maximum allowed depletion level is just before the plants begin to show visible signs of stress. Abbreviated as MAD.

### **microclimate**

The climate of a specific location within a landscape. Variations in climate are influenced by subtle differences in temperature, humidity, and wind exposure. Microclimates can have a significant impact on plant water needs.

### **microclimate factor**

A value used to represent the microclimate in a particular hydrozone. If the area is open and not subject to extraordinary winds or reflected heat, the microclimate factor is "average." A hydrozone that is shaded for most of the day and protected from wind is "low." A hydrozone that is surrounded by heat absorbing or reflective surfaces, or exposed to windy conditions is "high." Microclimate factor is abbreviated as Kmc.

## **O**

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### **offset value**

A calibration factor for a flow device that compensates for limitations in the device's ability to measure small signals adequately. Manufacturers give the maximum amount of offset associated with their flow device in the device specification.

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**P**

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**permanent wilting point**

When soil moisture content reaches this level, plants can no longer get water from the soil, and they will wilt and die

**point of control**

A point of control is a hydraulic component in Baseline controllers that collects data from assigned devices, and then enables the irrigation system to act on that data.

**precipitation rate**

The rate at which an irrigation system applies water. The precipitation rate can vary for different areas of the landscape based on head types, spacing, layout topology, pressure, etc.

**primary zone**

The zone within a scheduling group that all other linked zones are linked to. Changing the programming on this zone will adjust the programming on all linked zones, resulting in saved time and consistency. If you are using a biSensor, the primary zone is the zone that the sensor is connected to.

**pump start**

A relay or relay-type device that initiates turn on of a pump, typically a high horsepower electrical or motor driven pump

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**R**

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**reference evapotranspiration**

Reference ET applies weather and crop data to accepted formulas in order to estimate evapotranspiration for a range of vegetation and surface conditions. Abbreviated as ETo.

## **runoff**

When the soil moisture content is at the saturation level, any excess water from rain, snow melt, or irrigation drains to a low point in the landscape

## **S**

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## **saturation**

When the soil moisture content is at this level, nearly all of the spaces between soil particles are filled with water. After a soil has reached saturation, it does not become more saturated; although, in some situations where water is trapped, it can become flooded.

## **scheduling group**

A group of one or more zones that have been linked together for irrigation scheduling. A scheduling group must have one primary zone, and may have one or more linked zones. Irrigation for all zones in a scheduling group will follow the watering strategy of the primary zone, but actual water times and soak/cycle behavior will scale as programmed relative to the primary zone.

## **soak cycle**

When a zone waters using soak cycles, the total water time includes periods of watering interspersed with periods of non-watering times (soak times).

## **soil moisture content**

The ratio of the volume of contained water in a soil compared with the entire soil volume

## **soil moisture deficit**

When soil dries (for example, by evaporation), the measurable shortage of water in the soil is known as the soil-moisture deficit. It also refers to the amount of water needed to return to field-

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capacity moisture content.

**species factor**

A value that represents the water needs of a particular plant species. The values are based on water use studies for landscape species and on agricultural data. Abbreviated as Ks.

**T**

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**temperature sensor**

A sensor that functions like thermometer to measure the temperature of the air and report this measurement to the controller by way of a biCoder

**time domain transmission**

A measurement of how much the electrical signals in the soil are slowed down by the presence of water. Baseline's biSensor moisture sensor uses this technology. Abbreviated as TDT.

**timed zone**

Any zone programmed to water on a time/day schedule, rather than on a smart irrigation schedule

**transpiration**

The loss of water vapor from parts of plants. Water is lost primarily from the pores on the leaves but also from stems, flowers, and roots

**two-wire**

Irrigation wiring that consists of a cable with an outer insulation around 2 internal insulated wires. Two-wire provides communication and power for all valves and other devices throughout the site. It provides full two-way communication much like a computer network.



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## U

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### **upper limit**

Also known as upper threshold. This watering strategy varies the zone water time each time the program runs in order to apply enough water to raise the moisture level to field capacity.

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## V

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### **valve**

A device that opens to allow water to flow to the sprinkler heads or emitters in a zone. It closes to halt watering for that zone.

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## W

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### **water budget**

In the BaseStation 3200 irrigation controller, the water budget functionality enables you to define and track the total flow for each Flow biCoder per month. You can configure the target flow value in GPM for the Flow biCoder and how the system will react when this number is reached.

### **water window**

The time available for watering through an irrigation system. Typically, all days and times would be available for watering unless there are watering restrictions or you need to set aside a time for mowing.

### **weather-based watering**

A watering methodology that uses the principles of evapotranspiration to water when needed rather than on an established schedule. Also called ET-based watering.

**WeatherAccess**

Baseline's implementation of weather-based watering

**Z**

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**zone**

A designated area of landscaping that is watered by a specific valve

