

Water Conservation

# BASELINE AUDIT, GRADES K-2

Consider contacting local, regional or state water conservation non-profits, and/or your water municipality for assistance conducting the audit. Their involvement is a great way to connect to the community, inspire students, spotlight career possibilities and share resource expertise.

Invite parents and community members to participate in the auditing process. Students can participate in Public Participation in Scientific Research [(PPSR)](https://en.wikipedia.org/wiki/Citizen_science) projects. This experience is a great way to build community.

## REQUIRED METRICS

1. Number of water using devices monitored.
2. On average, by how many gallons has the school’s water usage decreased?

## SURVEY

### Before starting the water audit or going further, survey students and record the average response.

1. We have access to clean usable water. True False Unsure
2. Wasting water has impacts on the environment. True False Unsure On a scale from 1-10, 10 being the most important and 1 being the least important,
3. How important is it to you to conserve or not waste water?

## TABLE 1. DEFINING THE STUDY SITE

|  |  |
| --- | --- |
| 1. Our school’s water sources have been tested for the following contaminants.\* (faucets, fountains, showers)  2016 WIIN Act – Provision, Sec. 2107: Lead testing in  [school and child care program drinking water](https://www.epa.gov/dwcapacity/wiin-grant-lead-testing-school-and-child-care-program-drinking-water) | lead bacteria iron mercury  copper nitrates unsure |
| 2. What is the source of the school’s water supply? | well  municipal water supply  unsure |
| 3. If a municipal water supply, what is its source? | lake or river well (aquifer/groundwater)  N/A unsure |
| 4. Where does water used inside the school go? Check all that apply. | on-site septic systems drainage field  municipal sewer system  recycled for use as grey water |
| 5. How many gallons of water does the school and district use each year? | gallons per year at the school  gallons per year at the district |

\*Do you have questions regarding water quality at school? The Healthy Schools Pathway can help. If the team needs a timely response, please contact us at [eco-schoolsusa@nwf.org.](mailto:eco-schoolsusa@nwf.org)

# IRRIGATION

## CHART 1. GENERAL IRRIGATION

|  |  |
| --- | --- |
| 1. After walking the school grounds, what type of land cover was observed most? | grass and/or other natural plant cover  natural rock ground covers  concrete/asphalt  turf or man-made ground covers |
| 2. What is the average rainfall, in inches, for each mo<https://www.usclimatedata.com/>  August | nth during the school year, August through June?  in. |
| September | in. |
| October | in. |
| November | in. |
| December | in. |
| January | in. |
| March | in. |
| April | in. |
| May | in. |
| June | in. |

Continued on the next page.

## CHART 2. IRRIGATION SYSTEM

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. Is an irrigation system installed throughout the  school grounds? | Yes |  | No |  | Unsure |
|  | | | | |
| If yes, continue to question 2. If no or unsure, go to Chart 3. | | | | | |
| 2. Survey the heads, drips and/or bubblers in each zone/station. How many were observed to be  broken, leaking or cut? |  | | | | |

CHART 3. SPRINKLERS WITH A HOSE ATTACHMENT

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. Are sprinklers used to irrigate school green  spaces? | Yes |  | No |  | Unsure |
|  | | | | |
| If yes, continue to question 2. If no or unsure, go to the summary questions at the bottom of the page. | | | | | |
| 2. Survey the outdoor faucets, hoses and  sprinklers. How many were observed to be leaking, worn out or broken? |  | | | | |

### Think about the following questions as you summarize the information in Charts 1-3.

1. How does precipitation impact how often the school grounds are watered?
2. Explain any questions teams/classes have regarding the results of their irrigation audit? Who can they contact?
3. What actions can the team/class take to improve water conservation on the school grounds?

# CHART 4. SCHOOL BATHROOM TOILETS

Using a highlighter, mark the locations on a school map where auditing will occur. Work with the team/class to complete the audit and calculations. These tables and charts will be used to draw conclusion about water use and to inform the action plan to make recommendations for better water stewardship at the school.

(A/S) Automatic/Sensor (M) Manual (flush by hand)

|  |  |  |  |
| --- | --- | --- | --- |
| Bathroom Location | Toilets | | Any Observed Leaks? |
|  | A/S | M |  |
| Example: 1st grade hallway |  | 6 | X Yes No |
|  |  |  | Yes No |
|  |  |  | Yes No |
|  |  |  | Yes No |
| Totals |  |  |  |

# CHART 5. SCHOOL BATHROOM URINALS

(A/S) Automatic/Sensor (M) Manual (flush by hand)

|  |  |  |  |
| --- | --- | --- | --- |
| Bathroom Location | Urinals | | Any Observed Leaks? |
|  | A/S | M |  |
| Example: 1st grade hallway |  | 6 | X Yes No |
|  |  |  | Yes No |
|  |  |  | Yes No |
|  |  |  | Yes No |
| Totals |  |  |  |

# CHART 6. SCHOOL BATHROOM FAUCETS

(A/S) Automatic/Sensor (M) Manual (turn on/off by hand)

|  |  |  |  |
| --- | --- | --- | --- |
| Bathroom Location | Faucets | | Any Observed Leaks? |
|  | A/S | M |  |
| Example: Oriole Hallway | 8 |  | X Yes No |
|  |  |  | Yes No |
|  |  |  | Yes No |
|  |  |  | Yes No |
| Totals |  |  |  |

# CHART 7. OTHER WATER USING APPLIANCES

## Collect data at up to five areas locations around the school.

(A/S) Automatic/Sensor (M) Manual (by hand)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Location** | **Water Fountains** | | **Other**  **\_** | | **Any Observed Leaks?** |
|  | **A/S** | **M** | **A/S** | **M** |  |
| Front hallway by the office |  | **2** |  |  | Yes X No |
|  |  |  |  |  | Yes No |
|  |  |  |  |  | Yes No |
|  |  |  |  |  | Yes No |
|  |  |  |  |  | Yes No |
|  |  |  |  |  | Yes No |

### Think about the following questions as you summarize the information in Charts 4-6.

1. Provide a summary of water use at your school using Charts 4-6.
2. Explain any questions or concerns teams/classes have regarding the results of their in-building audit? Who can be contacted to help answer questions or fix problems?
3. What actions can the team/class take to improve water conservation inside the building?

## TABLE 2. WATER CONSERVING APPLIANCES, DEVICES AND PRACTICES

|  |  |
| --- | --- |
| 1. Do all indoor faucets have aerators? | Yes No Unsure |
| 2. How many of the school’s toilets and urinals are considered low- flow/high-efficiency? |  |
| 3. Does the school have water bottle filling stations (not water fountains)? | Yes No Unsure How many? |
| 4. Does the school encourage students to bring and use reusable water bottles? | Yes No Unsure |
| 5. Does the school have functioning rain barrels and/or cisterns? | Yes No Unsure How many? |
| 6. Does the school use native grasses, trees, shrubs and flowers in its landscape design? | Yes No Unsure |
| 7. Do any part of the school grounds use xeriscaping, have installed rain gardens and/or bioretention ponds? | Yes No Unsure |
| 8. List any other water conserving practices used at the school. |  |

### Think about the following question as you summarize the data in Table 2.

1. Based on the responses in Table 2, how would the team/class rate their water conservation practices currently in use?

Very Good Good Needs Improvement Needs A Lot of Improvement

Why?

1. What actions can teams/students take to improve water stewardship?

### Review of All Data

* 1. Based on what is known and has been learned, what claims can be made based on the data and other evidence collected?
  2. Be prepared in the post-audit to define how **systems** look in understanding water conservation at school.
  3. Be prepared in the post-audit to explain **cause and effect** relationships related to water conservation.
  4. Be prepared in the post-audit to identify **patterns** students have observed through their investigations.