Classroom Name:_____   School Name: _____

Water Conservation and Protection Pathway

Fill in the following information as a class, in groups, or assign questions to individual students.

Stormwater	Drinking Water & Wastewater
Name of the watershed[1] your school is located in:	Name of your local drinking water provider: (Find this info on school's water bill—Ask school or district admin)
Describe the location of the nearest storm drain to your school:	Name the source(s) of your school's drinking water:
Name the creek or waterway the nearest storm drain empties into:	Name & locate your local wastewater[3] treatment facility. *Note: The water in the storm drains runs to this wastewater treatment plant.*
Is recycled water[2] used at your school? If so, how?	Name the body of water (river, bay, ocean) that your wastewater treatment facility discharges cleaned water into.
Activity: Create a map or diagram of where the storm drain water flows from your school to your local creek or waterway and to the San Francisco Bay.	**Activity:** Create a map or diagram showing where the school's drinking water comes from and how the water flows to the school. Then map how the water (now wastewater) travels once it goes down the drain.

[1]Watershed: "The area of land that includes a particular river or lake and all the rivers, streams, etc. that flow into it." (Merriam-Webster online dictionary)

[2]Recycled Water: "Reusing treated wastewater for beneficial purposes such as agricultural and landscape irrigation, industrial processes, toilet flushing, and replenishing a groundwater basin." (US Environmental Protection Agency)

[3]Wastewater: "The used water and solids from a community that flow to a treatment plant. Storm water, surface water, and groundwater infiltration also may be included in the wastewater that enters a [treatment facility]." (City of San Mateo – Public Works)

Baseline Assessment

Use the assessment sheet below to evaluate the current water usage in the classroom, hallway, and nearest bathroom as well as the school's landscaping and athletic fields. Equipment needed for *class/hallway/bathroom* evaluation (could get from science lab): a *quart-size or 32 oz. measuring cup* and a **stop watch**.

Please Note: If your students decide to assess more than one classroom/bathroom, complete the respective portion of one of these forms for each room.

After the class has completed the Water Worksheet and this baseline assessment, proceed to Step 2 to develop an **Action Plan** report.

Collect Data for the Classroom, Hallway and nearest Bathroom.

1)	How many drinking fountains are in the hallway closest to the classroom? Which classroom or bathroom are they closest to?	# fountains _____ Location		
2)	Are any of the drinking fountains leaking onto the floor, or continue to run water when they are not being used? Which ones?	☐ Yes ☐ No	Which?	
3)	Are there any water stations that are designed for people to fill up a water bottle? Where?	☐ Yes ☐ No	Where?	
4)	Are students allowed to carry water bottles with them around school and in the classroom?	☐ Yes ☐ No		
5)	Where is the nearest bathroom located?			
6)	Are there signs in the bathroom about saving water and/or how to wash hands using less water?	☐ Yes ☐ No		

7) **Bathroom Faucet Inventory**: Type, Aerator Check which **type** of faucet each is: motion sensor (automatic), hand-operated (manual), or press/push (metered) Does it have an **aerator**? Check Yes or No. *An aerator is a round metal piece that screws into the end of the faucet and reduces water Flow Rate.* *If you are unsure, with permission of your teacher or facilities staff, try unscrewing the tip of the faucet.* *If it comes off, that is the aerator.*	**Type of faucet?** Faucet #1: ____ Automatic ____ Manual ____ Metered		**Aerator?** ☐ Yes ☐ No
	Faucet #2: ____ Automatic ____ Manual ____ Metered		☐ Yes ☐ No
	Faucet #3: ____ Automatic ____ Manual ____ Metered		☐ Yes ☐ No
	Faucet #4: ____ Automatic ____ Manual ____ Metered		☐ Yes ☐ No
	Faucet #5: ____ Automatic ____ Manual ____ Metered		☐ Yes ☐ No
8) **Bathroom Faucet Assessment**: Fill Time, tested Flow Rate Measure and record how many seconds it takes each faucet to fill up your quart or 32 oz. bucket. This is known as the **Fill Time**. Use the equation below to calculate the Flow Rate of each faucet. Refer to the Fill Times. **Tested Flow Rate** = 0.25 gallons ÷ (Fill Time ÷ 60 seconds) = gallons per minute, or "GPM" *Note: 1 quart and 32 oz. are both the same amount of water as 0.25 gallons.* Is the tested flow rate higher than 0.5 gpm? Check Yes or No. *If yes, it is time to replace the aerator with one that is labeled 0.5 gpm, the best available!*	**Fill Time?** Faucet #1: _____ seconds	**Tested Flow Rate?** _____ gpm	**Tested Flow Rate > 0.5 gpm?** ☐ Yes ☐ No
	Faucet #2: _____ seconds	_____ gpm	☐ Yes ☐ No
	Faucet #3: _____ seconds	_____ gpm	☐ Yes ☐ No
	Faucet #4: _____ seconds	_____ gpm	☐ Yes ☐ No
	Faucet #5: _____ seconds	_____ gpm	☐ Yes ☐ No
9) If the faucets are metered, do any of them stay on for more than 15 seconds when you push it down all the way? Which ones?			
10) Are any faucets dripping when they are turned off? Which ones?			

11) **Toilet Inventory**: Type, Valve Brand Check the **type** of toilet: motion sensor (automatic), hand lever (manual), push button or green handle with two options (dual flush) Record the **brand name** on top of the flush valve. If there is no name, write N/A. *The flush valve is the clunky metal piece that connects the plumbing in the wall to the toilet. It is helpful to name the brand of the toilet for the facility staff just in case a valve needs to be replaced.*	**Type of toilet?** Toilet #1: ____ Automatic ____ Manual ____ Dual Flush Toilet #2: ____ Automatic ____ Manual ____ Dual Flush Toilet #3: ____ Automatic ____ Manual ____ Dual Flush Toilet #4: ____ Automatic ____ Manual ____ Dual Flush Toilet #5: ____ Automatic ____ Manual ____ Dual Flush Toilet #6: ____ Automatic ____ Manual ____ Dual Flush		**Valve Brand?**

	Flush Time?	Tested Gallons per Flush?	Gallons per Flush > 2.0 GPF?
12) **Toilet Assessment**: Flush Time, tested GPF Measure and record how many seconds it takes for the toilet to flush. This is the **Flush Time**. Start counting when you see the water start moving. Stop counting when the water finishes flowing into the drain, just before the bowl begins to fill up again. Use the equation below to calculate the GPF of each toilet. Refer to the Flush Times. **Tested Gallons per Flush** = (Flush Time – 1) ÷ 2 = "GPF" Is the tested gallons per flush higher than 2.0 GPF? Check Yes or No. *If yes, it is time to replace the flush valve with one that is labeled 1.28 GPF or less!*	Toilet #1: _____ seconds Toilet #2: _____ seconds Toilet #3: _____ seconds Toilet #4: _____ seconds Toilet #5: _____ seconds Toilet #6: _____ seconds	_____ GPF _____ GPF _____ GPF _____ GPF _____ GPF _____ GPF	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No

13) **Urinal Inventory**: Type, Valve Brand Check the **type** of urinal: motion sensor (automatic), or hand lever (manual) Record the **brand name** on top of the flush valve. If there is no name, write N/A. *The flush valve is the clunky metal piece that connects the plumbing in the wall to the urinal. It is helpful to name the brand of the urinal for the facility staff in case a part needs to be replaced.*	**Type of Urinal?** Urinal #1: ____ Automatic ____ Manual Urinal #2: ____ Automatic ____ Manual Urinal #3: ____ Automatic ____ Manual Urinal #4: ____ Automatic ____ Manual		**Valve Brand?**

	Flush Time?	Tested Gallons per Flush?	Gallons per Flush > 2.0 GPF?
14) **Urinal Assessment:** Flush Time, tested GPF Measure and record how many seconds it takes for the urinal to flush. Start counting when you see the water start moving. Stop counting when the water finishes flowing into the drain, just before the bowl begins to fill up again. This is the **Flush Time**. Use the equation below to calculate the GPF of each urinal. Refer to the Flush Times. **Tested Gallons per Flush** = (Flush Time – 1) ÷ 2 = "GPF" Is the tested gallons per flush higher than 1.0 GPF? Check Yes or No. *If yes, it is time to replace the flush valve with one that is labeled 0.5 GPF or less!*	Urinal #1: _____ seconds Urinal #2: _____ seconds Urinal #3: _____ seconds Urinal #4: _____ seconds	_____ GPF _____ GPF _____ GPF _____ GPF	☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No ☐ Yes ☐ No

15) **Classroom Faucet Inventory**: Type, Aerator	Type of Faucet?	Aerator?
Check which **type** of faucet each is: motion sensor (automatic), hand-operated (manual), or press/push (metered)	Faucet #1: ____ Automatic ____ Manual ____ Metered	☐ Yes ☐ No
Does it have an **aerator**? Check Yes or No. *An aerator is a round metal piece that screws into the end of the faucet and reduces water Flow Rate.* *If you are unsure, with permission of your teacher or facilities staff, try unscrewing the tip of the faucet. If it comes off, that is the aerator.*	Faucet #2: ____ Automatic ____ Manual ____ Metered	☐ Yes ☐ No
	Faucet #3: ____ Automatic ____ Manual ____ Metered	☐ Yes ☐ No

Please note: If your classroom is a science lab, do not inventory or assess the faucets that have the green caps or turret spouts. These are intentionally set at a specific pressure and flow rate.

16) **Classroom Faucet Assessment**: Fill Time, tested Flow Rate	Fill Time?	Tested Flow Rate?	Flow Rate > 0.5 gpm?
Measure and record how many seconds it takes each faucet to fill up your quart or 32 oz. bucket. This is known as the **Fill Time**.	Faucet #1: _____ seconds	_____ gpm	☐ Yes ☐ No
Use the equation below to calculate the Flow Rate of each faucet. Refer to the Fill Times. **Tested Flow Rate** = 0.25 gallons ÷ (Fill Time ÷ 60 seconds) = gallons per minute, or "GPM" *Note: 1 quart and 32 oz. are both the same amount of water as 0.25 gallons.*	Faucet #2: _____ seconds	_____ gpm	☐ Yes ☐ No
Is the tested flow rate higher than 0.5 gpm? Check Yes or No. *If yes, it is time to replace the aerator with one that is labeled 0.5 gpm, the best available!*	Faucet #3: _____ seconds	_____ gpm	☐ Yes ☐ No

17) Is there a way for teachers and students to report about leaks, running water, broken or clogged sinks, toilets and urinals?	☐ Yes ☐ No
Is there a way for them to know whether it has been taken care of?	☐ Yes ☐ No

Collect Data for the Landscape. *For assistance, contact your school's or school district's facility or operations manager/staff.*

18) What kind of irrigation (watering system) does your campus use for the landscaping (non-sports fields)? Check all that apply.
___ sprinklers   ___ underground hoses (drip)   ___ mix of both   ___ by hand (ex. watering can or gardening hose)   ___ other (Please explain_____)

19) What kind of irrigation (watering system) does your campus use for the sports fields? Check all that apply.
___ sprinklers   ___ underground hoses (drip)   ___ mix of both   ___ by hand (ex. watering can or gardening hose)   ___ other (Please explain_____)

20) During and/or after the landscape and sports fields have been watered, are there signs that they are being overwatered or that water is being wasted? Check all that apply.
___ patches of soggy ground or mud   ___ wilted grass, plants, or trees   ___ water spraying onto solid surfaces like the sidewalk, parking lot, etc.
___ sprinklers that mist   ___ sprinklers that spray water high in the air   ___ dry patches

Please indicate, in the Notes section below, where you observe any of these phenomena on campus.

21) Of all of the landscaping (non-sports fields) on campus, about what percentage is lawn/grass? _____ percent
Many water agencies offer reimbursement for conversion of lawn to drought-tolerant landscaping, which can require up to 3x less water than lawn.

22) Does your school have rain gutters on the edge of the roof? If yes, where do they drain to? For example...onto the sidewalk, into the grass, into a rain barrel, etc.	☐ Yes ☐ No	Where?
23) At your school, is rainwater captured in a rain barrel or cistern or rain garden? Where is it?	☐ Yes ☐ No	Where?
24) During the rainy season, have you seen any signs of poor drainage in the grass or landscape areas, such as puddles, mini streams of water and erosion? If yes, where?	☐ Yes ☐ No	Where?

25) Is there a way for teachers and students to report signs of poor drainage, overwatering, and malfunctioning equipment?	☐ Yes ☐ No
Is there a way for them to know whether it has been taken care of by facility staff?	☐ Yes ☐ No

NOTES

Record your observations from question 20 here.

_____

_____

_____

Write down any additional notes or comments below:

_____

_____

_____

_____

_____