



# LEED 2009 for Schools : Design

## WE PREREQUISITE 1: WATER USE REDUCTION 20% REDUCTION

Project # 1000001749 King Elementary School

All fields and uploads are required unless otherwise noted.

### THRESHOLD ATTEMPTED

Points Attempted: 0

### ALL OPTIONS

The Table. Daily Occupancy below is a linked submittal from PI Form 3: Occupant and Usage Data to be used for reference only. PI Form 3 must be completed before values will display in WE Prerequisite 1. These values should inform, but not necessarily parallel, the numbers entered in the Table. Fixture Groups Definition.

**Table.** Daily Occupancy

FTE	Students	Average Transients (Volunteer/Visitor)	Average Retail Customers	Residents	Total
49	550	10	0	0	609

#### Fixture Groups Introduction:

This table allows for project occupants to be organized in a way that best represents fixture usage patterns in the project. Occupants can be grouped together or separated into sub-groups at the option of the project team. The usage groups defined must be derived from daily occupancy data for the project building. Accordingly, all project occupants, as recorded in the Daily Occupancy tables from PI Form 3: Occupant and Usage Data must be represented in the Table. Fixture Groups Definition below. All residential occupants should be represented separately from non-residential occupants. Refer to the additional guidance document in the Credit Resources section.

**Table.** Fixture Groups Definition

Group Name	Annual Days of Operation	FTE	Students	Transients (Volunteer/Visitor)	Retail Customers	Residents	% Female	% Male
Students	200	0	475	0	0	0	50	50
Employee and V	200	49	0	10	0	0	50	50
Handicapped	200	0	10	1	0	0	50	50
Kindergarten	200	0	75	0	0	0	50	50

Add Row

Delete Row

Briefly describe the inputs in the Table. Fixture Groups Definition. Explain the methodology used to define each fixture group, as well as the derivation of data in each row. Additionally, provide a detailed explanation if the default gender ratio is not used.

The user groups have been defined as Employees and Visitors, Students, Kindergarten and Handicapped. The Employee and Visitor group consist of Staff and Visitors. The Student group is the elementary students that will utilize the group restroom facilities. The Handicapped group has been separated to properly account for the fixture usage of the handicapped lavatory that is not metered. The Kindergarten group is for the student group that has restroom facilities located in the classroom.

**Table.** Flush Fixture Data

Enter flush fixture data for each fixture group defined in the Table. Fixture Groups Definition.

*Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseine Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.*

Fixture Groups						Flush Rate (GPF)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID <sup>1</sup>	Fixture Family	Fixture Type	Total Daily Uses <sup>2</sup>	Base-line	In-stalled <sup>3</sup>	IPC/UPC Baseline	Performance Case
Students	Students	P-4	Water Closet	HET, Gravity	950	1.6	1.28	304	243.2
Students	Students	P-5	Urinal	High-efficiency	475	1	0.5	95	47.5
Employee a	Employee and	P-2	Water Closet	HET, Gravity	101	1.6	1.28	32.32	25.86
Handicapped	Handicapped	P-1, P-2	Water Closet	HET, Gravity	20.3	1.6	1.28	6.5	5.2
Kindergarte	Kindergarten	P-1, P-2	Water Closet	HET, Gravity	150	1.6	1.28	48	38.4

Total calculated flush fixture water use annual volume, baseline case (kGal)	485.82
Total calculated flush fixture water use annual volume, performance case (kGal)	360.16
Percent reduction of water use in flush fixtures (%)	26

Add Row

Delete Row

Calculate

- <sup>1</sup> Define a reference name or descriptor that can be used to identify each fixture family/type.
- <sup>2</sup> May be modified for special circumstances. Provide a narrative and upload daily use calculations to justify modifications. Refer to the additional guidance document in the Credit Resources section.
- <sup>3</sup> To account for dual-flush fixtures, enter a weighted average flush rate.

### Table. Flow Fixture Data

Enter flow fixture data for each fixture group defined in the Table. Fixture Group Definitions.

Note: Click "Calculate" placed next to the Add and Delete to perform the calculations in the table. "Calculate" must be run after any or all the data is entered in the table to obtain the values in the summary section, the Baseine Flush Rate, IPC/UPC Baseline and the Performance Case. "Calculate" needs to be run to perform Water Savings Calculation and document Credit compliance.

Fixture Groups							Flow Rate (GPM / GPC)		Annual Water Consumption (kGal)	
Select	Display	Fixture ID <sup>1</sup>	Fixture Family	Fixture Type	Total Daily Uses <sup>2</sup>	Duration (Secs) <sup>2</sup>	Base-line	In-stalled <sup>3</sup>	IPC/UPC Base-line	Perfor-mance Case
Students	Students	P-6, P-8	Public Lavatory Fau	Metering	1425	N/A	0.25	0.13	71.25	37.05
Handicap	Handicapped	P-7	Public Lavatory Fau	IPC/UPC (Convention	30.5	15	0.5	0.5	0.76	0.76
Employee	Employee and	P-3	Shower	Other	4.9	300	2.5	1.5	12.25	7.35
Employee	Employee and	P-6, P-8	Public Lavatory Fau	Metering	152	N/A	0.25	0.13	7.6	3.95
Kindergar	Kindergarten	P-6, P-8	Public Lavatory Fau	Metering	225	N/A	0.25	0.13	11.25	5.85

Save Form

Total calculated flow fixture water use annual volume, baseline case (kGal)	103.11
Total calculated flow fixture water use annual volume, performance case (kGal)	54.96
Percent reduction of water use in flow fixtures (%)	47

- <sup>1</sup> Define a reference name or descriptor that can be used to identify each fixture family/type.
- <sup>2</sup> May be modified for special circumstances. Also, a reasonable estimate **MUST** be provided for pre-rinse spray valves when selected in the table above. In either case, provide a narrative and upload calculations to justify modifications. Refer to the Additional Guidance document in the Credit Resources section.
- <sup>3</sup> When using the metering lavatory faucet, please convert all flow rates in gallons per minute (GPM) to gallons per cycle (GPC) based on duration from the product specifications. Provide a narrative or calculations to support the installed flow rate. The "Duration" is not applicable and therefore should not be modified.

**Upload WEp1-1.** Provide the plumbing fixture and fitting schedule for the project highlighting flush and flow rates for all applicable plumbing fixtures and fittings within the project building.

Files: 2

#### Table. Flush & Flow Fixtures Summary Statistics

Total calculated fixture water use annual volume, Baseline case (kGal)	588.93
Total calculated fixture water use annual volume, Performance case (kGal)	415.12
Percent reduction of water use in all fixtures (%)	30

A 20% reduction of water use in fixtures is required to document compliance with WE Prerequisite 1.

## ADDITIONAL DETAILS

- ☒ Special circumstances preclude documentation of credit compliance with the submittal requirements outlined in this form.

### SPECIAL CIRCUMSTANCES

Describe the circumstances limiting the project team's ability to provide the submittals required in this form. Be sure to reference what additional documentation has been provided, if any. Non-standard documentation will be considered upon its merits.

See response to reviewer comments upload

**Upload WEp1-SC.** Provide any additional documentation that supports the claim to special circumstances. (Optional)

Upload

Files: 0

☐ The project team is using an alternative compliance approach in lieu of standard submittal paths.

## SUMMARY

WE Prerequisite 1: Water Use Reduction - 20% Reduction  
Compliance Documented:

Y