

Feaster Charter Media Design Class

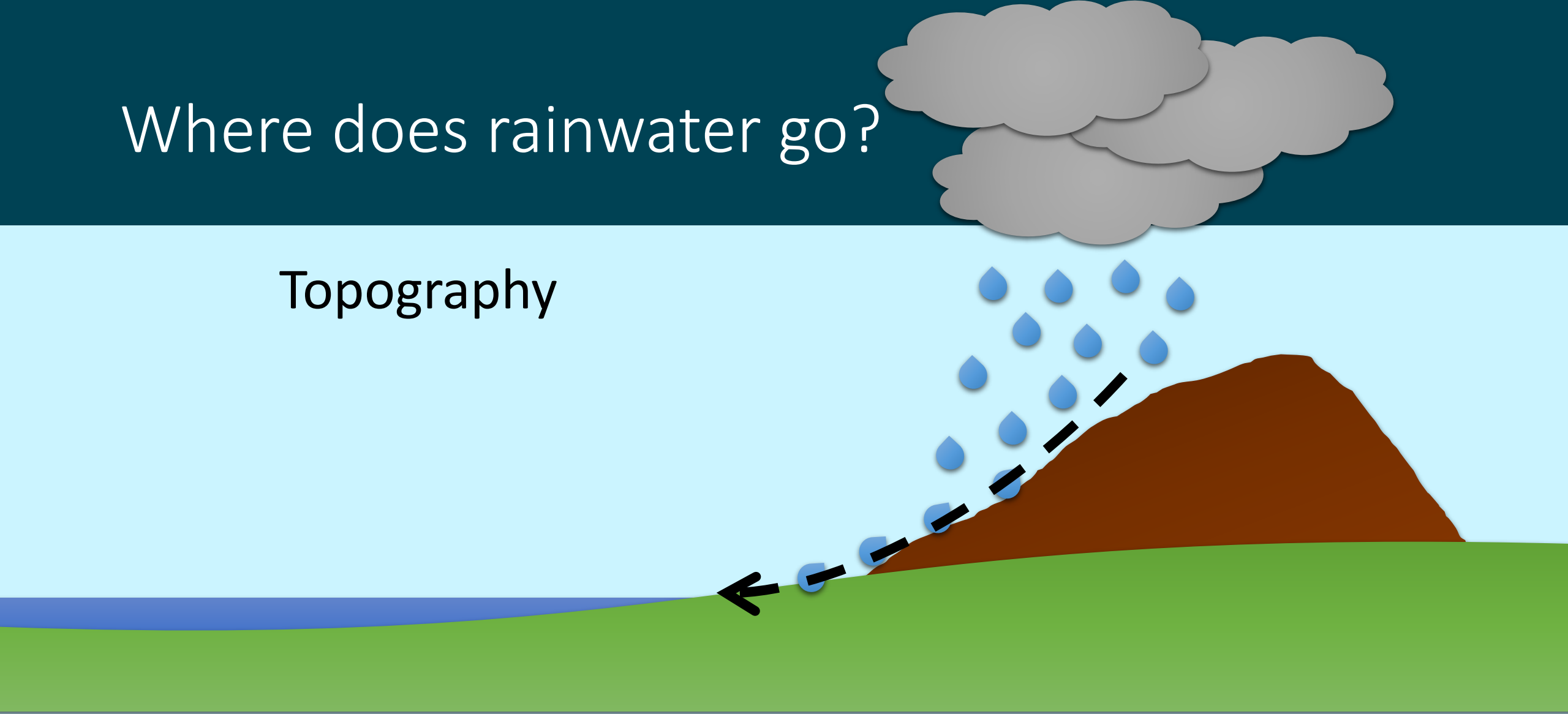


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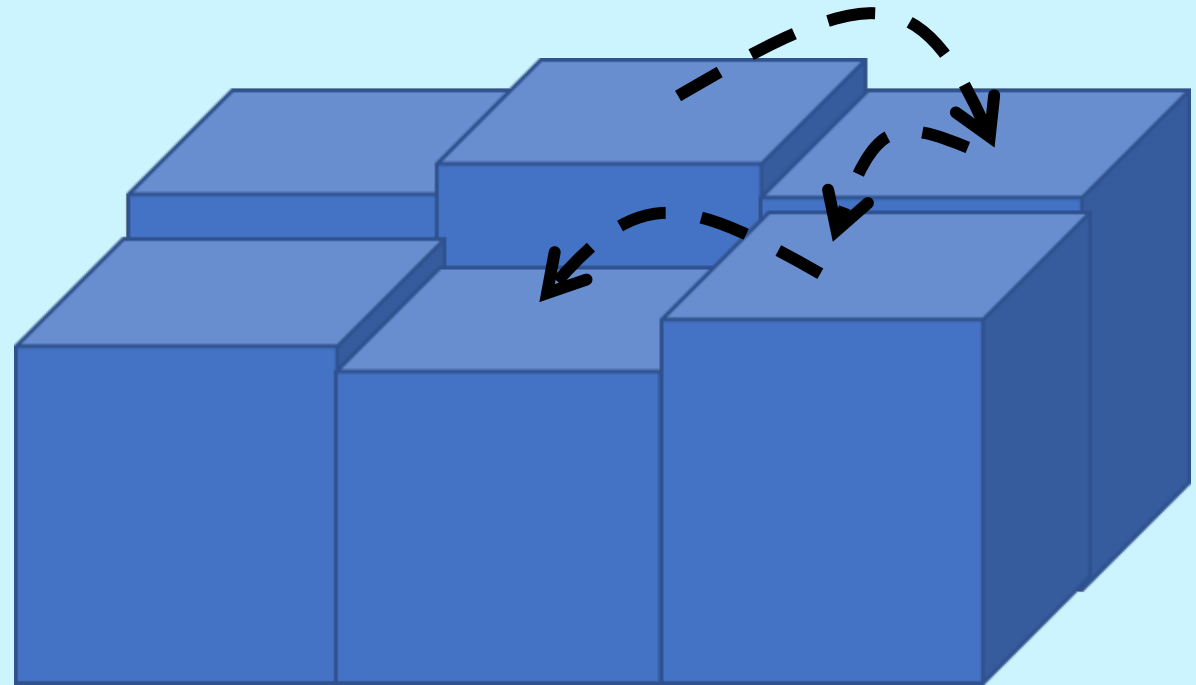
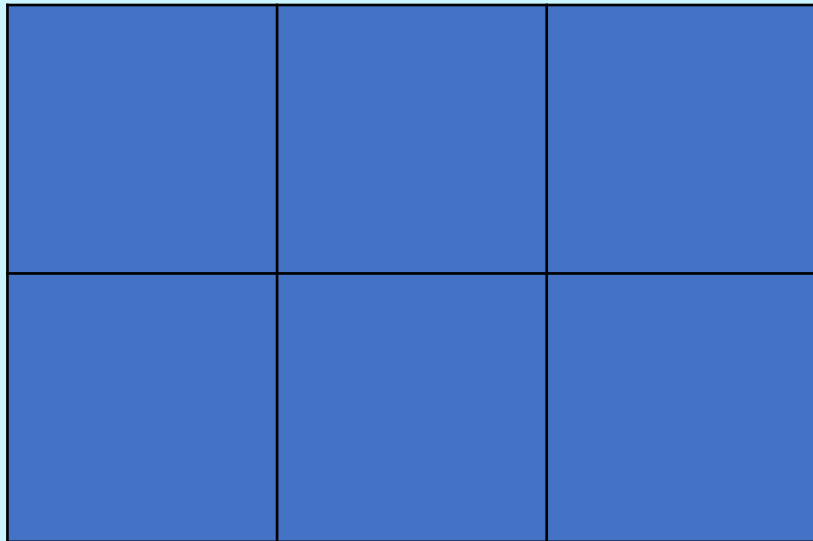


Where does rainwater go?

Topography



Flow Path Model

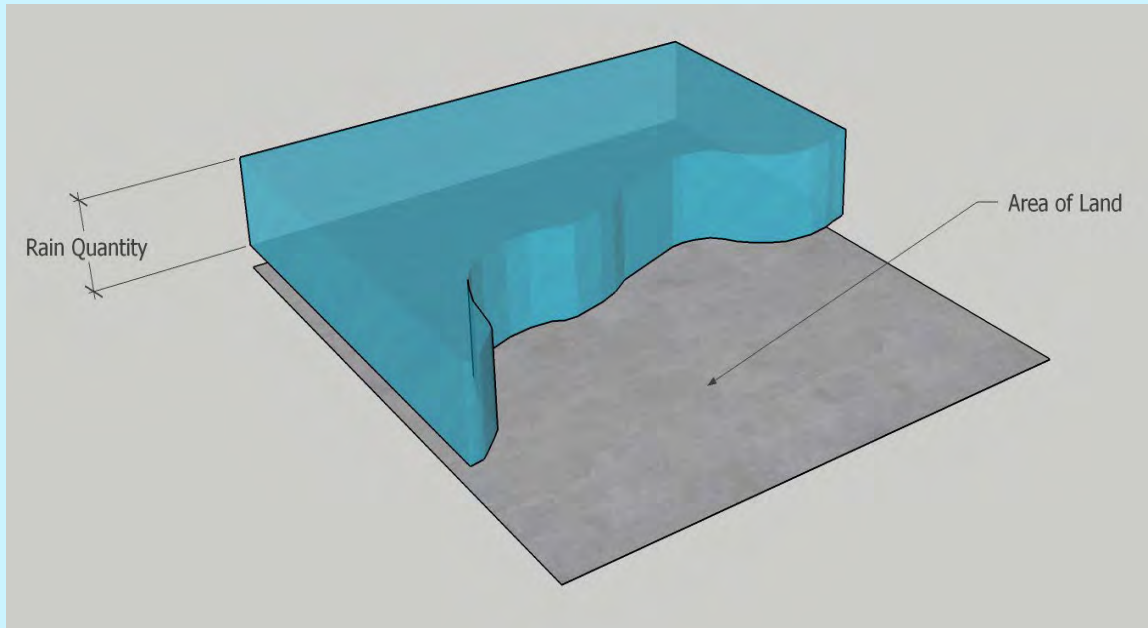


Feaster Charter School Flow Path

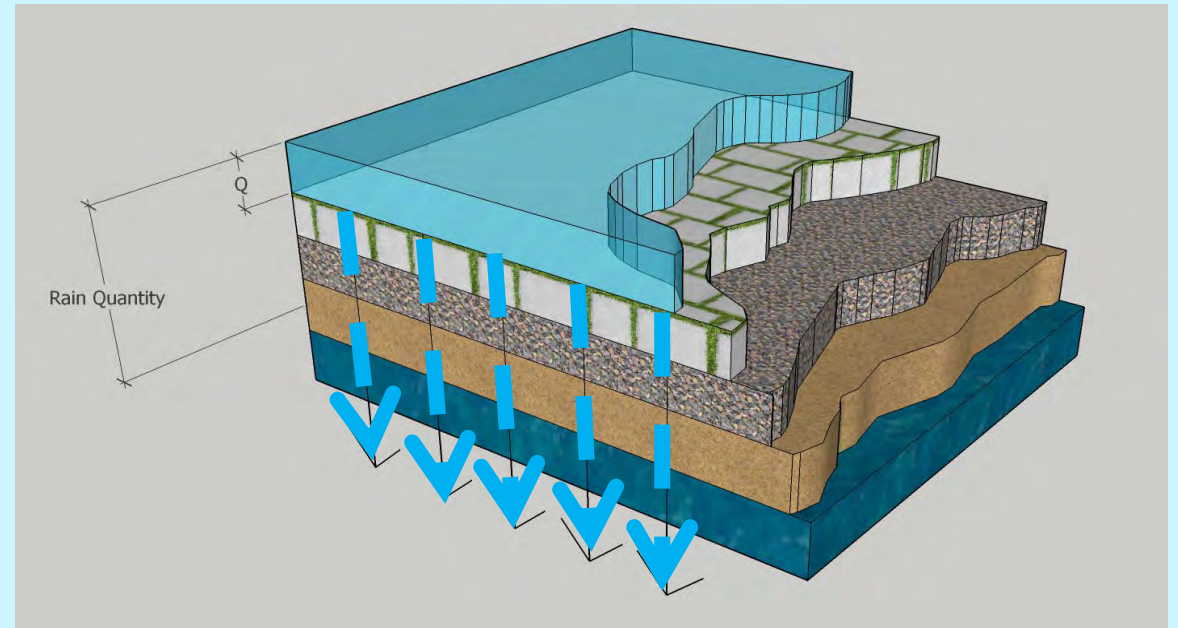


Where does rainwater go?

Impermeable

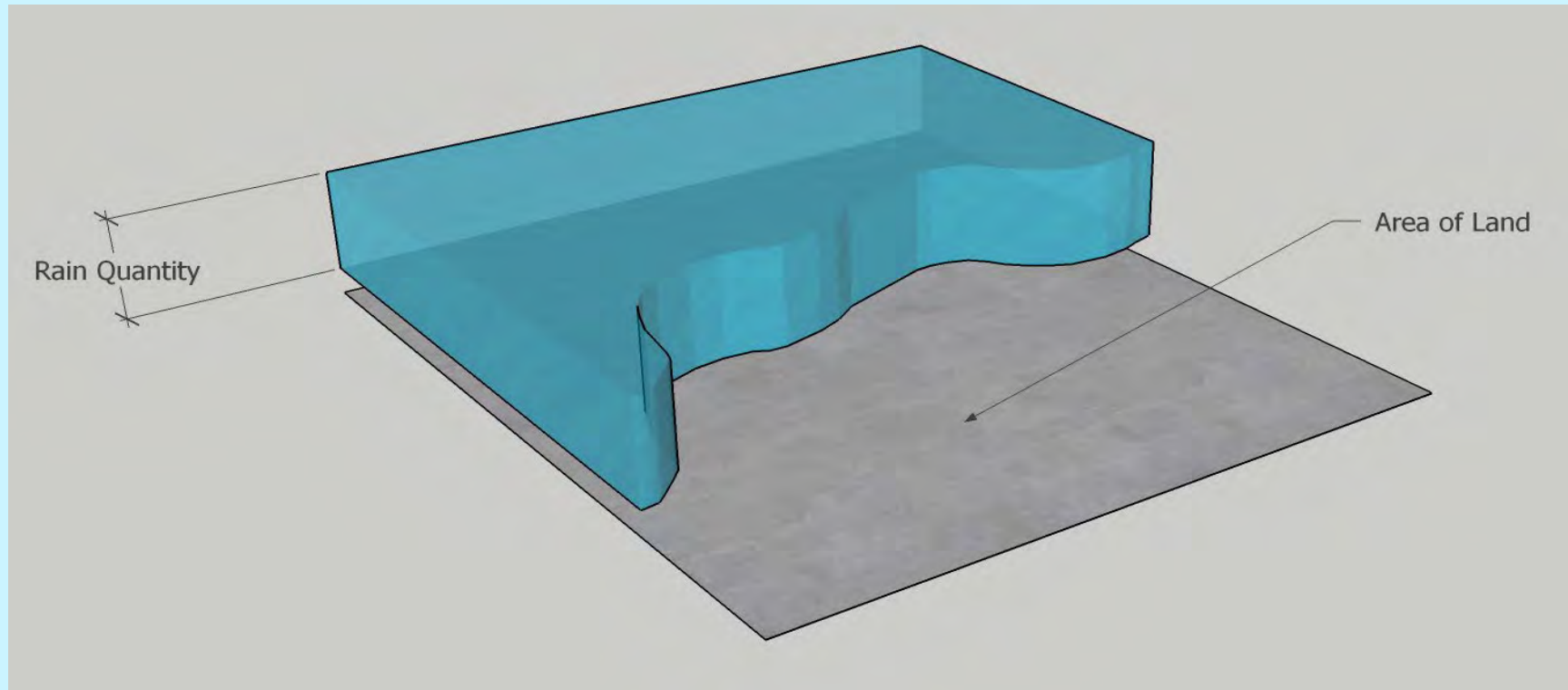


Permeable

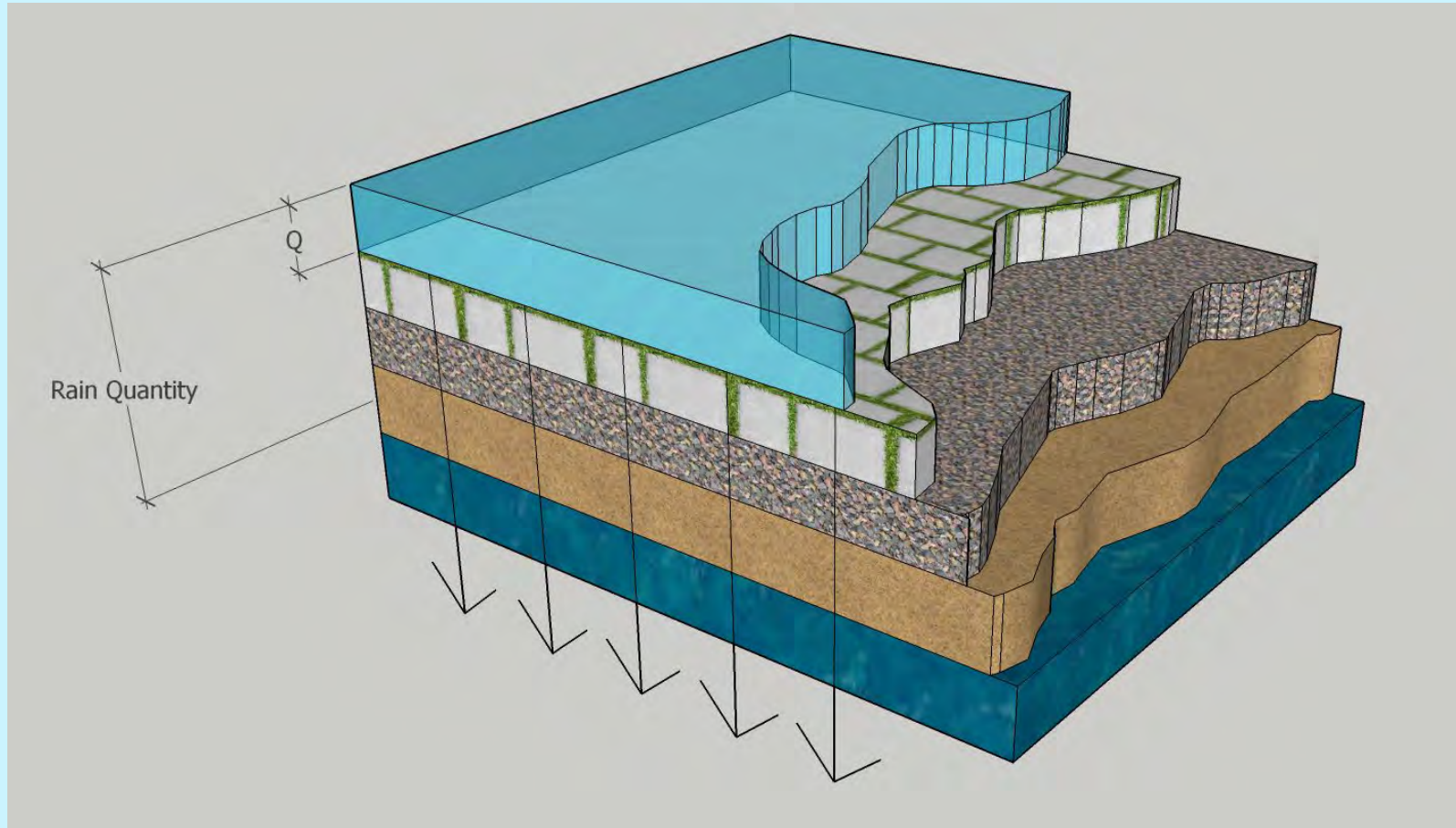


Rainwater Estimated Volume

$$\text{Volume} = \text{Rainwater Quantity} \times \text{Surface Area}$$



Rainwater Estimated Volume





Green
Roofs

Rain Gardens



2011 Beach Park Improvements Featuring Permeable Concrete Pavers

Since 2007, improvements were made to Beach Park to offer many amenities to visitors including a playground, changing room buildings, walking paths and expanded parking. In addition to increased usage of the beach by visitors, geese and seagulls flocked to the sandy shoreline and the sensitive bay was threatened by E. coli contamination.

In 2009, utilizing a grant from the Wisconsin Coastal Management Commission, the Village of Egg Harbor undertook a major improvement project at Beach Park and a remote boat trailer parking lot.

An engineered Biofilter, with shore grasses and other plants, was added - a technique that is used to remove stormwater pollutants by filtering runoff before it reaches the bay. This solution worked to clean up the beach and increase beach visitors. To accommodate the need for additional parking in a space-restricted area that would not produce an increase in stormwater runoff, the Village decided to install **PERMEABLE PAVERS**.

Beach Erosion
caused by
Stormwater
Runoff →



Permeable Pavers

The **Permeable Concrete Pavers** were placed over a sub-base 6-inch layer of 2"-3" aggregate followed by a 4-inch layer of 3/4"-1" aggregate and a 2-inch bedding course of 3/8" aggregate.

Permeable pavers offer an aesthetically pleasing alternative to traditional pavements in low volume areas accommodating seasonal park traffic and pedestrians.

They effectively slow stormwater runoff from the bluff and provide the opportunity to infiltrate the runoff into the underlying sandy soils before it reaches the Bay.

20 additional parking stalls were created, nearly doubling parking capacity. The project has been well received by the community. The permeable pavers are performing as expected and will continue to be monitored.

Because of this successful project and the positive comments by visitors, the Village plans to use the pavers in other applications throughout the Village. Nearly 81% of the cost of the project was covered by a grant received from the Great Lakes Restoration Initiative.

As a result of the stewardship and efforts to promote water quality The Village was awarded the Water Star Community designation by the UW-Extension in 2011, recognizing efforts to improve surface, ground and recreational waters.



PROJECT PARTICIPANTS:

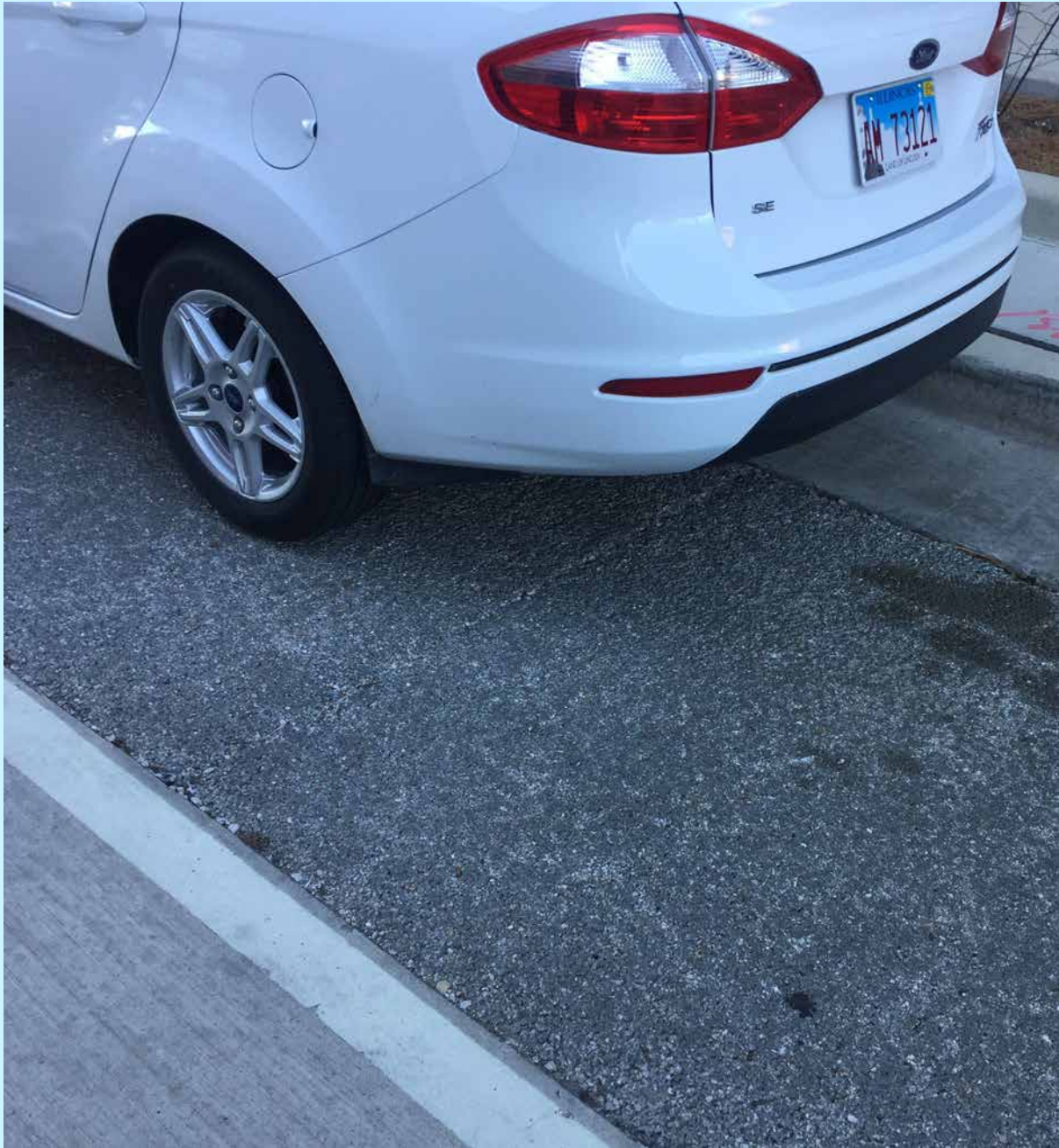
- Village of Egg Harbor
- Door County
- McMAHON
- EPA's Great Lakes Restoration Initiative
- Harbor Construction of Door County, Inc.
- Edgewater Landscaping & Rocks, Inc.
- Northeast Asphalt, Inc.
- Choice Construction, Inc.
- County Materials Corporation

Permeable
paver
blocks



“Grass-Crete”









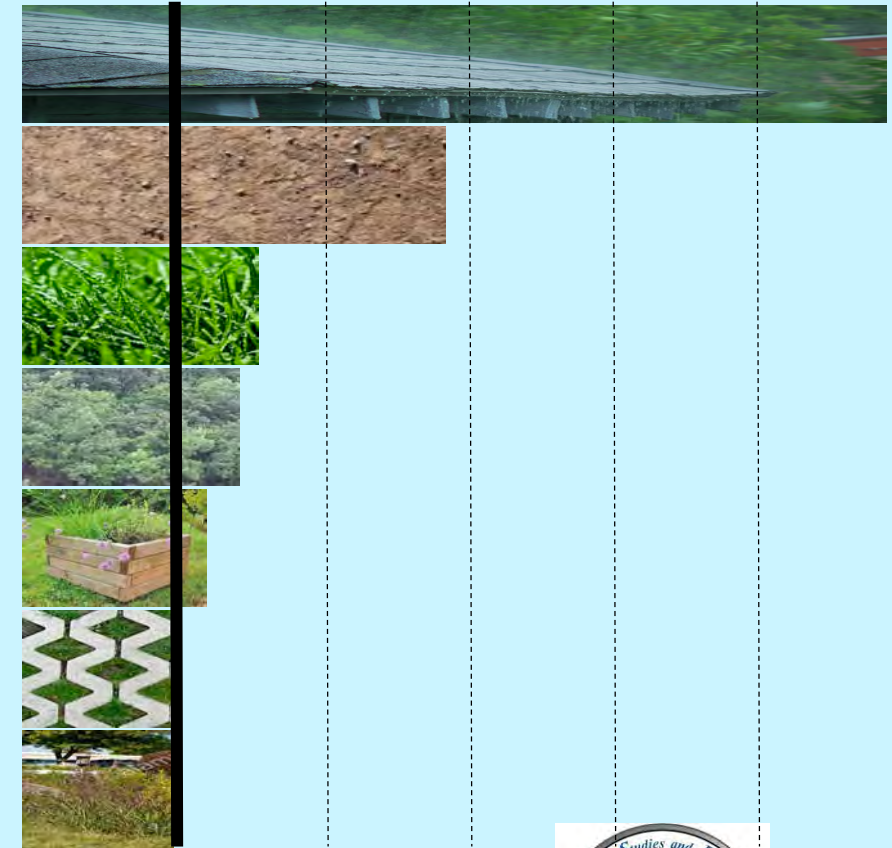


Permeable
Concrete

What's the impact of a square?

Estimated stormwater runoff by landcover type for a 1 inch rainfall event on 100 square feet of land (1 grid square)

Impervious (buildings, pavement, road, water)		49 gallons
Bare earth		18 gallons
Grass/shrub		5 gallons
Trees		4 gallons
Green Roof		2 gallons
Porous Pavement		0 gallons
Swale/rain garden		0 gallons



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