

Serpent® Inflatable Flood Barrier Steamboat Springs, Colorado



SERPENT INFLATABLE FLOOD CONTROL TUBES

The Client:

Steamboat Springs Resort, nestled in the heart of the Rocky Mountains in Colorado, is a premier destination for winter sports enthusiasts and outdoor adventurers. Known for its legendary snow, the resort boasts over 2,900 acres of skiable terrain, catering to all skill levels with 169 diverse trails and 18 chairlifts. The charming, ski-in/ski-out mountain village combines modern amenities with a warm, rustic atmosphere, featuring a variety of lodging options, dining establishments, and boutiques.

The Challenge:

On the Steamboat Springs Resort property, some of the employee housing is located in a low lying area adjacent to the Yampa River. The resort faced a potential flooding challenge after having an above average year of snowfall. The mixture of potential snow melt and proximity to the river was feared to combine to create a flood threat that could detrimentally affect the block of employee housing. During over average snowpack seasons, the overwhelming amount of melting snow can cause already high water levels in rivers to overflow, as there isn't sufficient significant river capacity to handle the volume of water.

Goals:

Garrison Flood Control had several goals in mind for Steamboat Springs' employee housing protection. One of our main goals was to provide a solution that could handle both terrain variation and be quickly and easily deployed. The somewhat uneven ground adjacent to the employee housing and along the river bank required a solution that would best seal against the ground and prevent water seepage underneath the barrier. Additionally, the rapid nature of snow melt flooding required a quick to deploy, easy to position and easy to transport flood barrier option.

CASE STUDY: Serpent® | Steamboat Springs, Colorado

The Solution:

Our solution for the Steamboat Springs employee housing property was Garrison's Serpent® inflatable flood barrier system. This system is constructed from durable, high-strength, welded PVC material. The snake-like tubes are inflated with air, allowing them to be stored deflated but when inflated, they offer up to 40" of flood protection. Their light weight makes them easy to position and sections can be connected to create larger flood berms, using a velcro backed seaming strip that attaches to the ends of two Serpent® flood tubes.

Welded to the inflated flood berm is a 6ft extendable skirting, which is extended beyond the barrier, over the ground below and towards the expected water. This skirting both provides a seal to the ground below and can be staked down to the ground using grommets along the edge of the skirting. This both holds the system down and prepares it for when the water rises onto it, ballasting the entire system and preventing Serpent® flood tubes from floating away due to rising water levels.

Another key advantage to the Serpent® Inflatable Flood Barrier is its ease of transportation and deployment. The flood barrier can be compactly stored and rapidly deployed in about 20 minutes by a small team, eliminating the need for heavy machinery, extensive labor, or a water source. Simple air pumps are used to inflate the Serpent® tubes via the integrated filling valve. For Steamboat Resort, Garrison provided 150ft of Serpent® Flood Barriers, consisting of several 30 ft and 15 ft sections.

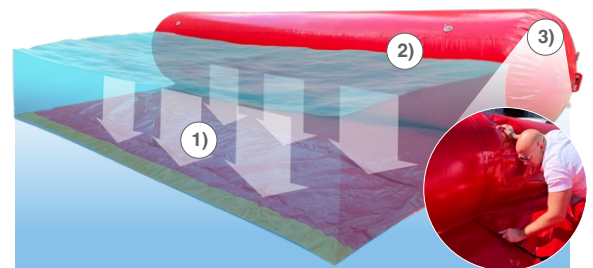
Summary:

Steamboat Springs Resort, located in the heart of the Rocky Mountains in Colorado, is a popular destination for winter sports enthusiasts and outdoor adventurers. Known for its legendary snow and vast skiable terrain, the resort offers a variety of lodging options, dining establishments, and boutiques in its charming ski-in/ski-out mountain village. Because of an over-average snowpack above Steamboat Springs the resort faced a potential flooding at their employee housing complex.

Garrison Flood Control recommended and provided the Serpent® Inflatable Flood Barrier as the solution for Steamboat Springs Resort. Made from durable, high-strength materials, the Serpent® consists of interconnected, snake-like tubes that form a sturdy and robust barrier when inflated, effectively holding back floodwaters and protecting property and infrastructure. One of the key advantages of the Serpent® Inflatable Flood Barrier is its ease of transportation, storage, and deployment, eliminating the need for heavy machinery or extensive labor. Garrison provided over 150 feet of Serpent® Flood Barriers to help safeguard the resort's employee housing, ensuring rapid protection against potential flood threats.

Takeaways:

- Available in 15 ft and 30 ft length tubes, Serpent® can be combined to create longer berms, using an included velcro seaming section.
- A 30 ft length Serpent® barrier can inflate in 12-18 minutes with a standard air pump.
- Because of the need to accommodate uneven ground at the property, the Serpent®, which includes an integrated, extended skirting system was the ideal solution.
- Garrison Flood Control provided over 150 feet of Serpent® Flood Barriers.
- Serpent® stores compactly, deploys quickly and deflates easily, allowing it to be reused for future flooding events.



How Serpent™ Works

1) Pressure Creates Support

Flowing water over the skirt of the Serpent® will create pressure, keeping the Serpent® positioned securely when protecting against flooding.

2) Damming Ability

We recommend damming to within 2" of the top height of the barrier, such that each 40" tall barrier is suitable to protect against floods of roughly 38".

3) Ability to Connect

Serpent® tubes can be fastened together using the velcro tube connector sheet for added protection length.