

# CASE

# STUDY

Vicente Guerrero, Mexico DF  
Axial Flow Pumps



Vicente Guerrero Pumping Station

Flood management always presents both technical and social challenges. Preventive flood risk management requires dependable pumping solutions.

It could be rainy season again in Mexico when tropical storms are hitting the country again at regular intervals. During these events, many waterways and drains could be clogged with solid waste, which does not allow water to freely flow to outlets and pumping stations.

In Mexico City, flood management presents both technical and social challenges. On the technical side, many of the existing pumping stations are old and lack sufficient capacity for even normal rainfall conditions.

Over the past few decades, the city has grown rapidly and the areas around waterways are often densely populated, with dwellings encroaching over the water, affecting waterflow and preventing maintenance and desilting. The social challenges presented are equally complex. Informal settlers are particularly vulnerable to flooding, as a large percentage live in inadequate housing near waterways.

Every flooding event brings back the necessity of a global plan:

- (i) Modernizing Drainage Areas
- (ii) Minimizing Solid Waste in Waterways;
- (iii) Participatory Housing and Resettlement;
- (iv) Project Management and Coordination.

A preventive flood risk management requires dependable pumping solutions. Reliable pumping equipment that operate fault free in a continuous mode during the rain event.



Iztapalapa (Mexico DF). Floods

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For many years, Ciudad de Mexico Water Authority (SACMEX) has developed a flood management plan. This plan includes New StormWater Pumping Stations and the retrofit of few of the old ones.



Vicente Guerrero. Cables

In 2017, with an investment of 543 MDP (~29M USD), **Vicente Guerrero** Project became a reality to face the flood risk in the Iztapalapa area (Mexico City).

During 2013, the Iztapalapa delegation recorded various effects during the rainy season, which caused flooding at different points, so the capital government implemented actions to mitigate the effects. The Government of Mexico City invested 542 million pesos in a collector, lagoon and pumping plant that are part of the **Vicente Guerrero** integral project, in order to avoid flooding in Iztapalapa.

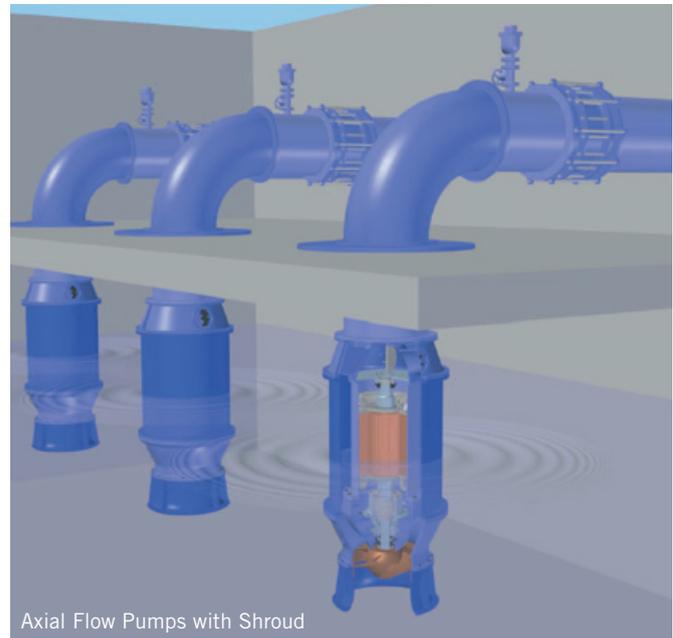
This global project benefits 145 thousand inhabitants of the Iztapalapa delegation during the rainy season. The new pumping plant draws water from the collectors and sends it to the lagoon. This pumping plant that turns out to be an engineering lesson from its design to its construction and due the installation of reliable solutions that keeps the plant working in high intensity rains, during which this work will operate in its entirety.

**Vicente Guerrero** Pumping Station operates with six (6) Indar Submersible Axial Flow Pumps H-700-701+MF-355-8/145, pumping a total flow of 6,000 l/s (137 MGD).

This customized design, tailored for the project needs, is the combination of technical know-how, experience and engineering capabilities and it provides an efficient and robust response to the requirements of

pumping the large volumes.

The pumps with axial flow, single stage and single inlet have opened multi-channel impellers, which allow large free solids going through the pump with no clogging (Big free ball passage). These are heavy-



Axial Flow Pumps with Shroud

duty units specially designed for pumping urban and industrial wastewater and raw water.

Being projected with shroud (H-type Pumps), the cables once outside the unit are protected, preventing these from coming into contact with the pumped water.

Motorpump sets are installed suspended from the discharge piping.

- ①
✋
**Compact Solution**
  - Less Space ●
  - Less Cost of Installation ●
  - Easy Alignment ●
- ②
⚡
**Direct Transmission of Power & Efficiency Improvement vs. Vertical Turbine Pumps**
- ③
⚙️
**Easy maintenance**
- ④
🔊
**Very Low Noise Levels**
  - Perfect Solution Inside Cities ●
- ⑤
🚰
**Avoids Flooding Risks**

Model	Flow (l/s)	Head (m)	Motor Output (kW)	Voltage (V)	Weight (Tn)	Diameter (mm)	Height (mm)
H-700-701+MF-355-8/145	1000	10	170	4160	5.7	1000	2907