**ABSTRACT**

**INTRODUCTION:** Existing conventional modes of transportation of people consists of four unique types: rail, road, water, and air. These modes of transport tend to be either relatively slow (i.e., road and water), expensive (i.e., air), or a combination of relatively slow and expensive (i.e., rail). Hyperloop is a new mode of transport that seeks to change this paradigm by being both fast and inexpensive for people and goods. This is considered as the 5th mode of transportation.

**TECHNOLOGY:** Hyperloop is combination or intermediate Maglev & Airplane it consists of a low pressure tube with capsules that are transported at both low and high speeds throughout the length of the tube. The capsules are supported on a cushion of air formed due to the magnetic levitation, featuring pressurized air and aerodynamic lift. The capsules are accelerated via a magnetic linear accelerator affixed at various stations on the low pressure tube with rotors contained in each capsule. Passengers may enter and exit Hyperloop at stations located either at the ends of the tube, or branches along the tube length.

**COMMUTING TIME:** Generally by road transport it a takes around 5 hr 30 min to travel from Los Angeles and San Francisco and by flight it takes around 1 hr 30 min it is also very expensive, but in Hyperloop the pod is propelled at 700 MPH or 1,123 KPH, the time in which we can reach the destination is 30 Min.

**PROJECT COST:** The total cost of Hyperloop in this analysis is under $6 billion USD. Amortizing this capital cost over 20 years and adding daily operational costs gives a total of about, $20 USD (in current year dollars) plus operating costs per one-way ticket on the passenger Hyperloop.

**ADVANTAGES OF HYPERLOOP TECHNOLOGY:**

* The technology offers very fast speed of transportation which is twice that of aircraft. built
* It has very low power consumption.
* It is low cost transportation system on long run.
* It is resistant to earthquakes.
* It is safe mode of transportation system.

**CHALLENGE’S/DISADVANTAGES OF HYPERLOOP TECHNOLOGY:**

* High speed of capsule (almost at speed of sound) may cause dizziness to the passengers travelling due to vibration and jostling.
* Initial cost of investment to have the system in place is very high. The long vacuum chamber manufacturing requires more technical skills, Moreover this is costly and also risky to maintain.
* Land use rights will be concern for deployment of the project.
* It has very high risk to life when something wrong happens to the system.
* It has limited space in the train and hence people can not move freely.
* As hyperloop uses steel for track, it expands and changes shape whem outside temperature is changed, this may destroy the track of hyperloop technology. Thid needs to be considered while designing, the system based on environment of the location where it is being deployed.
* The installation requires cutting of large number of trees. This leads to environment loss.