CLIMATE CHANGE

**MUMBAI, ASIA**

How can coastal cities like Mumbai better protect their populations from the increased threat of flooding? [Visit site to view full brief >](http://www.citiesforourfuture.com/briefs/climate-change/asia/mumbai)

**ENTRY GUIDELINES**

Use this template to write up your idea before submitting it online via our [entry form](http://www.citiesforourfuture.com/entry), by 31 May 2018. When you upload the form, you can also add up to 5 images, which might include renders, line drawings or technical plans of your idea.

**WHAT WE’RE LOOKING FOR**

Our judges will score your idea on its impact, excitement/originality, scale, relevance and feasibility.

A good submission will be well thought through and written clearly, with supporting research, data or statistics, and images. It will inspire our judges and illustrate how it answers the original brief, along with describing any opportunities there may be for it to work in more than just one city.

**HOW TO COMPLETE THIS DOCUMENT**

Simply fill in the document using the text boxes below including your name, email address and any links to supporting videos or websites. Don’t forget what the judges are looking for, and remember to make it clear how your idea answers the brief. Once you’re finished, save this Word document and visit the [entry form](http://www.citiesforourfuture.com/entry) to upload it alongside any supporting images.

This form is comprised of 3 sections, which must all be completed, in English. If you cannot complete the form in English there is the possibility that your entry will not be judged.

**YOUR SUBMISSION**

**Short answer (50 words)**

*INITIATION-Creation of web based GIS system named as integrated flood assessment model(IFAM) can be used for giving info on all possible levels and area flood inundation extent patterns of flood at any location for different rainfall intensities. ACTION- Construction of underground river facility along the mithi river spanning 1 km in length sending water to massive underground water storage tank which in turns pumps the water into sea..RECOVERY-creation of ATST vehicle reach where infrastructure has been destroyed,C-water, LuminAID .to lighten.*

*The 2005 flood in Mumbai(financial capital of india) which recorded 944 mm of rainfall within 24 hours was regarded the worst regional humanitarian crisis by IFRC causing more than 400 lives and economic loss of over 500 crores. The very first step in tackling the issue is to have a flood risk map.This can be best sort out by integration of flood assessment model(Devoloped on MATLAB) with web based GIS(Devoloped on java)that is web enabled tool ,easy to access and does not require any special softwares at user end.It will provide with the real time dynamic data about rainfall,tidal level ,simulation time.*

*The very next step will be the action plan to improve the drainage structure of Mumbai.This will be accomplished by constructing an underground river facility.An underground rainwater dispersion structure is necessary because of the volume and speed of runoff.*

*It will consist of 5 colossal silos constructed within certain limits of mithi river, connected by six and half kilometre long tunnel that leads to a huge underground storage tanks. When the river water flows it will absorb the excess water that otherwise flood the surrounding area. When silos reach capacity the tunnel sends the water to the downhill storage tanks where it can be kept until the water level in the river start to go downThe storage tank will be connected to 14,000 HP jet turbines and 78 pumps which will have the potential to pump out 200t of water per seconds back to river which will be dispersed into Arabian sea. The storage tank will be constructed in chembur the most low-lying area in Mumbai metropolitan.The tunnel will forms network connecting districts saki naka,kurla,mankhurd,govandi,andheri and chembur.Tunnel will be bored using the shield method to avoid distortion due to its depth. Water tightness is maintained within the tunnel with the help of internal pressure reacting segments. This construction will be economically feasible and can reduce the impact of flooding by two –third as well as helpful in preventing the floodwater to get polluted by sewage water .*

*Technical specifications:*

*5 silos-65m height-32cm dia*

*Tunnel -10.6 dia-.5 km length-50 m underground passing through silos.*

*Water storage tank-25.4m height-177 m length-supported by 60 pillars-20m tall*

*14,0000 hp turbines and 78 pumps.*

*Control rooms within storage tanks and tunnels.*

*Moreover,elevated construction of foundation of building with use of carbon nanotubes can be done to improve the strength by weight ratio in coastal communities.this will prevent the risk of collapse of buildings.*

*RECOVERY PHASE: To deal with one third of remaining flood affected victims various innovative technology can be implemented:*

*C-water:is a desalination product that uses the solar power to make water.It evaporates sewage,saltwaterand other watery objects by the use of het generated from sunlight.It is applicable to wetland,beaches ,sewage.It is space saving ,easily transporatable.Thus,it will prevent infection from water borne disease during floods.*

*LuminAID:It is a solar light designed solution to fulfill a basic need in post natural disaster situation.A solar powered infalatable LED’s that is waterproof and floats,which makes air distribution easy and can provide light for upto three years without replacements.*

**Long answer (up to 500 words)**

**Web links to any supporting work (optional)**

For example, you may want to include a link to a video as part of your submission, or make reference to a website regarding your idea. If so, please put the full URL here. If you have images, they can be uploaded on the website when you upload this form.

[www.**iit**b.ac.in/en/research-highlight/**gis-based-flood-assessment**](http://www.iitb.ac.in/en/research-highlight/gis-based-flood-assessment)

http://www.water-technology.net/projects/g-cans-project-tokyo-japan/

[*https://entrepreneurship.columbia.edu/startup/luminaid/*](https://entrepreneurship.columbia.edu/startup/luminaid/)

*http://scientistinfos.blogspot.in/2013/01/the-all-terrain-solar-trailer-atst.html*

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**Are you part of a team?**

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