



## City Inputs on Flood Management Efforts

Surat Municipal Corporation

# Background



**8<sup>th</sup> Largest City**

4.46 million  
(2011 census)  
**6 million**  
(current estimates)



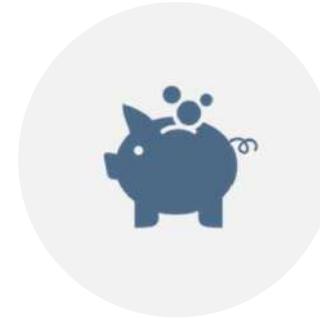
**462.149 sq.km**

Area  
under  
jurisdiction



**Fastest Growing  
City Globally**

Oxford Economic's  
Global Cities 2030 Report



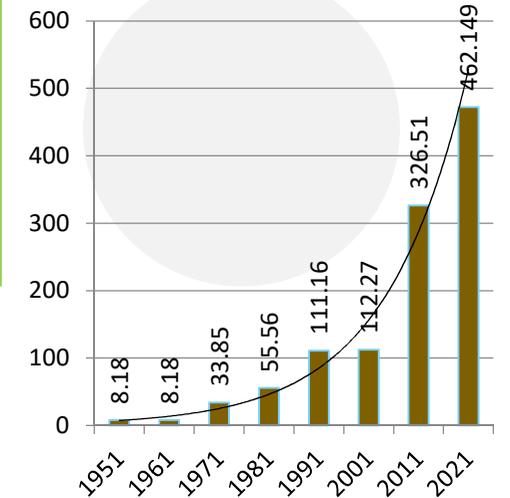
**Economic Capital  
of Gujarat**

Hub of Diamond &  
Textile Industries

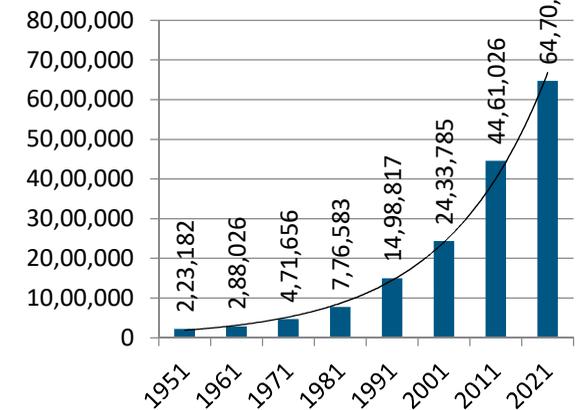


- Surat dates back to 300 BC
- Municipality Established in 1852
- Municipal Corporation Formed in 1966
- Hazira Industrial Estate near the City
- An Environment with Peace, Alliance & Unity
- Admin Zones : 9
- Election Wards : 30

**Area (Sq.km)**



**Population**



# Surat also known as...



Diamond City

9/10 Diamonds in the world are cut and polished in Surat

40% of nations total man-made fabric & 28% of nation's total man-made fiber production

Textile City



Bridge City

Over 115 bridges to ease commute

Declared as SOLAR CITY by Ministry of New & Renewable Energy

Solar City



Green City

Over 200 public parks & gardens along with Nature Park & upcoming Biodiversity Park

Clean City

# CHALLENGES FACED

## (UNSUSTAINABLE GROWTH)

### CITY EPICENTER OF GROWTH

- ULB First Line Responders in crisis response, recovery and rebuilding
- Access to Adequate Housing

### FALL IN ECONOMIC ACTIVITIES

- Employment Decline
- Decline in Trade
- Disruption of Supply Chain
- Pandemic Induced Income Shock

### SOCIAL IMPACT

- Labour Migration, Sustenance
- Forced Displacement
- Mobility Impact
- Compounding Inequalities
- Education Closure & Altered Lives of Children

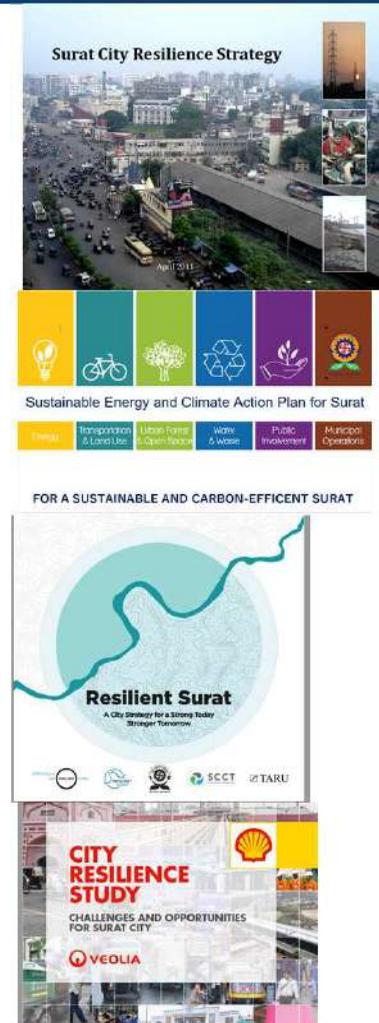
### GREEN NEW DEAL DEMAND

- Green Expectations
- ICT to Minimise Disruption
- Human Rights Resilience

# SOLUTIONS @ SURAT

(Sustainable Development for Local Economic & Social Development)

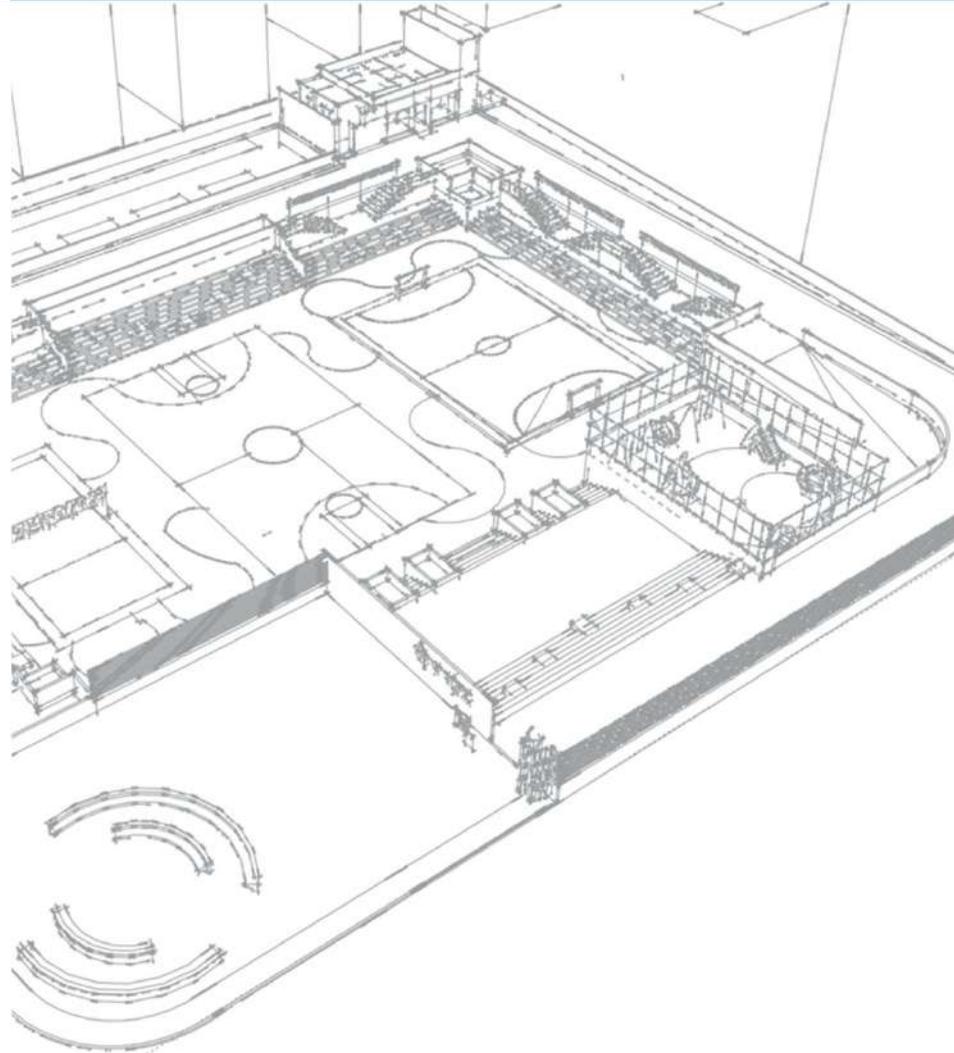
1. India's largest BRTS
2. 115 MLD Tertiary Treated Water
3. WTPs with ZLD
4. Cycle and pedestrian friendly street designs
5. Diamond and Textile industries management
6. Labor migration plan
7. Closure of land-fill site at Khajod
8. Surat Diamond Bourse
9. Course design on sustainable transportation
10. Weir-cum-causeway
11. Metro Rail
12. Water Plaza – Khel Kund
13. Tapi Riverfront Development
14. Barrage



- Social Harmony – serving the most marginalised
- Promote urban compactness, resist de-densification
- Improved air quality & drop in water pollution

# WATER PLAZA- SURAT ROTTERDAM PARTNERSHIP

(Innovative solution for Water Resilience and Sustainable Development)



खेल कुंड

PROJECT BY:



SURAT MUNICIPAL CORPORATION



1. Water Harvesting Roofscapes (Blue, Green, Yellow)
2. Water Plaza Inspired Structure
3. Water Treatment
4. Flood Forecasting Modeling
5. Water Quality Monitoring

# Water Plaza is “Khel Kund”

## WHAT

खेल कुंड are sunken plazas at strategic sites in the City. During Monsoons/ rains, these Kunds will act as water reservoirs until water percolates into percolation wells. This will improve ground water table conditions.

Remaining part of the year these खेल कुंड will be used as activity plazas, sports court and recreation grounds for the neighbourhood.

During Festivities, These Kund serve as artificial ponds for emersions of idols and offerings, thus, saving river pollution.

Average depths: 1.5mts -2.5 mts

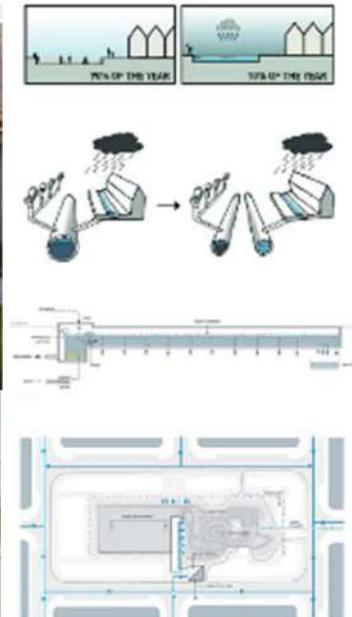
## WHY

1. IDOL IMMERSION AND RITUALS
2. WATER HARVESTING
3. SOCIAL COHESION
4. FLOOD RESILIENCE

Proposed



Current





# Replication

DETAILS OF THE ARTIFICIAL PONDS IN SURAT MUNICIPAL CORPORATION - 2017					
SR NO	NAME OF ZONE	LOCATION OF ARTIFICIAL PONDS	SITE OF ARTIFICIAL POND	CAPACITY OF ARTIFICIAL POND(IN LITRES)	NO. OF IDOLS IMMERSION 2017
1	ATHWA ZONE	DUMAS, KANDI FALIYA	55 X 10 X 2	11,00,000	3200
2			19 X 7.3 X 2	2,84,700	2894
3			8 X 5.8 X 2	92,800	2514
4		T.P.S.NO.29 (RUNDH-VESU-MAGDALLA) F.P.NO. 106, Y-JUNCTION, UDHNA MAGDALLA ROAD	40 X 15 X 2.5	15,00,000	1645
5	CENTRAL ZONE	AT DAKKA OVARA, B/S MERITIME BOARD OFFICE, B/H GANDHI BAUG, CHOWK BAJAR	45 X 15 X 2	16,87,500	793
6		AT DAKKA OVARA, B/S MERITIME BOARD OFFICE, B/H GANDHI BAUG, CHOWK BAJAR(NEW PROPOSAL)	30 X 20 X 2	12,00,000	3508
7	VARACHHA ZONE	T.P.S.NO.21(SARTHANA-SIMADA)F.P.NO.98, NEAR HAREKRISHNA DIAMOND EXPORT, SIMADA	34 X 8 X 2.5	6,80,000	6621
8			15 X 4 X 2.5	1,50,000	
9			34 X 8 X 2.5	6,80,000	2910
10		NANA VARACHHA OVARA, B/H RAMJI MANDIR(NEW PROPOSAL)	18 X 8 X 2.5	5,62,500	5094
11		T.P.S.NO.24 (MOTA VARACHHA-UTRAN) F.P.NO.193, RAM CHOWK.OPP. GOKULDHAM ROW HOUSE, MOTA VARACHHA(NEW PROPOSAL)	35 X 10 X 2	7,00,000	932
12	LIMBAYAT ZONE	T.P.S.NO.41 (DINDOLI) F.P.NO.M0-46 (RECREATION FOR S.M.C)	50 X 15 X 2.5	18,75,000	12146
13	UDHNA ZONE	T.P.S.NO.22 (BHESTAN) F.P.NO. 71 EWS AWAS, NEAR SARSWATI COLONY	60 X 25 X 2.5	37,50,000	2335
14		T.P.S.NO.6 (MAJURA-KATODRA) F.P.NO.235 OLD SUB-JAIL PLACE, RING ROAD(NEW PROPOSAL)	40 X 15 X 2.4	14,40,000	2122

SR NO	NAME OF ZONE	LOCATION OF ARTIFICIAL PONDS	SITE OF ARTIFICIAL POND	CAPACITY OF ARTIFICIAL POND(IN LITRES)	NO. OF IDOLS IMMERSION 2018
15	RANDER ZONE	T.P.S.NO.74(PAL) F.P.NO.2, PAL HAZIRA ROAD, NEAR NEW R.T.O. OFFICE	50 X 15 X 2	15,00,000	3260
16		RAMJI MANDIR OVARA, PAL(NEW PROPOSAL)	25 X 15 X 2	7,50,000	1438
17		T.P.S.NO.46 (JAHANGIRPURA) F.P.NO.86,87, OPP. ISCON MANDIR, JAHANGIRPURA(NEW PROPOSAL)	30 X 15 X 2	9,00,000	946
18	KATARGAM ZONE	H-04, B/H KOSAD AWAS NEAR HEALTH CENTRE (NEAR NAVA VISTAR-AMROLI, KOSAD,CHHAPRA BHATHA, UTRAN)	50 X 15 X 2.5	18,75,000	3524
19		T.P.S.NO.25(SINGANPORE) F.P.NO. 110, NEAR CAUSEWAY( NAVA VISTAR- KATARGHAM, FULPADA, VED, DABHOLI, SINGANPORE)	50 X 15 X 2.5	18,75,000	4287
20		T.P.S.NO.26(SINGANPORE) F.P.NO. 210, R-16, NEAR VANZARA VAS OVARA( NEW PROPOSAL)	25 X 15 X 2.5	9,37,500	1431
21		T.P.S.NO.27, F.P.NO.182, MANISHA GARNALA, OPP. PAY & USE TOILET BLOCK , BELOW BRIDGE (NEW PROPOSAL)	30 X 15 X 2.5	11,25,000	935
22		T.P.S.NO.19, F.P.NO.199, LANKA VIJAY OVARA , OPP. KATARGAM WATER WORKS (NEW PROPOSAL)	25 X 10 X 2.5	6,25,000	1898
				TOTAL	64433



# Lesson learned

(NON-INCLUSIVE GROWTH IS UN-SUSTAINABLE, LEARNINGS FROM CITIES PAYS)

- **Major Cases in urban areas**

- Exacerbate the vulnerability
- Affordable Housing and slum up-gradation
- Equitable access to health
- Green Urban Future is possible

- **Accelerated Digitization**

- Remote Work
- Virtual Delivery of Essential Services
- Tele-medicine

- **Effective urban services**

- Water, sanitation, waste collection and electricity
- Linear to circular economy
- Inclusive urban future is necessary

- **Rethink & Transform surat**

- Society is capable of near-overnight transformation
- Collaboration with Local Actors
- Power of communities

- **Innovative Solutions**

- Engage response leaders
- Develop multi-hazard resilience plan
- Invest in care-economy

- **Economic implications**

- Focus on quick fixes worsen and entrench impacts
- Informal & low paying jobs
- Accountability & Transparency



Thank You

[www.suratmunicipal.gov.in](http://www.suratmunicipal.gov.in)  
[www.suratsmartcity.com](http://www.suratsmartcity.com)