Development of Grand Canal Corridor in Pondicherry

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Abstract: **The study talks about the Cultural Landscape - The Grand Canal at Pondicherry, initial design and development of the 3.4 km long corridor as a stormwater drain which is in usage for centuries. The canal separated French town from Black town, that evolved over a period of time with around 1,195 Heritage structures across the corridor. The canal got converted into a open sewer and exposed to various destruction and vandalism. This paper talks about the assessing the corridor and creating guidelines for development of the Grand canal corridor in Pondicherry as a Flexible outdoor space that accommodates various public activities.**

Keywords: **Urban landscape design, Urban design, Streetscapes, Green corridor, Canal front development.**

1. Introduction

A. Inception About the Site

Fig. 1. Location of Pondicherry in India Map

The Grand Canal runs through the Boulevards of Puducherry, dividing the White and Black Town. The canal was initially constructed by 1709 – 1765 from Uppar, a tributary of Gingee river by French to regulates the stormwater and address the excessive run off water during the time of heavy floods and rain and drain it into the sea. Grand canal has another canal Petit running perpendicular and intersects Grand canal at Ambour Salai. The Canal demarcates the native population from the colonial settlements. The canal is running along the boulevard from South to North, connecting with every street in the grid layout plan of the town. South of the Canal is connected to Thengaithittu Estuary through Ariyankuppam River and North of the Canal is connected to Kuruchikuppam and drains into the sea. In addition, the French developed this canal to carry excess stormwater into sea. This type of canal is referred as Inundation canal which will not have water throughout the year. The spaces associated with this canal are dynamic and can have various visual characters and space functions in different time period in a year.
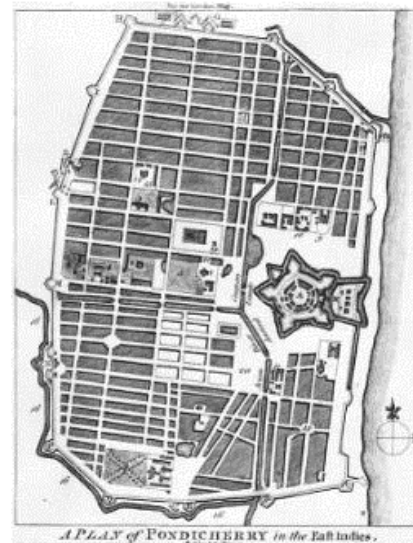

Fig. 2. Old map of Pondicherry
Image available at https://www.rduvert.fr/

B. Grand Canal as a Cultural Landscape

The canal was considered as a boundary which differentiated Black town and white town in the past, but currently the zone has high potential to be re-invented as a public space where people from both sides of city can come and socialize with Integrity. Values Associated with the Cultural landscape are of Historical, Heritage, social and Recreational Values

C. History

In the Precolonial times, the village of Puducherry was known for fishing and farming, with rich water resources with many tributaries flowing through and sea water. In local language the place is called as Vedapuri, which refers to an ancient learning place. In subsequent centuries, the land of

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Poduke ruled by various rulers which includes Cholas, Pandiyas, Pallavas, Vijayanagara, and Mughal rulers. During the reign of Cholas, the city was renamed as "Puducherry" which means a "New town" in Tamil. The French name "Pondicherry" was created by wrong pronunciation of the word Puducherry, and in 2005 the Government changed its name to "Puducherry". (Source: Hindu Legends, INTACH 2008,2010)

D. Colonization of Puducherry

Puducherry was rediscovered by Portuguese in 1521, they were into trade with local population. They were followed by Danes and the Dutch. The Danes built a factory in 1624, which was took over by French in 1673. Global powers fought over Puducherry as they were attracted by the healthy climate, a strategic position, a profitable local textile industry. By the starting of 18th century, the factory had been developed in a prominent fortified town with a fort on current location of Government Square. Between 1706 – 1735, the town improved considerably with fortification of city with walls, widening of streets, erection of new residential units and a court justice was constructed. As a result of French Revolutions, which explores more about Liberty, Equality, Brotherhood has made the influence of religion to be found very less in Politics of Puducherry during the rule of French. Absence of French lower classes in Colony, as the colonies are only occupied by High Class and middle class, who are capable holding designations to operate and rule. French India sourced cheap labours from native population.

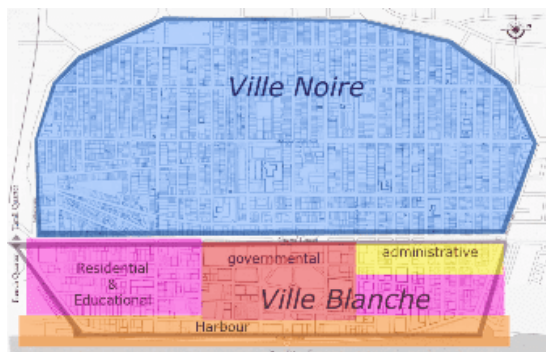### E. Villa Noire and Villa Blanche

Fig. 3. Classification of French town and Black Town
Image Source: INTACH, Auroville

Pondicherry became a port of call for ships going from France to Indochina and vice versa. This position was further enhanced by the opening of the Suez Canal in 1869. This new role influenced the lay-out of the city: all harbour related buildings were constructed close to the sea and the harbour. The administrative buildings were located within a kilometre of the shore, just far enough to protect them from a sudden naval attack. In this lay-out the residential and educational buildings were pushed to the south side of town. By the end of the 19th century Pondicherry stopped expanding, there was no need to go past the boulevard limits that had encircled the town for over a century. Within about 100 years the complete town had been rebuild, nearly all buildings in the Ville Blanche were in the same building style, in the Ville Noire nearly all buildings were

in traditional Tamil building style, with a few exceptions in the form of Christian churches and some buildings with French influences.

F. Built-Heritage of Pondicherry

Puducherry has broad presence of Historic – Geographic Colonial Heritage. The first listing heritage rich building was published by INTACH in 1995 in which they counted 1807 heritage buildings (1,507 in the Villa Noire – Tamil part of town and 300 in Villa Blanche - Colonial part of town), whereas in 2003 there were only 1,195 buildings left (916 in Villa Noire and 270 in Villa Blanche). INTACH limits itself to proper buildings within the city limits only. This means that statues and parks in the city centre and anything outside the city centre is not listed.
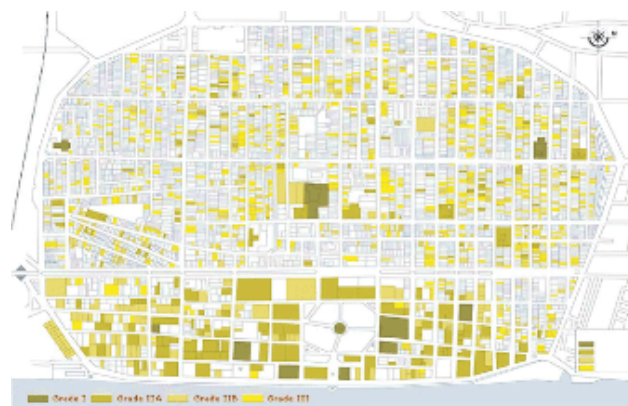

Fig. 4. Mapping of Heritage Structures in Pondicherry
Image Source: INTACH, Auroville

The map shows the buildings that are considered as "heritage" by the organisation. INTACH recognises three grades of heritage:

- Grade I: Buildings of national and historic importance, INTACH describes these as the prime landmarks of Puducherry.
- Grade II: Buildings of regional or local importance, these buildings are less important than Grade I buildings, but they do possess traits that make them contribute to the image and identity of the town. This category contains a lot of buildings that are prime examples of a specific architectural style.
- Grade III: These buildings are important to the overall image of the townscape. Individually these buildings often hold little relevance, but they set the scene of the town. Source: INTACH, Auroville 2004.

G. Evolution of the Canal Corridor

In 1654, Dutch established a factory, along the shore with few settlements of residences as colony.

Fig. 5. Map of Puducherry in 1705
Image available at https://www.rduvert.fr/

In 1705, with settlements near factory established during Dutch Period.

Fig. 6. Map of Puducherry in 1741
Image available at https://www.rduvert.fr/

In 1741, Water channel for moat around the fort along the corridor from South to North.

In 1765, a proper canal was built by French India, which mainly used for draining water along the settlements and for irrigations purpose. This Canal was locally called as "Periya Vaykkal"

Fig. 7. Canal in 1765
Image available at https://www.rduvert.fr/

Below map shows the condition of canal in 1778, draining excessive rains and floods.

Fig. 8. Map of Puducherry in 1778
Image available at https://www.rduvert.fr/

In 1835, people used the canal of various agricultural activities and from the photo below, we can clearly understand the difference in Architectural style of both sides of Villa Noire and Villa Blanche.

Fig. 9. Canal edges in 1835
Image available at https://www.rduvert.fr/

In 1931, the French Town the buildings are in European style adapted to a tropical climate, whereas in the Tamil Town area they are in the local vernacular. While maintaining their individual identities, the two styles have influenced one another, evolving into a synthesis: Franco-Tamil architecture.
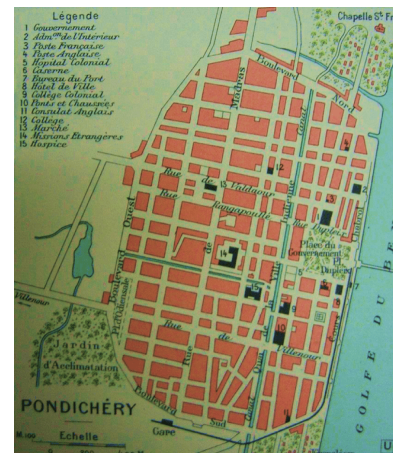

Fig. 10. Map of Puducherry in 1931
Image available at https://www.rduvert.fr/

2020 - The Grand canal is highly polluted due to improper waste disposal plan and operating methods of the neighbouring

residential and commercial structures. Even few residences have connected the water closets outlets with the canal and allowing the grey and black water to drain into the canal. The zone comes under the major potential rich city centre in Puducherry, which can be made into a landscape that supports pedestrian with needful infrastructure, pollution control and management, micro climate optimizations and modifications

Fig. 11. Map of Puducherry in 1931
Source: Author

H.   1.8 Typology of Canal Based on Various Attributes

A canal is an artificial waterway engineered for drainage movement or to convey water from rivers, reservoirs for several purposes such as power generation, navigation, irrigation, etc. Origin of canals traces back to ancient civilisations of Mesopotamia around 4000BC, where there used canals for Irrigation purposes. Historically canals were of immense importance to commerce and the development, growth and vitality of a civilization.

Based on the nature of supply source, Grand Canal is an Inundation canal. Inundation canal is a type of canal in which water is available only during the flood periods. These types of canals are taken off from rivers to control the water level in rivers during floods. A canal head regulator is provided to regulate the flow into the canal.

Based on functions, the canal can be called as Irrigation canal, Navigation Canal, feeder canal in historical times when the canal was widely used for Irrigation purpose and accommodated streaming of boats

Based on the Surface of canal, Grand canal is a Rigid Surface canal, where the surface is completely paved. Based on type of Canal Alignment, Grand Canal is Side Sloped Canal which is made with Cement – Concrete lining, to resist the rate of flow of water through its bed.

I.   French inspired Colonial Landscapes of Pondicherry

A portion of France still exists in India through French Quarter in Pondicherry, which has a history of being acquired and colonised by the French to set up a trading centre. Pondicherry had been passed on to multiple colonial powers of Dutch, Portuguese, English, but predominantly French.

City has lot of Boulevard streets with huge trees with wide spread canopy covers and linear arrangement of planting. Stones are preferably used for pavements. More pedestrian friendly streets can be found along French colony. Presence of Ambient pastel colours around the street facades.

The colonial style French streets have huge compounds and grand walls. French street design always infuses with neighbouring buildings and structure and act as an extension.

French landscape was mainly inspired from Italian Renaissance Garden and was mainly aimed for creating visually appealing gardens. They focused more on symmetry and geometrical shapes. Major Components of French Style Gardens are:

- Parterre - A parterre is a part of a formal garden constructed on a level substrate, consisting of symmetrical patterns, made up by plant beds, low hedges or coloured gravels, which are separated and connected by paths. The view of it from inside the house, especially from the upper floors, was a major consideration in its design.
- Embroidery - Parterre with Curling planting bed and ornamental gravels. Usually created by cutting organic forms and shapes in a lawn and filling that with coloured gravel.
- Topiary - Topiary are Trees, shrubs, bushes which are trimmed into ornamental shapes and forms. In French style landscape they are trimmed into geometric forms. The plants used in topiary are evergreen, mostly woody, have small leaves or needles, produce dense foliage, and have compact and columnar growth habits.
- Bosquet - A bosquet is a formal plantation of trees in a wide variety of forms, some open at the bottom and others not. At a minimum a bosquet can be five trees of identical species planted or set in strict regularity as to rank and file, so that the trunks line up as one passes along either face.
- Allee - Feature of the French formal garden that was both a promenade and an extension of the view. It either ended in a terminal feature, such as a garden temple, or extended into apparent infinity at the horizon.
- Patte D'Oie - The French term Patte D 'Oie, in English sometimes referred to as a Crow's foot. Design whereby three, four, or five or more straight roads or paths radiate out from a central point, so called from its resemblance to a Goose's foot.

Major elements in French style Streets are Awnings extending into Street, Goose Foot Avenues, Outdoor shops on walkways, Street Attractions like statues and water features, Pastel Coloured Streets, Boulevard Streets, Unique Art and Architecture of Facades, Long and Straight roads and Street Furnishings.

Major Elements in French outdoor spaces are Concrete Balustrades, Simple minimal Seating (usually made from cast iron and wood), Water Fountains, Stone Gravel floor, Birdbaths, Trellises, French Style columns, Glazed ceramic pot, Statues.

2. 2. Site Delineation Along the Grand Canal Corridor

A.   Overview of the Canal Corridor

The stretch of the Grand Canal is 3.4 KM (from Thengaithittu

Estuary in south to Kurichikuppam in north). The corridor has a road width that varies from 7 meters to 9 meters from North to South of the Corridor.

There are 18 crossing junctions along the Grand Canal Corridor, in which 9 junctions are bridges and 1 junction has a railway crossing, 1 junction has a damaged bridge which makes it only usable for pedestrian.

B. Delineations of Zones Along the Corridor of Grand Canal

The corridor has been delineated into 8 Zones based on the availability of infrastructure, open spaces, outdoor activities associated with the zones, imageability of zones.
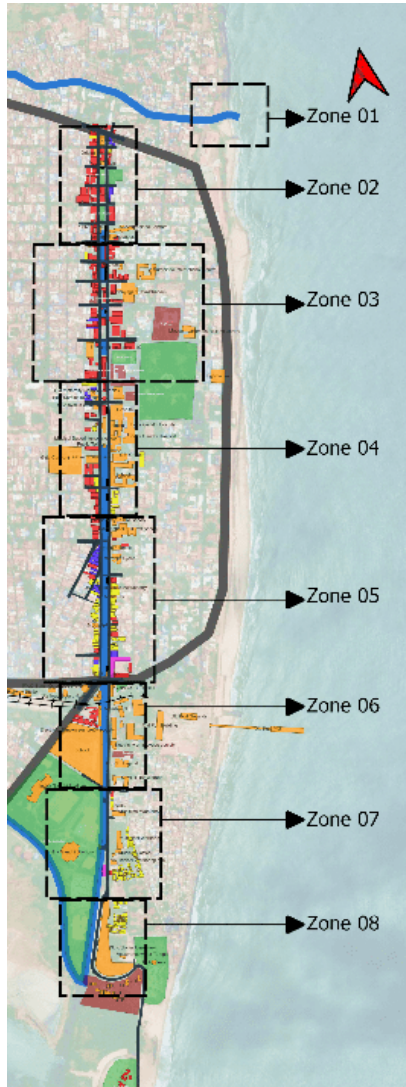

Fig. 12. Delineation of Zones using QGIS along the Grand Canal corridor in Puducherry (Source: Author)

- Zone 01: Canal joins the Sea, near Kurchikuppam at North of Sardar Patel Road It has a bridge constructed in 1940.
- Zone 02: It has nodes with high traffic congestion with more commercial footprints. This zone has lack of proper Pedestrian infrastructure. In this zone, canal is covered with Playground and buildings where they have provided chambers under the structures for

filtration of stormwater.
- Zone 03: Nodes with high traffic congestion. More spiritual centers and tourism-based shops. Lack of pedestrian infrastructure and more encroachments on road and walkways.
- Zone 04: Presence of more Instuitional and Administration buildings are found in this zone. Canal is covered with parking, shops and public toilets. Stretch of open canal starts from this zone.
- Zone 05: Presence of more residential units. Less commercial footprints. Has Good Pedestrian Infrastructure. Lack of street furnishings and furniture.
- Zone 06: Waste management issues. Encroachment on roads. Lack of Visual character. Intersects with Railway lanes. Outer Ring Road of White Town. This road is used to shift the tourist attraction towards southern creek
- Zone 07: Sports oriented outdoor spaces can be developed. This road is used to shift the tourist attraction towards southern creek. More availability of municipal grounds.
- Zone 08: It has a colonial cemetery. Availability of municipal grounds. Less visual connection with the canal.

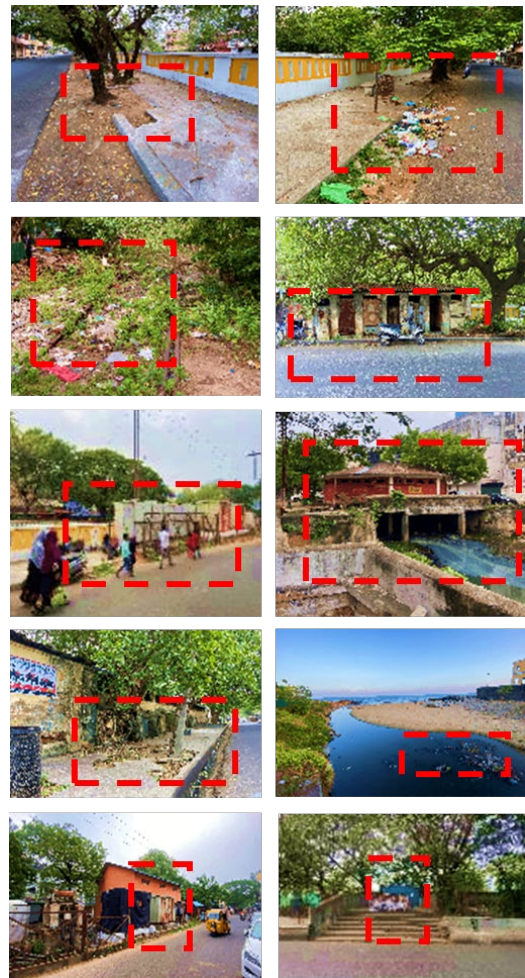### C. Issues Along the Grand Canal Corridor

Fig. 13. Various issues along the Corridor (Source: Author)

- Disposal of Water into the canal results in degrading the quality of water that enters the sea.
- Presence of many danger spaces like Transformers, in the walkway along the corridor of Gingee Salai.
- Vandalism imposed on public infrastructures which include public toilets, walkways, lamp posts, street furnishings.
- Lack of Universal design features like tactile pavement, ramps. Only few spots have ramps for accessibility.
- Improper solid waste disposal. Presence of dustbins can be seen along the stretch. No provision for classifying the disposal in few spots.
- Lack of Pedestrian supporting infrastructure and furnishing in Zones 1,2,6,7. Encroachment on walkways are observed in this zone.

D. Topography of the Grand Canal Corridor

The city of Pondicherry was strategically development on considering the elevation profile of the city. The place where the Dutch fort was located, currently that space is used by The Secretariat of Pondicherry is the highly elevated area from where, the drains pattern is towards North and South creek from centre point in Ambour salai where it meets with petite canal.
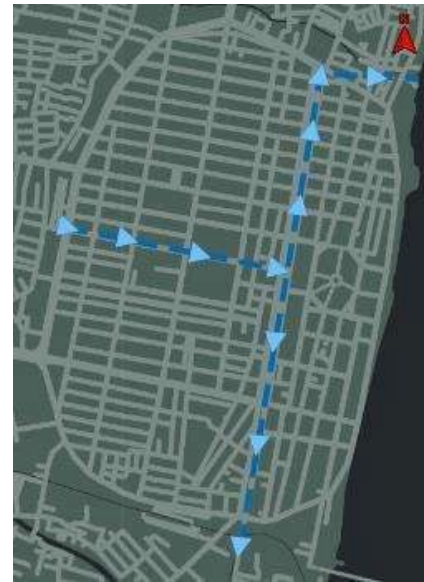

Fig. 14. Contour Map of Pondicherry
Image retrieved from Contour Map Generator (Source: Author)

Fig. 15. Drain Pattern of Old settlement of Pondicherry (Source: Author)

E. Assessment of Zones Along the Grand Canal Corridor

All the zones along the corridor are observed and assessed based upon few parameters such as Pedestrian infrastructure, Universal Accessibility, availability of street furnishings, Public Art forms, Encroachments and presence of proper lighting, vegetation, danger spaces.

By assessing the zones, based on the condition each zone scores are provided for the zones, which defines the area of site that needs more priority.

By considering the overall assessment scores, the zones are categorized into Good, Moderate, Poor in terms of infrastructure available. Understanding the condition of zones helps in prioritizing the zones that need immediate attention for development.

From the assessment, it clearly understood that Zone 01 needs more development of infrastructure, Zone 02, 03, 05, 06, 08 needs moderate improvement and Zone 04, 07 already has well established infrastructure and requires less intervention.

Table 1
Zone 01: Overall score is 4 out of 14

S. No.	Parameters	Remarks	Score
01	Pedestrian Infrastructure	Available	1
02	Universally Accessible- Ramps	Not available	0
03	Universally Accessible – Tactile Paving	Not available	0
04	Furnishing - Seating spaces	Not available	0
05	Dustbins and waste disposal	Improper management	0
06	Socially Active or Not	Not Active	0
07	Presence of Vegetation	No	0
08	Proper lighting at night	Yes	1
09	Presence of Danger spaces	No such space	1
10	Presence of Street art or visually appealing vistas	No public Art forms	0
11	Street Encroachments, Street Hawkers	Encroached by various street hawkers	0
12	Provision for Cyclists	No provision for cyclist	0
13	Presence of Open Spaces, Gardens, Green Pockets	Yes	1
14	Proximity with Public Transport	No	0

Table 2
Zone 02: Overall score is 8 out of 14

S. No.	Parameters	Remarks	Score
01	Pedestrian Infrastructure	Available	1
02	Universally Accessible- Ramps	Available	1
03	Universally Accessible – Tactile Paving	Not available	0
04	Furnishing - Seating spaces	Not Available	0
05	Dustbins and waste disposal	Improper management	0
06	Socially Active or Not	Active	1
07	Presence of Vegetation	Moderate	1
08	Proper lighting at night	Yes	1
09	Presence of Danger spaces	No such Spaces	1
10	Presence of Street art or visually appealing vistas	No public Art forms	0
11	Street Encroachments, Street Hawkers	Encroached by various street hawkers	0
12	Provision for Cyclists	No provision for cyclist	0
13	Presence of Open Spaces, Gardens, Green Pockets	Yes	1
14	Proximity with Public Transport	Yes	1

Table 3
Zone 03: Overall score is 9 out of 14

S. No.	Parameters	Remarks	Score
01	Pedestrian Infrastructure	Available	1
02	Universally Accessible- Ramps	Available	1
03	Universally Accessible – Tactile Paving	Not available	0
04	Furnishing - Seating spaces	Not available	0
05	Dustbins and waste disposal	Proper management	1
06	Socially Active or Not	Active	1
07	Presence of Vegetation	Moderate	1
08	Proper lighting at night	Yes	1
09	Presence of Danger spaces	Many danger spaces spotted	0
10	Presence of Street art or visually appealing vistas	French colonial Style adds visual appeal	1
11	Street Encroachments, Street Hawkers	Encroached by various street hawkers	0
12	Provision for Cyclists	No provision for cyclist	0
13	Presence of Open Spaces, Gardens, Green Pockets	Yes	1
14	Proximity with Public Transport	Yes	1

Table 4
Zone 04: Overall score is 10 out of 14

S. No.	Parameters	Remarks	Score
01	Pedestrian Infrastructure	Available	1
02	Universally Accessible- Ramps	Available	1
03	Universally Accessible – Tactile Paving	Not Available	0
04	Furnishing - Seating spaces	Available	1
05	Dustbins and waste disposal	Proper management	1
06	Socially Active or Not	Active	1
07	Presence of Vegetation	High presence	1
08	Proper lighting at night	Yes	1
09	Presence of Danger spaces	Many danger spaces spotted	0
10	Presence of Street art or visually appealing vistas	French colonial Style adds visual appeal	1
11	Street Encroachments, Street Hawkers	Encroached by various street hawkers	0
12	Provision for Cyclists	No provision for cyclist	0
13	Presence of Open Spaces, Gardens, Green Pockets	Yes	1
14	Proximity with Public Transport	Yes	1

Table 5
Zone 05: Overall score is 9 out of 14

S. No.	Parameters	Remarks	Score
01	Pedestrian Infrastructure	Available	1
02	Universally Accessible- Ramps	Available	1
03	Universally Accessible – Tactile Paving	Not Available	0
04	Furnishing - Seating spaces	Available	1
05	Dustbins and waste disposal	Improper management	0
06	Socially Active or Not	Active	1
07	Presence of Vegetation	High presence	1
08	Proper lighting at night	Yes	1
09	Presence of Danger spaces	Many danger spaces spotted	0
10	Presence of Street art or visually appealing vistas	French colonial Style adds visual appeal	1
11	Street Encroachments, Street Hawkers	Encroached by various street hawkers	0
12	Provision for Cyclists	No provision for cyclist	0
13	Presence of Open Spaces, Gardens, Green Pockets	Yes	1
14	Proximity with Public Transport	Yes	1

Table 6
Zone 06: Overall score is 7 out of 14

S. No.	Parameters	Remarks	Score
01	Pedestrian Infrastructure	Available	1
02	Universally Accessible- Ramps	Available	1
03	Universally Accessible – Tactile Paving	Not Available	0
04	Furnishing - Seating spaces	Available	1
05	Dustbins and waste disposal	Improper management	0
06	Socially Active or Not	Active	1
07	Presence of Vegetation	High presence	1
08	Proper lighting at night	No	0
09	Presence of Danger spaces	Many danger spaces spotted	0
10	Presence of Street art or visually appealing vistas	No public Art forms	0
11	Street Encroachments, Street Hawkers	Encroached by various street hawkers	0
12	Provision for Cyclists	No provision for cyclist	0
13	Presence of Open Spaces, Gardens, Green Pockets	Yes	1
14	Proximity with Public Transport	Yes	1

Table 7
Zone 07: Overall score is 10 out of 14

S. No.	Parameters	Remarks	Score
01	Pedestrian Infrastructure	Available	1
02	Universally Accessible- Ramps	Available	1
03	Universally Accessible – Tactile Paving	Not Available	0
04	Furnishing - Seating spaces	Available	1
05	Dustbins and waste disposal	Proper management	1
06	Socially Active or Not	Active	1
07	Presence of Vegetation	High presence	1
08	Proper lighting at night	Yes	1
09	Presence of Danger spaces	Comparatively less presence of danger spaces	1
10	Presence of Street art or visually appealing vistas	No such style or public art forms	0
11	Street Encroachments, Street Hawkers	Encroached by various street hawkers	0
12	Provision for Cyclists	No provision for cyclist	0
13	Presence of Open Spaces, Gardens, Green Pockets	Yes	1
14	Proximity with Public Transport	Yes	1

Table 8
Zone 08: Overall score is 9 out of 14

S. No.	Parameters	Remarks	Score
01	Pedestrian Infrastructure	Available	1
02	Universally Accessible- Ramps	Available	1
03	Universally Accessible – Tactile Paving	Not Available	0
04	Furnishing - Seating spaces	Available	1
05	Dustbins and waste disposal	Proper management	1
06	Socially Active or Not	Not-active	0
07	Presence of Vegetation	High presence	1
08	Proper lighting at night	Yes	1
09	Presence of Danger spaces	Comparatively less presence of danger spaces	1
10	Presence of Street art or visually appealing vistas	No such style or public art forms	0
11	Street Encroachments, Street Hawkers	Encroached by various street hawkers	0
12	Provision for Cyclists	No provision for cyclist	0
13	Presence of Open Spaces, Gardens, Green Pockets	Yes	1
14	Proximity with Public Transport	Yes	1

Table 9

Zone No.	Condition of Zone	Score
Zone 01	Poor	4
Zone 02	Moderate	8
Zone 03	Moderate	9
Zone 04	Good	10
Zone 05	Moderate	9
Zone 06	Moderate	7
Zone 07	Good	10
Zone 08	Moderate	9

coastal region of the country in sustainable manner on scientific principles, keeping in view current global problem of climate change and sea level rise. The notification of 2019 also promotes the development of tourism infrastructure in the coastal areas. The Ministry of Environment Forest and climate change will oversee the matter of CRZ clearance only for CRZ-I and CRZ IV areas while for the other two categories namely CRZ-III and CRZ-II, the power of clearance has been designated at state level. The notification also proposes a no development zone of 20 metres for all islands.

3. Regulations, Schemes and Guidelines for development of the Grand Canal Corridor

A. Coastal Zone Notification – 2019

The Coastal Zone Notification is issued to develop the

Table 10

CRZ - Zones	Remarks	Zones in Site
CRZ – I	Eco – Logically Vulnerable zone	-
CRZ – II	Urban Areas	Zone2,3,4,5
CRZ – III A	No development zone of 50 metres from the High Tide Line	Zone 1
CRZ – III B	No development zone of 200 meters from the High Tide Line	Zone 6,7,8
CRZ – IV	Areas between LTL & 12 NM	-
CRZ – IB	Development of treatment facilities	-

Source: Ministry of Environment Forest and Climate Change, retrieved from https://moef.gov.in/en/

B. Schemes for Urban Street Development in Union Territory of Puducherry

National Urban Livelihoods Mission: NULM is a Centrally Sponsored Scheme implemented by Ministry of Housing and Urban Poverty Alleviation, Govt. of India. PUDA (Puducherry Urban Development Agency) has been designated as the implementing agency for NULM. "Support to Urban Street Vendors" is a strategy in which Development of Town Vending Plans with infrastructure/civic facilities that supports vendors marketing/vending zones/informal sector markets.

Smart City Mission: Creating walkable localities. The road network is created or refurbished not only for vehicles and public transport, but also it should support for pedestrians and cyclists. Preserving and developing open spaces - parks, playgrounds, and recreational spaces to reduce the urban heat effects in Areas and generally promote eco-balance. Source: https://www.py.gov.in/

C. Approaches Towards Green and Smart streets

Health and Safety, Better Image ability of City, Liveability and Quality of life, Multi Modal Access, Environmental Sustainability, Economic Benefits are the latest approaches in Green and smart streets.

Changing the geometric form of the street, to create buffered walkways that invites people to be included in street activities. Upgraded choice of materials that are sustainable and durable and has less operating cost.

4. Design Guidelines for the Project

A. Design Guidelines for Planning of the Corridor

Major objective while framing the guideline for planning, more priority is given to the pedestrian and cyclists and all the non-motorized transit users. The planning and designing of outdoor spaces that accommodates and supports the walkway users and cyclist. More consideration is given to make the outdoor spaces universally accessible by all users by creating proper walkways, ramps, tactile pavements and required furnishings along the corridor.

The width of the road can be decreased, even no. of lanes can be reduced with increasing the width of Walkways and adding exclusive infrastructure like tracks that supports cycle movement along the corridor. The corridor can be declared as a Non – Motorised Corridor at stipulated timeframes in a day.

Edge conditions along the canal corridor can be activated by creating promenades and public recreational spaces at multiple levels. Creating more green pockets and open spaces helps the city to be resilient to climate change.

B. Design Guidelines for Designing Outdoor Spaces

The outdoor spaces should be designed considering the context of the surrounding. It is very important to retain the cultural, Historical, Heritage, Social value of the site. Invasive design ideas should be avoided.

The outdoor spaces should be more Flexible in terms of usage. Flexible Public Spaces can accommodate various activities in different period of time. Flexible public spaces have a dynamic nature and can be adaptively used for many purposes.

Required furnishings like seating spaces, lighting fixtures, dust bins, signage, information boards, parking has to be properly provided along the stretch of Grand Canal Corridor and proper infrastructure for buffering the danger spaces like EB boxes, transformers should be provided.

Public Art forms should be a part of the outdoor spaces. It can be achieved through painting or using 3d hardscapes that reflects the character of the site. Integrating public art forms as a part of outdoor spaces makes the spaces more vibrant and unique. Public art forms can also improve the beautification of streets

Creating socially active spaces by converting the dead and un-used spaces along the corridor for recreational purposes. In the zones where there is no availability of open spaces, the portion of canal can be covered up to create new open spaces along the Grand Canal Corridor.

5. Conclusion

This paper presented a study on the development of grand canal corridor in Pondicherry.

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