विकास आयुक्त/अध्यक्ष, सीप्ज़-सेज़ प्राधिकरण की अध्यक्षता में दिनांक 07.04.2026 को आयोजित 76वीं प्राधिकरण बैठक का कार्यवृत्त।

MINUTES OF THE 76th AUTHORITY MEETING HELD ON 07.04.2026 IN HYBRID MODE, UNDER THE CHAIRMANSHIP OF DEVELOPMENT COMMISSIONER/CHAIRPERSON, SEEPZ-SEZ AUTHORITY.

The following were present:

Sr. No.	Name	Designation
1	Shri. Mayur Mankar, Joint Development Commissioner, SEEPZ-SEZ	Member/Secretary
2	Shri. Backiyavelu Mutharasu, ITS, Deputy DGFT, Mumbai	Member
3	Shri. Hasmukh Bhai Dholakiya, Partner of M/s. HK Designs (India) LLP	Member
4	Shri. Sapinder Singh, Managing Director of M/s Omega Products Pvt. Ltd	Member

Special Invitee:-

Sr. No.	Name	Designation
1	Shri Adil Kotwal	Chairman, SGJMA
2	Shri Vijay Gujrathi	Chairman, SEEMA
3	Shri Rajendra Wagh	Deputy Engineer, MIDC

Shri Sandeep Bhosale, Dy. Development Commissioner, Shri. Avinash Patankar, Sr. Accounts Officer & Officer (Estate Finance), Shri Hanish Rathi, Assistant Development Commissioner), Shri Aman Kumar Sharma, Assistant Development Commissioner, Shri Rahul Shivannagol, Assistant Development Commissioner, Shri Ajeet Bhati, LDC also attended for assistance and smooth functioning of the meeting.

Agenda Item No. 1: Confirmation of Minutes of 75th Authority held on 24.12.2025.

Decision: After Deliberation, Authority confirms the Minutes of the meeting held on 24.12.2025.

Agenda Item No. 1 (A):- Monthly Statement expenditure incurred through Imprest.

Authority was apprised that, the statement of expenditure incurred through Imprest for the months of December 2025, January 2026, and February 2026 was placed before the Authority. The expenditures primarily pertain to routine and contingent expenses such as official travel arrangements (air/rail ticket bookings), mobile and internet charges, office-related purchases, minor repairs and maintenance and other incidental requirements necessary for smooth functioning of the office.

The expenditures have been incurred for official purposes and are in the nature of petty and emergent expenses, processed through the Imprest mechanism in accordance with prescribed financial rules and procedures.

Decision: After Deliberation, Authority **noted** the expenses incurred through Imprest Account.

Agenda Item No. 2:- Post-facto approval for engagement of One Young Professional (Legal) and One Young Professional (Media / Communications) on contractual basis to support SEEPZ Authority functions and Legal work of SEEPZ-SEZ.

The Authority was apprised that due to the increased workload in legal as well as media and communication functions, and considering the limited manpower in SEEPZ-SEZ, it became necessary to engage additional professional support.

Accordingly, the process for engagement of one Young Professional (Legal) and one Young Professional (Media/Communications) on contractual basis was initiated vide advertisement dated 17.02.2026.

Decision: After deliberation, the Authority **approved** the proposal for the engagement of one Young Professional (Legal) and one Young Professional (Media/Communications) on contractual basis for supporting the functions of SEEPZ Authority and the legal work of SEEPZ-SEZ.

Agenda Item No. 3: Consideration of request of M/s. Moksh Ornaments Ltd for waiver of forfeiture of EMD amounting to ₹12,07,165/- in respect of Unit No. 304, NEST-II, SEEPZ-SEZ.

Authority was apprised that M/s. Moksh Ornaments Ltd., being the successful bidder for two units in SEEPZ-SEZ, subsequently surrendered Unit No. 304, NEST-II citing delay in handing over possession, which adversely impacted commencement of operations and business prospects.

Accordingly, proportionate EMD amounting to ₹12,07,165/- was forfeited in terms of the tender conditions. Thereafter, the unit submitted a representation requesting waiver of the forfeiture on the grounds that the surrender was due to reasons not attributable to them. The matter has been examined and the request has been found to merit consideration.

Decision: After due deliberation, the Authority **approved** the above proposal for return of forfeited EMD amounting to ₹12,07,165/-.

Agenda Item No. 4: Proposal for approval of award of contract to M/s. Maa Sharda Service for hiring of vehicle on monthly basis.

Authority was apprised that SEEPZ-SEZ requires dedicated vehicles for administrative and operational purposes. The existing contract for hiring of two electric vehicles has been found operationally restrictive due to range limitations and insufficient availability.

Accordingly, a fresh proposal for hiring three Petrol/CNG vehicles on monthly basis with improved service conditions was initiated. M/s. Maa Sharda Service has emerged as the L1 bidder, and the quoted rates have been found reasonable.

The proposal also includes replacement of the existing vehicles and hiring of one additional vehicle to meet increased operational requirements.

Decision: After deliberation, the Authority **approved** the proposal for award of contract to M/s. Maa Sharda Service for hiring of vehicles on monthly basis, including replacement of existing vehicles and hiring of an additional vehicle.

Agenda Item No. 5: Post- Facto approval for Engagement of Shri D.S. Patil, Retd. Joint Secretary (Legal), Government of Maharashtra as Legal Consultant to Expert Committee- reg..

Authority was apprised that Shri D. S. Patil, Retd. Joint Secretary (Legal), Government of Maharashtra, was engaged as Legal Consultant to assist the Expert Committee constituted for examining sub-lease policy matters, considering the requirement of detailed legal scrutiny and continuous assistance.

The engagement was approved with a consultancy fee of₹15,000/- (Rupees Fifteen Thousand only) per sitting, along with the provision of pick-up and drop facility on days of physical meetings held at SEEPZ-SEZ, Mumbai, as per the

approved terms and conditions.

Decision: After deliberation, the Authority granted post facto approval for the engagement of Shri D. S. Patil, Retd. Joint Secretary (Legal), Government of Maharashtra, as Legal Consultant to the Expert Committee on the approved terms and conditions.

Agenda Item No. 6: To revise the service charges and recover the same uniformly from all units in SEEPZ-SEZ. The Service charges shall also be reviewed annually and revised, if required, as decided by the Authority.

Authority was apprised that the SEEPZ-SEZ Authority incurs considerable expenditure towards provision and maintenance of common infrastructure and services such as repairs, housekeeping, security, lift AMC and other essential services required for the smooth functioning of the Zone. However, the existing service charges recovered from units are not commensurate with the actual expenditure incurred, resulting in a substantial shortfall during FY 2025–26.

In order to bridge the said shortfall and ensure recovery of expenditure in a sustainable manner, it is proposed to revise the service charges from the existing rate of ₹250 per sq. mtr. per annum to ₹777 per sq. mtr. per annum, based on the assessed deficit. It is further proposed that the revised charges be levied uniformly on all units, as the common services are utilized by all units in the Zone.

It is also proposed that the service charges be reviewed annually based on the actual expenditure incurred on services, and revised, if required, with the approval of the Authority.

Decision:

After detailed deliberations and careful consideration of the prevailing costs and future financial implications, the Authority approved the revision of service charges from the existing rate of ₹250 per sq. mtr. per annum to ₹350 per sq. mtr. per annum, thereby effecting an increase of ₹100 per sq. mtr. per annum. The revised rate shall be applicable from 01.04.2026.

Further, the Authority observed that in the event of a substantial increase in expenditure on services - estimated to be in the range of ₹30 crore or above - a need may arise for reassessment of the service charge structure. Accordingly, it was decided that under such circumstances, a Committee shall be constituted to examine the factors contributing to the increased expenditure, undertake a comprehensive review, and recommend appropriate measures, including revision of service charges, for consideration and approval of the Authority. The Committee will be formed under the Chairmanship of JDC & other members will be suggested by SEEMA & SGJMA.

Agenda Item No. 7: To place before the Authority the Report-I dated 13.03.2026 submitted by the Advisory Committee constituted for

implementation of Sub-lease Renewal Policy, for perusal, consideration and approval in respect of:

(i) Fixation of revised 'Fair Rental Rate' for renewal of sub-leases in SEEPZ-SEZ

(ii) Adoption of Model Sub-lease Agreement

(iii) Adoption of Model 'No Objection Certificate for Creation of Mortgage'

Authority was apprised that the Advisory Committee constituted for addressing issues relating to sub-lease renewal policy in SEEPZ-SEZ has submitted its Report-I dated 13.03.2026 for consideration of the Authority. The Committee was mandated to examine long-pending issues pertaining to renewal of sub-leases, absence of standardized agreements, and challenges in mortgage-related matters.

The Committee, after detailed deliberations, analysis of relevant data, and stakeholder consultations, has recommended fixation of a revised Fair Rental Rate, adoption of a standardized Model Sub-lease Agreement, and a Model No Objection Certificate (NOC) for creation of mortgage. The recommended Fair Rental Rate is ₹7,767/- per sq. mtr. per annum and ₹9,708/- per sq. mtr. per annum for mortgage cases, with annual escalation of 5%, proposed to be made effective from 01.04.2026.

The proposed Model Sub-lease Agreement and Model NOC are intended to bring uniformity, ensure legal clarity, safeguard the interests of the Authority, and streamline administrative procedures, thereby minimizing disputes and delays.

Decision:

The Authority perused the Report-I in detail and deliberated upon the recommendations made therein.

(ii) & (iii) The Authority approved the adoption of the Model Sub-lease Agreement and the Model 'No Objection Certificate for Creation of Mortgage' as recommended by the Committee.

(i) With regard to fixation of the revised 'Fair Rental Rate' for renewal of sub-leases in SEEPZ-SEZ, the Authority agreed to the rates proposed by the Committee in respect of units other than manufacturing units.

However, the Authority noted that manufacturing units in SEEPZ-SEZ play a crucial role in contributing to exports and employment generation and are among the pioneering entities in the Zone. In view of the above, it was felt necessary to adopt a differentiated and more considered approach for fixation of Fair Rental Rates for such units.

Accordingly, the Authority decided to reconstitute the Expert Committee, under the Chairmanship of K. P. Bakshi, IAS (Retd.) with inclusion of two representatives from trade/industry, to examine and recommend an appropriate methodology and revised Fair Rental Rates specifically for manufacturing units, possibly based on the funds required for development of SEEPZ infrastructure. The reconstituted Committee shall submit its recommendations within a period of 60 days for further consideration of the Authority.

Agenda Item No. 8: Proposal for approval of the key planning and infrastructure decisions required for finalisation of the SEEPZ Master Plan, including the proposed road network, utility network, water supply system, sewerage system, power supply framework, and the planning-level cost estimate as brought out in the KD5 Draft Master Plan Supplement Report.

Authority was apprised that the KD5 Draft Master Plan Supplement Report submitted by the Consultant outlines a comprehensive redevelopment strategy for SEEPZ-SEZ, aimed at creating a modern, efficient, and sustainable industrial ecosystem with improved infrastructure and optimized land use.

The proposal includes key planning decisions relating to road network with skywalk-based pedestrian system, centrally aligned Multi-Utility Tunnel for integrated utility services, augmentation of water supply and sewerage systems, and assessment of future power requirements, which are found to be within the existing capacity.

The report also provides a planning-level cost estimate of approximately ₹278.68 crore for the recommended infrastructure framework, comprising RCC roads, centrally aligned pre-cast Multi-Utility Tunnel, and vacuum-based sewerage system.

The following proposals are placed before the Authority for consideration:

1. To approve the centrally aligned Multi-Utility Tunnel framework as the preferred utility network option for future-ready and maintainable infrastructure planning. (approx. cost 155.55 Cr.)

2. To approve in principle the inclusion of the proposed grade-separated skywalk-based pedestrian network as part of the road and circulation strategy for the campus. (approx. cost 77.72 Cr.)

3. To approve the water supply concept, including augmentation of storage and pumping infrastructure, ring-main distribution, recycled water reuse, and an independent fire-fighting system. (approx. cost 9.21 Cr.)

4. To approve the sewerage planning framework with provision for about 9 MLD STP capacity in phases and to take an appropriate decision on the preferred sewage conveyance system based on the report recommendations. (approx. cost 24.8 Cr.)

5. To note that the projected ultimate power demand of about 51 MVA remains within the installed substation capacity of 60 MVA and that no major additional grid capacity is presently indicated in the report. (approx. cost 11.40 Cr.)

6. To approve the planning-level cost estimate and to note that the recommended infrastructure option in the report is RCC roads with centrally aligned pre-cast MUT and vacuum sewerage at an estimated project cost of Rs. 2,78,68,19,183.57.

Decision:

After detailed deliberations, the Authority recorded the following decisions:

1. Item No. 1: Out of the three options proposed by M/s Tractebel Engineering Limited, Option 1 (Details are attached in Annexure) was approved by the Authority as it is most feasible for execution without disturbing existing services.

2. Item No. 2: The skywalk proposal shall also incorporate connectivity to the NEST-03 building, which was not included in the presentation, and shall be extended to provide a direct link to the Metro line.

3. Item No. 3: As per the observations of the hydraulic expert, a new surface reservoir shall be developed in the G&J–3 Complex area to ensure 24-hour water supply. The revival of the existing WSR may be considered in future if required.

4. Item No. 4: The sewerage system shall be developed in accordance with the locations proposed in the Master Plan.

5. Item No. 5: The Authority noted the adequacy of the existing power infrastructure capacity as reported.

6. Rest proposal as proposed approved.

The Authority further directed that:

Implementation of multi utility tunnel should be undertaken in phased manner, giving priority to areas where the road condition is severely damaged.

While planning, minimum disturbance to existing trees should be ensured. As proposed in the plan for Plot-01 three separate buildings should be incorporated as 2 buildings to get a grand view.

Vastu should be considered in the Master Plan and shall be compulsorily followed at the individual building level.

The proposal for an underground direct access gate connecting SEEPZ to the Metro line shall be incorporated in the final planning layout.

Table Agenda Item No. 01: The appointment of a Tax Consultant for filing appeals and representing before the Hon'ble Income Tax Appellate Tribunal (ITAT) and the Commissioner of Income Tax (Appeals) [CIT(A)] for Assessment Years 2013–14 and 2015–16 (i.e., two assessment years) is placed for consideration.

Authority was apprised that the appeals filed by SEEPZ-SEZ Authority for Assessment Years 2013–14 and 2015–16 have been disposed of by the Commissioner of Income Tax (Appeals) against the Authority, resulting in significant financial implications, including additional tax liability and loss of eligible refund.

Further, revision proceedings under the Income Tax Act have also led to additional financial exposure. In order to safeguard the financial interests of the Authority and to pursue further appeals before the Hon'ble Income Tax Appellate Tribunal (ITAT) and the Commissioner of Income Tax (Appeals), it is necessary to engage a firm of Chartered Accountants as Tax Consultant.

The proposed scope of work includes examination of assessment and appellate orders, filing of appeals within prescribed timelines, representation before appellate authorities, and providing necessary advisory and procedural support.

Accordingly, it was proposed to appoint a Tax Consultant for filing appeals and representing before the Hon'ble Income Tax Appellate Tribunal (ITAT) and the Commissioner of Income Tax (Appeals) [CIT(A)] for Assessment Years 2013–14 and 2015–16 (i.e., two assessment years) is placed for consideration.

Decision: After deliberation, Authority **approved** the said proposal and directed to appoint the Tax Consultant by following the procedure under GFR 155.

The meeting concluded with vote of thanks to the Chair.

Digitally signed by
Mayur R Mankar
Date: 21-04-2026
18:05:26

(मयूर मानकर)

संयुक्त विकास आयुक्त/ सदस्य/सचिव

सीप्ज़-सेज़

Preparation of

Detailed Master Plan for 30 years & Detailed Architectural Design for model building for SEEPZ-SEZ

Draft Master Plan Supplement Report

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DRAFT MASTER PLAN SUPPLEMENT REPORT

Our ref.: **Document No. W.004717-Z-10342-001 -Rev.00**

Imputation: Project No. W.004717

RESTRICTED

Client: **Development Commissioner, SEEPZ-SEZ, Mumbai**

Project: **Preparation of Detailed Master Plan for 30 years & Detailed Architectural Design for model building for SEEPZ-SEZ, Mumbai**

Subject: **Draft Master Plan Supplement Report**

Comments:

Revision No.	Date	Prepared / Revision By	Description
R0	01.04.2026	Amit Sarkar	

REV.	YY/MM/DD	STAT.	WRITTEN	VERIFIED	APPROVED	VALIDATED
R0	2026.04.01		Project Team	Amit Sarkar	Mona Srivastava	Rahul Jotshi

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ABBREVIATIONS

EPZ	:	Export Processing Zone
ESS	:	Electrical Sub Station
EWCD	:	Elderly Women Children Disabled
MIDC	:	Maharashtra Industrial Development Corporation
MUT	:	Multi-Utility Tunnel
SEEPZ	:	Santacruz Electronics Export Processing Zone
SEZ	:	Special Economic Zone

1. DRAFT MASTER PLAN

1.1 Introduction

The Master Plan for SEEPZ presents a holistic redevelopment strategy designed to transform the campus into a modern, efficient, and environmentally responsive industrial ecosystem. The proposal identifies five plots for redevelopment, collectively covering 1,32,448 sqm within a total site area of 4,21,105 sqm. The remaining 2,69,628 sqm—which includes existing buildings, internal road infrastructure, and open spaces—will be retained to ensure functional continuity. As per the fourth quarter of 2025–2026, SEEPZ has an existing carpet area of 2,70,188.88 sqm, operating at a current FSI of 1. The guiding approach integrates land efficiency, environmental conservation, mobility enhancement, and future-ready infrastructure.

Three master plan options were presented earlier, each offering distinct development approaches for the SEEPZ campus. Following multiple rounds of discussions with clients and key stakeholders—and after carefully reviewing and incorporating their feedback—the current option has been refined and prepared to best align with the project's strategic objectives and expectations.

1.2 Site Analysis and Existing Conditions

The redevelopment plots possess significant natural assets and variations that have guided the planning approach. These plots contain about 1500 trees and exhibit natural ground levels between +21 m and +31.5 m ASL. Higher areas have been reserved for built development, while lower-lying areas are earmarked for **greens, bioswales**, and **blue-green interventions**. This strategy ensures that the Master Plan responds sensitively to existing terrain, ecological systems, and drainage patterns.

1.3 Concept Evolution and Planning Principles

Each of the five redevelopment plots is planned using a consistent methodology. A representative example shows how plot-level planning integrates natural terrain, existing trees, ground conditions, and circulation.

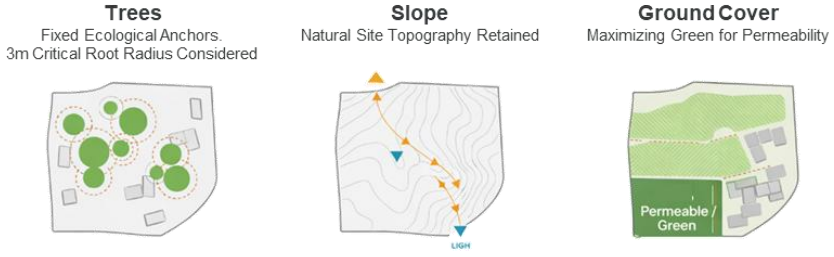
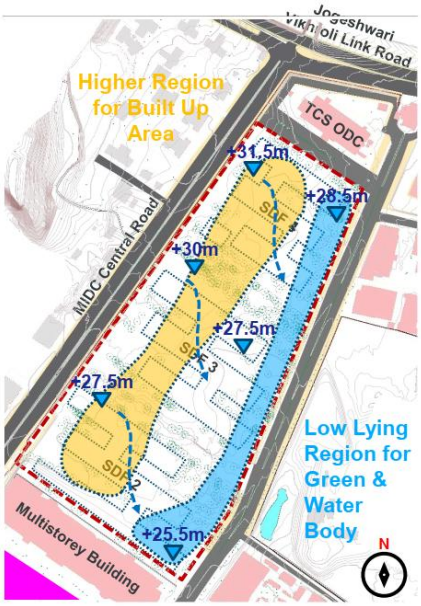
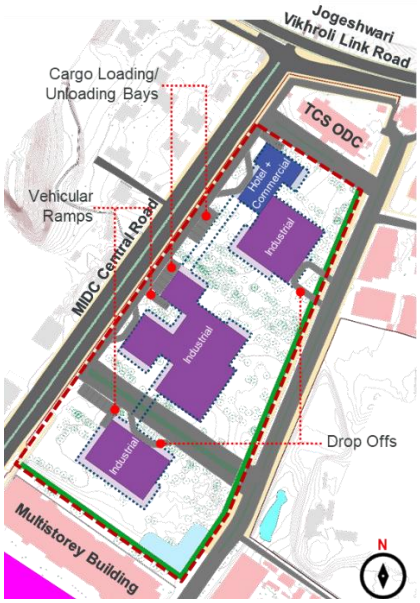


Figure 1.1 Planning Parameters



Site Topography

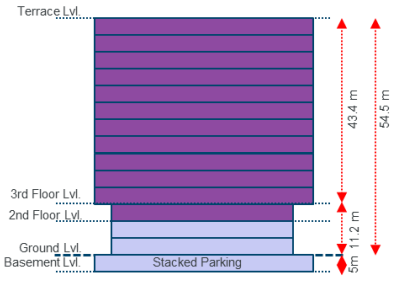
Ecological anchors such as large trees determine building placement, while slopes are preserved to facilitate natural drainage. Built-up areas are concentrated in higher zones, while low-lying areas accommodate green cover, water features, and blue-green systems.



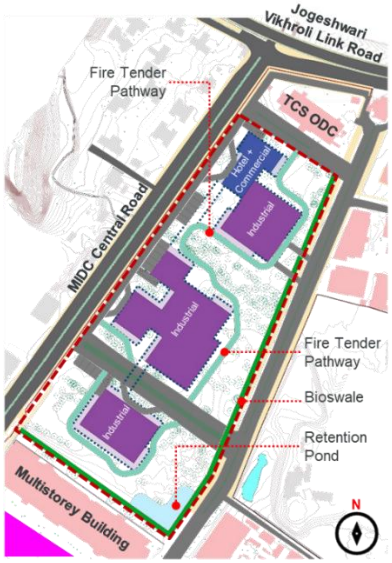
Ground Cover & Heights

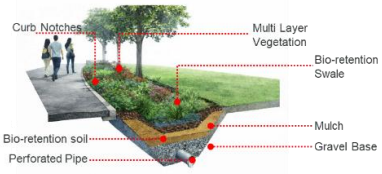
The industrial blocks have been planned with a ground cover of about 30%. This footprint if followed up to the 2nd Floor level with the ground and 2st floor serving as parking areas and the 2nd floor serving as the pedestrian entrance for the industrial block. After the 2nd Floor, i.e., from the 3rd floor all the way up to the 14th Floor, the building footprint has been expanded up to 35% to provide larger industrial footprints. The ground and 1st floor are 3.35 m in height while the rest of the floors are 3.95m in height adding up to a total height of 54.5m including the 0.6m high plinth.

Drop-Offs, Loading, and Cargo Access

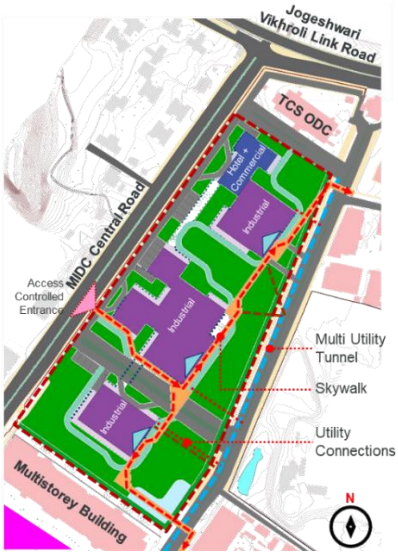


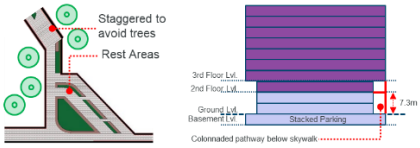
The plan incorporates designated loading/unloading bays, shaded drop-off points created through extended building footprints, and segregated vehicular ramps for basement access. Cargo movement is strategically separated from pedestrian pathways to ensure safety and operational fluency. The arrangement ensures seamless functioning of industrial units without disruption to commercial or pedestrian zones.





Fire Tender approved Grass pavers to allow water percolation





Blue–Green Network

The master plan incorporates a network of bio-retention swales designed with engineered soil layers, gravel bases, mulch, and perforated pipes to slow, filter, and absorb stormwater. These bioswales work with site contours to channel runoff naturally, enhancing infiltration, reducing peak flows, and supporting groundwater recharge across the estate.

Stormwater Strategy

Strategically located low-lying pockets function as retention ponds that receive filtered runoff from bioswales and permeable surfaces. Water is slowed through cascades, stored in harvesting tanks, and reused for irrigation and non-potable needs. This integrated system strengthens stormwater resilience, mitigates flood risks, and ensures effective water management during Mumbai's intense monsoon cycles.

Semi Permeable Fire Tender Pathways

The master plan incorporates 6-metre-wide fire-tender pathways around all buildings, designed using fire-approved grass pavers. These semi-permeable pavers ensure safe emergency access while allowing rainwater to percolate into the soil, supporting natural groundwater recharge and contributing to the project's sustainable stormwater management strategy.

Multi-Utility Tunnel

The plan introduces a Multi-Utility Tunnel (MUT) framework across the redevelopment plots, enabling all underground services—including power, ICT networks, water supply, sewage lines, and future service corridors—to be housed within a single accessible conduit. This system enhances long-term maintainability, minimizes surface disruption, and prevents repeated road cutting for utility repairs or upgrades.

Elevated Skywalk and Pedestrian Connectivity

A 6 m-wide elevated skywalk network provides safe, shaded, and efficient pedestrian movement across buildings, connecting directly to the 2nd floor. The skywalk creates a segregated pedestrian realm and links directly to SEEPZ Metro station . Its alignment avoids trees, includes staggered rest points, and incorporates a colonnaded walkway below for enhanced comfort and accessibility.

Community Greens

Generous community green spaces enhance permeability and enable near-complete stormwater percolation into the soil. These landscaped zones support natural recharge while offering accessible, vibrant outdoor environments for employees. Designed for interaction and well-being, the community greens unify ecological performance with social value, enriching daily life across the campus.

1.4 Master Plan

The master plan aims to optimize FSI utilization while responding sensitively to site conditions, planning parameters, and ecological constraints. Instead of imposing a uniform built form, each plot is assigned a customized building footprint tailored to its specific site geometry. These footprints are derived using the same column grid as the proposed Nest 3 model building, ensuring structural efficiency and design consistency across the redevelopment without compromising site responsiveness.

A key design principle is the preservation of the existing landscape. By shaping the built form around current green assets, the proposal minimizes the need for extensive tree cutting or transplantation and maintains high levels of site permeability. This approach allows for effective FSI optimization while retaining a relatively low ground coverage and ensuring a green, ecologically resilient campus.

1.4.1 Ground Coverage, Built Form, and Circulation

Across the redevelopment plots, the master plan achieves 30% ground coverage (39,485 sqm), 35% expanded floor area (46,026 sqm), and a 36% basement footprint (47,921 sqm). Building masses are arranged to maximize functionality while maintaining ample open space and ensuring environmental permeability. Vertical development predominantly follows a B+G+8 to B+G+13 structure, reaching heights of 32.6m to 54.1m, enabling capacity enhancement without excessive land occupation.

The proposal delivers a total Built-Up Area of 6,18,670 sqm, including an FSI area of 5,44,319 sqm, resulting in an achieved FSI of 4.1 across the five redevelopment plots. As per MIDC CDCPR 2023 norms, the parking requirement is 4,151 ECS, while the plan provides 4,661 ECS, ensuring full compliance with additional buffer capacity. The master plan thus ensures optimal built potential, efficient circulation networks, and future-ready infrastructure.

The skywalk network has been planned to enable safe, shaded, and efficient pedestrian movement between buildings, with direct access provided at the second-floor level. The total planned length of the skywalk is approximately 1.9 km. Should the alignment be modified to integrate with the proposed underground metro connection to the site, the overall length and area of the skywalk are expected to remain largely unchanged.

1.4.2 Built Up Area Distribution

The development program reinforces SEEPZ's industrial character while integrating essential complementary uses. Industrial functions constitute 75% of the overall built-up area, while

commercial uses account for 20% and multi-storey parking structures for 5%. This balanced mix increases operational efficiency and positions SEEPZ as a robust, future-ready industrial ecosystem supported by appropriate commercial and service functions.

1.4.3 Key Indicators

The concept balances development capacity with environmental stewardship and operational efficiency. Key quantitative indicators of the proposed plan are summarized below.

Total FSI Area Achieved	8,71,097 sqm.
Toal Global FSI Achieved	2.2
Toal Carpet Area Achieved	6,80,000 sqm.
Premium to be paid for FSI (approx.)	INR 680 Cr.
Ground Coverage	30%
Maximum no. of Floors	B+G+13
Maximum Height	54.1m
Total Projected Working Population	1,61,314
Total Projected Floating Population	32,263
Total Community Green Area	53,272 sqm.
No. of Trees to be Transplanted	80
Total Pedestrian Network (Skywalk) Length/ Area	1.9 km/ 10,975 sqm.

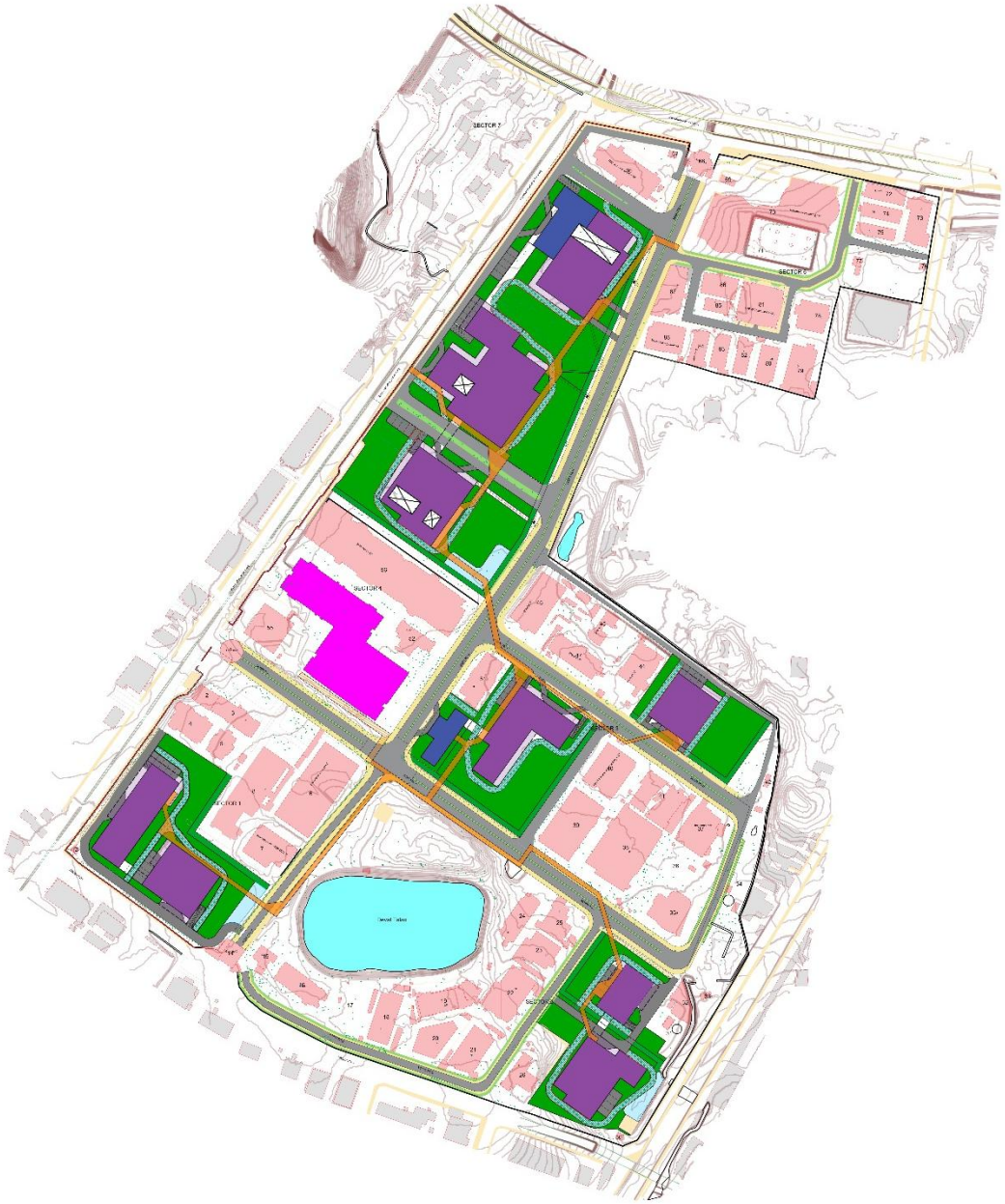


Figure 1.2 Master Plan

An alternate option was assessed wherein the Nest 3 model building footprint was replicated uniformly across all plots. However, this approach significantly increased ground coverage, reduced green open spaces, and negatively impacted surface runoff and groundwater recharge. Furthermore, the uniform-footprint option required the transplantation of an additional 205 trees. Given these ecological and environmental disadvantages, the option was not recommended for adoption.

2. PHYSICAL INFRASTRUCTURE

2.1 EXISTING SCENARIO

The existing scenario reveals significant gaps across the water supply, sewage treatment, electricity, and solid waste management systems. Water is currently supplied by MCGM and distributed by MIDC at a rate of 3600 CUM per day, which is inadequate for the approximate working population of one lakh. The system relies on an existing 3 MLD water tank and pump room located near Dev Talav, which further highlights the need for capacity enhancement. The sewage treatment facility comprises a 2 MLD STP that is already overloaded by about 40% and is presently non-functional, resulting in sewage being diverted to septic tanks before reaching the plant. Electricity availability is also constrained, with the existing distribution sub-station offering a maximum capacity of 60 MVA, of which 35 MVA is already in use, limiting the potential for future load expansion. Solid waste management remains insufficient, as the bio-gas plant within SEEPZ is non-operational, and waste segregation continues to take place in a temporary shed rather than an integrated processing facility. Together, these issues underline the urgent need for systemic upgrades and a more resilient infrastructure framework.

2.2 PROPOSED SCENARIO

The proposed scenario outlines a comprehensive upgrade to SEEPZ's core infrastructure, addressing current deficiencies while creating capacity for future development. The water system is strengthened through the provision of a new **3 MLD potable water storage tank and pump room**, supported by a dedicated recycled water facility designed to meet the projected **5.09 MLD potable** and **5.02 MLD recycled** water demand. Sewage management will be significantly improved through the installation of a new **9 MLD STP,** with a **5 MLD STP** adjacent to the existing plant, along with **packaged STPs** of total **4 MLD** capacity integrated within the redeveloped plots. Once these systems become operational, the old STP will be dismantled. To efficiently serve low-lying areas, a new **sewage pumping station** is proposed near the SEEPZ++ zone, ensuring smoother conveyance and system reliability. The electrical network is future-proofed by maximizing the utilization of the existing **60 MVA ESS.** Additionally, solid waste handling is modernized through the creation of a **structured SWM Centre** on the site of the decommissioned old STP, enabling systematic and efficient waste processing within the campus. Overall, the proposed scenario establishes a robust, scalable, and resilient utility infrastructure framework that supports SEEPZ's long-term growth. The proposals are detailed in the following sections.

Figure 2.1 Proposed Utilities

2.3 ROAD NETWORK

2.3.1 Rationale for Skywalk Integration

2.3.1.1 NEED FOR A GRADE SEPARATED PEDESTRIAN SYSTEM

ROW Constraints

SEEPZ's existing 15–24 m right-of-way cannot simultaneously accommodate standard traffic lanes, cycle tracks, utilities, drainage and IRC-compliant footpaths.

A skywalk system removes pedestrian movement from the ground plane, enabling full carriageway functionality and dedicated NMT corridors without ROW expansion.

High Pedestrian Demand

Peak volumes observed during the 7-day survey include:

- Gate 3: 6,941 persons/hour (15 April 2025 — highest recorded)
- Gate 1: 6,570 persons/hour

No at-grade footpath within current ROW can safely accommodate these loads.

Operational Requirements of an Industrial SEZ

SEEPZ experiences continuous movement of freight vehicles, jewellery consignments, electronics and logistics vans.

Separating pedestrian flows via skywalks eliminates conflicts, reduces gate congestion, and improves logistics efficiency.

Monsoon Resilience

SEEPZ's low-lying zones experience routine waterlogging. An elevated system ensures uninterrupted, weather-proof pedestrian connectivity

Integration with Modern Mobility

By relocating pedestrian movement vertically, the ground level can host continuous cycle tracks, EV lanes and unobstructed carriageways.

The skywalk isolates workers from logistics leading to huge direct operational efficiency gain.

Table 2.1 Comparison of At-Grade vs Grade-Separated Pedestrian Network

Parameter	At-Grade Network (with sidewalks)	Skywalk Network
ROW suitability	Inadequate for IRC footpaths + cycle tracks + full carriageway	Completely bypasses ROW limitation
Pedestrian comfort	Highly compromised; narrow footpaths due to services and trees.	Comfortable, shaded, elevated
Traffic flow	Carriageway becomes narrow → bottlenecks for trucks, buses	Smooth surface-level traffic
NMT integration	No space left for cycle tracks	Cycle tracks fully accommodated on ground (as footpaths move to skywalk)
Pedestrian capacity	1.5–2 m footpaths cannot support 6,900 pph	Skywalk handles high volumes easily
Safety	Still pedestrian–vehicle mixing at crossings	Zero conflict
Monsoon performance	Flooding disrupts footpaths; ponding at edges	Elevated and weather-safe
Security	Gate congestion remains	Skywalk can have controlled access mid-air
Industrial operations	Delivery trucks block lanes due to narrowing	Entire ground-plane optimized for logistics
Metro connectivity	Long at-mix walking through traffic	Direct, grade-separated connection

2.3.1.2 PEDESTRIAN VOLUME ANALYSIS

A gate-wise assessment (14–20 April 2025) indicates consistent weekday demand exceeding 13,000–14,000 persons/day, with Gate 3 carrying the highest hourly load. The maximum weekly peak is summarized below:

- **Gate 1:** 6,570 pph
- **Gate 2:** 1,999 pph
- **Gate 3:** 6,941 pph
- **Total:** 15,510 pph (all gates combined)

2055 Projections

Forecasted demand increases substantially, exceeding 38,000 persons/hour across the three gates.

2.3.1.3 COMPLIANCE WITH IRC FOOTPATH STANDARDS

As per IRC:103-2012, LOS-C (acceptable for constrained urban contexts) requires a 4.0 m wide footpath to handle 7,560 persons/hour (one direction).

Thus, Gate 3's peak of 6,941 pph can only be safely accommodated with a minimum 4 m footpath, which is not feasible within the existing ROW.

This reinforces the need for a grade-separated pedestrian network.

2.3.1.4 VEHICULAR TRAFFIC CONDITIONS

Using Indo-HCM 2017 (CRRI) methodology, Gate 3 currently operates at a V/C ratio of 0.25, corresponding to LOS-B, indicating free-flowing vehicular conditions.

Maintaining this performance requires ensuring that pedestrian flows do not encroach on the carriageway — another justification for a skywalk-based system.

2.3.1.5 CONCLUSION

The combined constraints of extremely high pedestrian volumes, limited ROW, industrial-grade logistics, and monsoon vulnerability make an elevated skywalk network the most feasible long-term mobility solution for SEEPZ.

It ensures safety, operational efficiency and future-ready multimodal integration while maintaining optimal traffic performance.

2.4 UTILITY NETWORK

2.4.1 Option 1 – Multi-Utility Tunnel

Multi-Utility Tunnels (MUTs) provide an efficient, safe, and future-ready solution for accommodating essential city infrastructure—such as power lines, water supply, ICT networks, and district cooling—within a single accessible underground corridor. This approach

eliminates repeated road cutting, reduces service disruptions, and enables easier maintenance throughout the asset lifecycle.

In India, MUT systems have already been successfully implemented in **Connaught Place (Delhi)** and **GIFT City (Gandhinagar)**, where they have proven their value in improving urban reliability, minimizing surface-level clutter, and enabling rapid utility management. These precedents demonstrate the practicality and long-term benefits of adopting MUTs in dense urban environments.

For new developments, the use of **pre-cast concrete technology** offers significant advantages, including faster installation, improved quality control, reduced on-site disruption, and enhanced structural durability. Pre-cast modules can be rapidly assembled on-site, ensuring consistent workmanship and enabling phased expansion as city needs evolve.

Figure 2.2 Pre-cast Multi-utility Tunnel Construction

The proposed Multi-Utility Tunnel (MUT) network forms a **2.3-km**s interconnected underground corridor designed to safely route essential services such as power, ICT, water supply, and recycled water across the campus. The network comprises is strategically aligned to connect major utility nodes including the ESS, SWM Centre, Water Tank, and STP. This routing ensures seamless service distribution while minimizing future surface disturbances.

During construction, the MUT is integrated within existing road corridors of varying widths—**24 m ROW**, **18 m ROW**, and **15 m ROW**—with careful staging to keep existing utilities intact. The construction methodology ensures that one carriageway remains operational for traffic, while the adjacent lane is temporarily closed to facilitate MUT excavation and pre-cast tunnel installation. In narrower ROWs, alternative routing or phased traffic diversion is planned to maintain continuous accessibility. Across all sections, existing utilities are preserved in their current positions, ensuring uninterrupted functioning throughout the construction period.

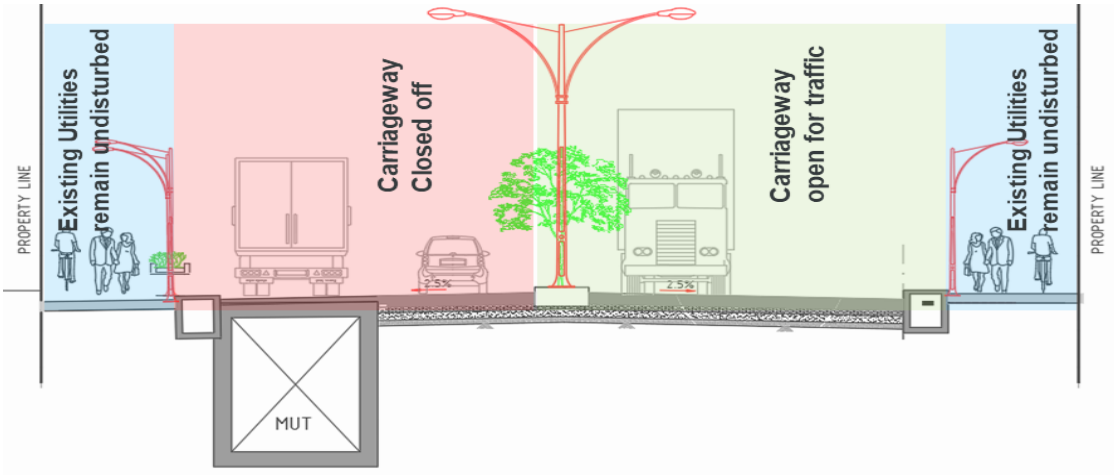


Figure 2.3 24m ROW Road Section with MUT

This approach enables the MUT to be executed efficiently with **minimal disruption**, while providing a long-term, maintainable, and future-ready underground utility backbone for the entire campus.

Figure 2.4 Pre-cast Multi-utility Tunnel Construction

The proposed MUT section provides a well-organized, walkable utility corridor designed to safely accommodate all essential services within a single underground structure. With an outer dimension of **4.0 m × 4.5 m** and an inner clear section of **3.2 m × 3.6 m**, the tunnel allows for safe access and maintenance. Key utilities routed through the MUT include stormwater drainage, sewage, potable and recycled water lines, fire-fighting mains, and dedicated electrical and OFC cable banks. The arrangement ensures clear separation between wet and dry services, optimal maintainability, and long-term asset protection. The tunnel is equipped with a **gas-based fire protection system** and **jet fans** for efficient air circulation, ensuring safety and operational reliability throughout its length.

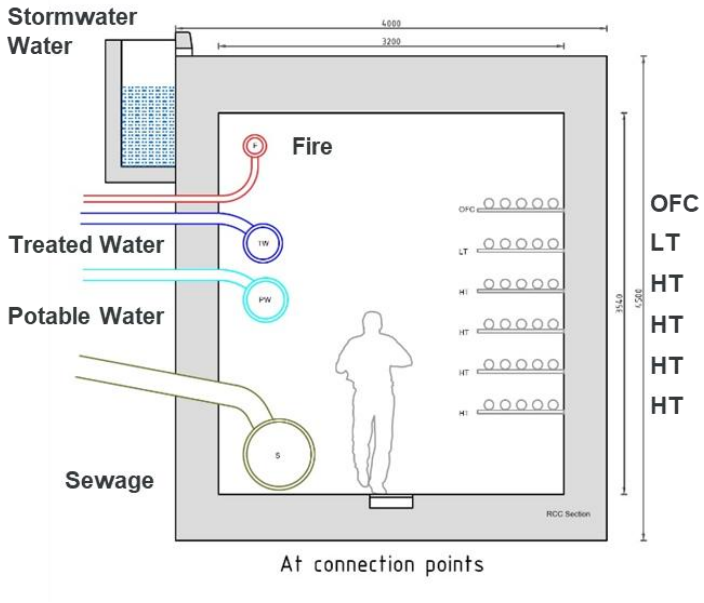


Figure 2.5 Proposed Multi Utility Tunnel Section

Access to the Multi-Utility Tunnel is planned through strategically spaced entry and exit points provided approximately every **60 meters** along the network. These access nodes consist of compact entrance chambers located on the footpath, featuring an entry manhole and a dedicated ventilation shaft to ensure safe passage and internal air movement. The chambers lead directly into the walkable MUT corridor, allowing maintenance personnel to navigate comfortably even around pressurised pipelines and cable racks. At specific locations, the design includes catwalks and adjusted pipe alignments for safe movement over sewage or low-level utilities. This arrangement ensures efficient, fully accessible maintenance without disturbing surface infrastructure or ongoing operations.

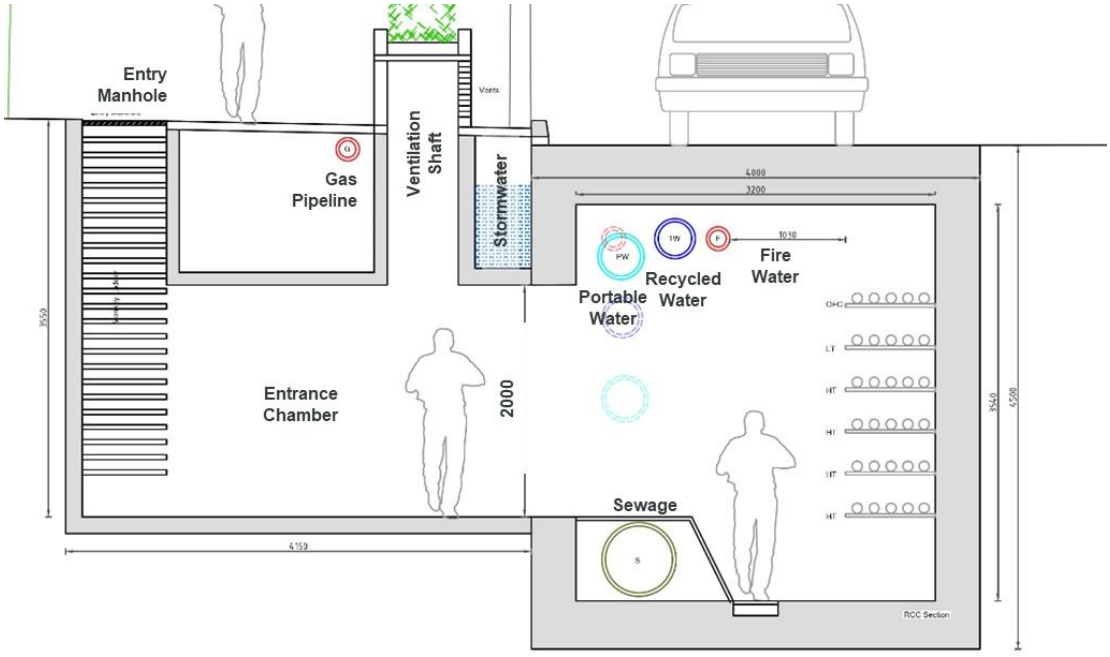


Figure 2.6 Proposed Multi Utility Tunnel Entrance Section

Figure 2.7 Proposed Multi Utility Tunnel Entrance Section

Connections from the Multi-Utility Tunnel to individual plots are planned through designated chambers placed at key intervals along the MUT network. These chambers serve as interface points where utility lines—such as power, ICT, water supply, recycled water, and fire-fighting services—branch off at the **plot level** without requiring surface excavation. At the master plan scale, each chamber is strategically located to ensure efficient distribution while keeping the main MUT corridor uninterrupted. This approach enables future buildings to connect seamlessly to the utility backbone, ensuring ease of maintenance, minimal disruption, and long-term flexibility for development across the campus.

2.4.2 Option 2 – Multi-Utility Tunnel (Periphery)

Option 2 proposes constructing the Multi-Utility Tunnel along the **peripheral roads** of the campus, with all technical specifications and design standards remaining identical to those described earlier—only the alignment differs. However, this alternative presents several challenges: the overall network length increases to **3 kms**, leading to higher construction and

lifecycle costs; the peripheral roads predominantly have **narrow rights-of-way of only 7–9 m**, offering limited space for tunnel construction and staging; and these edges already contain dense layers of **existing utility infrastructure**, making diversion and construction significantly more complex. As a result, while feasible, the peripheral alignment is comparatively less efficient and more cost-intensive than the primary MUT option.

Figure 2.8 Proposed Multi Utility Tunnel (Peripheral) Network

2.4.3 Option 3 – Conventional Utility Ducts

The third option explores a conventional utility duct network, where all essential services are accommodated in smaller ducts laid beneath the road or footpath. Both alignment strategies—**major internal roads** and **peripheral roads**—were examined for feasibility. When aligned along secondary and peripheral roads, the network extends to **3 kms**, increasing the overall cost and complexity. Additionally, most peripheral edges have **restricted ROWs of only 7–9 m**, forcing the ducts beneath the carriageway and limiting working space during installation. These stretches also carry dense layers of **existing infrastructure**, making diversions difficult and raising construction risks. A refined version using major internal roads reduces the

network to **2.3 km,** same as the main alignment of MUT, but still retains the fundamental limitations of a duct-based system.

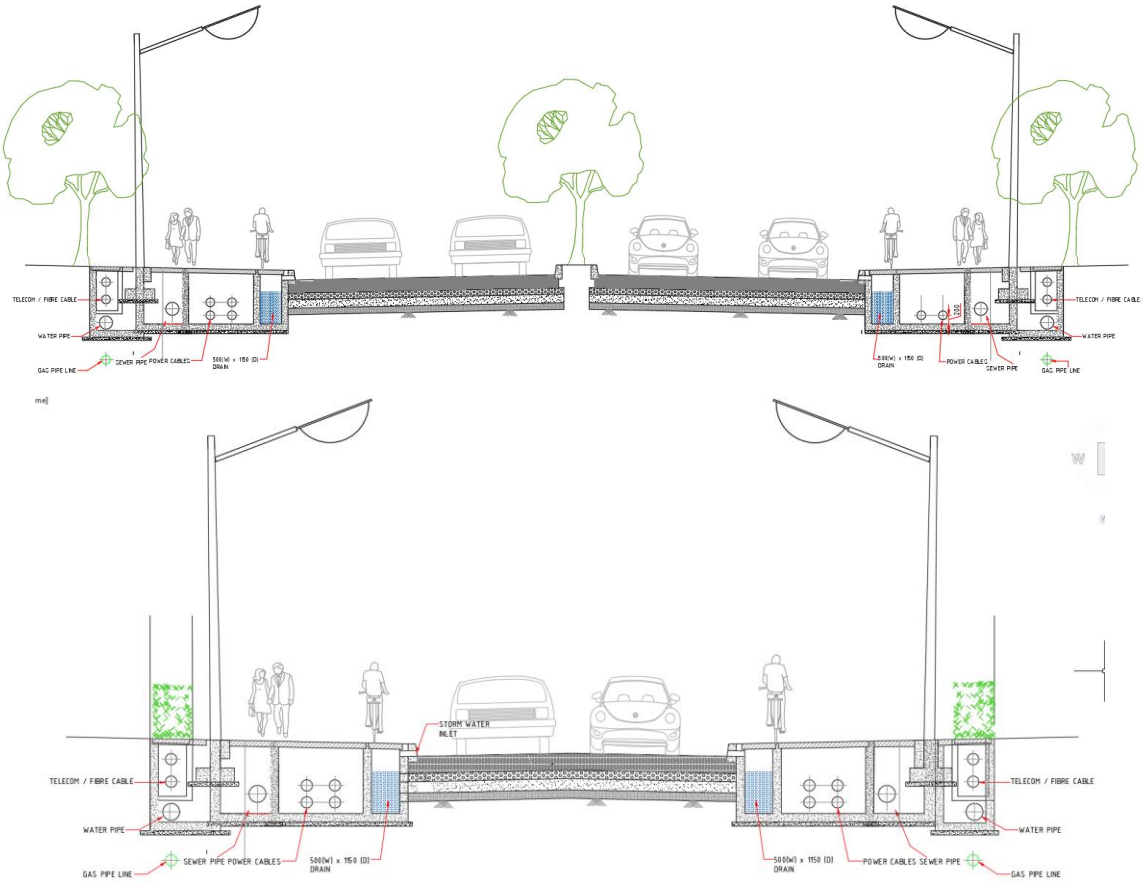


Figure 2.9 Proposed Road Sections of 24m ROW (above) and 18m ROW (below) integrating the conventional duct system.

2.4.4 Comparison

Aspect	Multi-Utility Tunnel (MUT) – Main Alignment	Multi-Utility Tunnel (MUT) – Peripheral Alignment	Conventional Utility Duct Network – Main Alignment
Integration with Existing Utilities	Existing utilities remain mostly undisturbed; new MUT carries consolidated utilities.	Higher interference with existing utilities due to dense networks on peripheral roads.	Existing networks replaced by new ducts; temporary networks required during construction.
Network Planning	Shorter (2.3 Km), efficient routing with direct connectivity between major nodes.	Network length increases to 3 km, making layout less efficient and costlier.	Utilities remain fragmented; coordination across ducts becomes complex.

Aspect	Multi-Utility Tunnel (MUT) – Main Alignment	Multi-Utility Tunnel (MUT) – Peripheral Alignment	Conventional Utility Duct Network – Main Alignment
Road Cutting in Dense Areas	Once built, future maintenance stays inside the tunnel, avoiding road cuts.	Peripheral roads are narrow (7–9 m), increasing risk of traffic disruption during construction.	Frequent excavation required, especially under narrow lanes and built-up edges.
Traffic & Urban Disruption	Minimal long-term disruption; works stay underground.	Higher construction-phase disruption due to limited road width and surface constraints.	Repairs often create bottlenecks in congested streets.
Utility Conflict Management	Clear separation reduces clashes between utilities.	High conflict likelihood because peripheral roads already contain multiple utility lines.	High risk of utilities damaging one another during works.
Maintenance in Constrained Spaces	Walkable tunnel ensures safe access even in dense areas.	Maintenance access remains possible but more difficult due to alignment beneath narrow and busy edges.	Maintenance is difficult where ROW is small, and excavation is required.
Upgrading Aging Infrastructure	Upgrades can be done inside the tunnel without surface disturbance.	Upgrades feasible but less efficient due to longer network and constrained edges.	Upgrading requires repeat trenching in built-up areas.
Right-of-Way Optimization	Optimizes use of limited land; fits well into existing ROW.	Poor ROW availability along edges (7–9 m) creates major construction and staging constraints.	Ducts compete for limited underground space, causing congestion.
Service Reliability	Faster detection and repair improve reliability.	Reliability remains high but maintenance challenges increase with longer alignment.	Delayed repairs due to excavation logistics.
Urban Redevelopment Support	Supports smart-city upgrades like ICT, district cooling, and smart sensors.	Supports redevelopment but with higher cost and complexity.	Harder to integrate new technologies without reconstruction.
Lifecycle Cost in Dense Cities	Higher initial cost, but lower lifecycle cost due to minimized disruptions.	Higher initial and long-term cost due to longer length and ROW constraints.	Lower upfront cost but very high cumulative maintenance costs.
Cost Comparison (Roads + Utility Structure)	INR 100 Cr.	INR 134 Cr.	INR 41.78 Cr.

2.5 WATER SUPPLY SYSTEM

2.5.1 Proposal for Water Supply

2.5.1.1 SOURCES OF WATER SUPPLY

SEEPZ SEZ Area is in Mumbai. Currently, the Water is supplied by MCGM and distributed at a rate of 3600 CUM per day by MIDC.

Currently, the SEEPZ SEZ area faces a water shortage and is unable to fulfil the daily water demand.

MCGM is the main source of water and can fulfil the future water demand as well.

An alternative water source also needs to be identified to meet the future water demand. The following water sources can be utilized for future water demand.

- Lake
- Rainwater Harvesting and Reuse
- Borewell
- STP Treated water for Flushing and Landscape/green area

2.5.1.2 WATER DISTRIBUTION

Water distribution shall be done based on the individual building or area water demand. Water supply distribution pumps' capacity shall be based on the future water demand of the entire area. Similarly, a water supply network shall be laid to supply water to individual buildings.

Valve and water meter chambers shall be provided before connection to the individual building. Valve chambers with isolation valves shall be provided at suitable locations in the distribution network. An air release valve shall be provided in the distribution network.

Water tank with approx. 3 MLD capacity and Pump room located near to Dev Talav to be made functional and potable water will be supplied with continuous pumping system in phase 1 and in phase 2 additional 3 MLD water tank and pump room shall be constructed at the south easter corner of the site abutting Marol Maroshi Road, to meet the future water demand.

Ring main is proposed in the potable water supply distribution line, so that the water can be supplied from other direction in case on maintenance of 1 line.

2.5.1.3 FUTURE DEMAND

To meet the Future water demand of next 30 years and the maximum permissible FSI, water supply requirements shall be calculated based on the future occupant load and the industry requirements.

Tentative water requirement calculation is given in the table below

Table 2.2 SEEPZ Site water demand

SEEPZ Site water demand and Sewage Generation						
S.No.	**Description**	**No of Person or Area or No of Seat**	**Domestic Water Requirement per person or per sqm**	**Flushing Water Requirement per person or per sqm**	**Domestic Water demand in Liter**	**Flushing water Demand in Liter**
1	Staff	1,61,314	25	20	4032850	3226280
	Visitors	32263	10	5	322630	161315
2	Green Area	25000		6		150000
3	Washing Area	1000000		0.5		500000
4	Restaurant/ Commercial	5000	55	15	275000	75000
	Fire Fighting					454080
			Total water Demand		**4630480**	**4566675**
			Water Loss (10%)		463048	456668
					5093528	5023343
					5.09	5.02
			Total water Demand			**10116871**
					MLD	**10.12**

As per above calculations approx. 10.5 MLD of total water is required for the entire SEEPZ site including potable and recycle water.

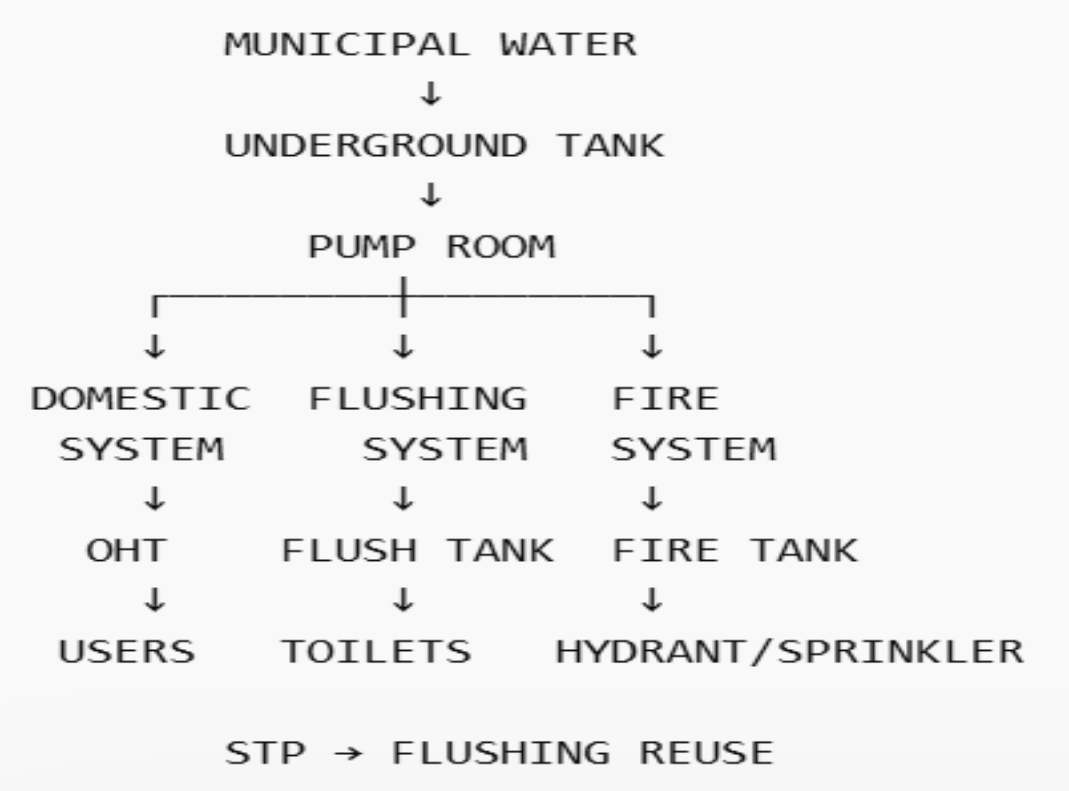
Water demand calculation will be updated in later stage based on the final FSI and occupants. Domestic and Flushing both type of water supply is considered in the calculation.

2.5.1.4 BASIC WATER SUPPLY & FIRE SYSTEM CONCEPT

The proposed water supply system is designed based on a total population of approximately 2 lakh with a total water demand of 10.5 MLD. Out of this, 3.6 MLD is supplied by the municipal authority, while the remaining demand is met through reuse of treated water from a 9 MLD Sewage Treatment Plant (STP). Considering the limited and intermittent municipal supply, an underground storage tank (UGT) is designed for 4-hour storage capacity to ensure continuous water availability. The stored water is then distributed through a centralized pumping system.

The system is divided into three main components: domestic water, flushing water, and fire water. Domestic water is supplied from the UGT to the overhead tank through dedicated domestic pumps and distributed by gravity to all fixtures such as washbasins, kitchens, and showers. Flushing water demand is met using treated water from the STP, which is stored in a separate flushing tank and pumped through an independent pipeline network to toilets and urinals, thereby reducing freshwater consumption.

In addition, a dedicated fire water storage tank is provided as per the guidelines of the National Building Code of India, ensuring adequate storage for firefighting requirements. The fire system is completely independent and includes a fire pump room equipped with main, standby, and jockey pumps to maintain constant pressure in the hydrant and sprinkler network. All systems are designed with separate pipelines, pumps, and controls to ensure reliability, efficiency, and compliance with standard engineering practices.



2.6 SEWERAGE SYSTEM

2.6.1 Sewage Generation

All the Sewer generated in the SEEPZ SEZ area is handled by the sewer network and septic tanks.

Sewer generation shall be considered based on future projected population and water demand for the population and visitors.

Total Sewer generation shall be considered is 80 % of Total water demand as per CPHEEO manual.

Tentative Sewer Generation for the SEEPZ site is given in the below table.

Table 2.3 SEEPZ Site water demand and Sewage Generation

S. No.	Description	No of Person or Area or No of Seat	Domestic Water Requirement per person or per sqm	Flushing Water Requirement per person or per sqm	Domestic Water demand in Liter	Flushing water Demand in Liter
1	Staff	1,61,314	25	20	4032850	3226280
	Visitors	32263	10	5	322630	161315
2	Green Area	25000		6		150000
3	Washing Area	1000000		0.5		500000
4	Restaurant/ Commercial	5000	55	15	275000	75000
	Fire Fighting					454080

S. No.	Description	No of Person or Area or No of Seat	Domestic Water Requirement per person or per sqm	Flushing Water Requirement per person or per sqm	Domestic Water demand in Liter	Flushing water Demand in Liter
			Total water Demand		**4630480**	**4566675**
			Water Loss (10%)		463048	456668
					5093528	5023343
					5.09	5.02
			Total water Demand			**10116871**
					MLD	**10.12**
			STP Capacity (80 % of water Demand) in Litre			**8093496.4**
			Infilteration 10 %			**809349.64**
					MLD	**8.9**
				Recycle/Reuse		**7.12**

As per the above Calculations approx. 9 MLD of STP capacity is required for the entire SEEPZ site for the future horizon of next 30 years. STP can be built in 2 phases with capacity of 4.5 MLD each. Suitable location for the Future STP is near to the existing STP.

2.6.2 Option 1 – Gravity Sewer System

Gravity sewer system works on the principle of natural flow, where sewage moves from higher to lower levels through pipelines laid at a proper slope. It is the most commonly used system due to its simple design, low cost, and minimal maintenance requirements

2.6.3 Option 2 – Vacuum Sewer System

The vacuum sewer system is centrally arranged within the multi utility tunnel, where sewage from multiple zones is collected through interface valves and transported via a common vacuum header to a centralized vacuum station connected to the STP.

Vacuum sewer system uses negative pressure to transport sewage through airtight pipelines. It is suitable for flat terrain, high groundwater areas, or locations where gravity flow is not possible, though it requires power and higher

Working Principle (Step-by-Step)

1. Sewage collects in chamber
2. Level reaches trigger point
3. Interface valve opens
4. Vacuum sucks sewage + air (slug flow)
5. Mixture reaches vacuum vessel
6. Air separated → vacuum pump removes air
7. Sewage collected → pumped to STP

2.6.4 Comparison

Table 2.4 Gravity Sewer vs Vacuum Sewer Comparison

Gravity Sewer vs Vacuum Sewer (Comparison Table)			
S.No	**Parameter**	**Gravity Sewer System**	**Vacuum Sewer System**
1	Working Principle	Flow by **gravity (slope)**	Flow by **vacuum (suction)**
2	Energy Requirement	✗ Not required	☑ Required (vacuum pumps)
3	Pipe Slope	Required	Not required
4	Excavation Depth	Deep excavation	Shallow excavation
5	Installation Cost	Low	High
6	Maintenance	Easy	Complex
7	Operation	Simple	Requires control system
8	Suitability	Normal terrain	Flat / coastal / rocky areas
9	Groundwater Issue	Problematic in high water table	Works well in high water table
10	Leakage Risk	Higher (joints/manholes)	Very low (airtight system)
11	Manholes Required	Yes	No (uses valve chambers)
12	Reliability	High	Moderate (depends on power)
13	Common Usage	Widely used (standard system)	Special applications only
14	Cost (Main Alignment)	INR 0.74 Cr.	INR 7.3 Cr.
15	Cost (Peripheral Alignment)	INR 1 Cr.	INR 10 Cr.

2.7 POWER SUPPLY

2.7.1 Load Forecasting

The built-up area, along with projected growth and population density across various clusters, forms the basis for assessing power demand and planning the electrical infrastructure. The calculation of SEEPZ's total power requirement accounts for multiple load components, including lighting, power, lifts, HVAC systems, common areas and parking, utilities, and road network demands.

Table 2.5 Load Forecasting

S. No.	PRODUCT MIX	POWER DEMAND NORMS	BASIS FOR NORMS ADOPTED
1	**LIGHTING LOAD**		
i)	Commercial	9.5 W/ Sq mtr.	ECBC-2017(Energy conservation building code)
ii)	Residential- Group & EWS housing	7.5W/ Sq mtr.	
iii)	Institutional	11.2 W/Sq mtr.	
iv)	Public / Semi Public	9.5 W/ Sq mtr.	
iii)	Mandatory areas (Green / Roads / open area / circulation)	3.0W/ Sq mtr.	
2	**COMMON AREA/PARKING LOAD**		
i)	Commercial	3.0W/ Sq mtr.	ECBC-2017(Energy conservation building code)
ii)	Residential- Group housing	3.0W/ Sq mtr.	
iii)	Institutional	3.0W/ Sq mtr.	
iv)	Public / Semi Public	3.0W/ Sq mtr.	
3	**HVAC LOAD**		
i)	Commercial	43.05 W/ Sq mtr.	As per power engineers hand book, Thumb rule for HVAC load calculation is 1Ton/200sqft or 1Ton/18.58sqmtr. Considering power consumption 0.8kW/ton, it will be 43.05W/ Sq mtr.
ii)	Institutional	43.05 W/ Sq mtr.	
iii)	Public / Semi Public	43.05 W/ Sq mtr.	
4	**LIFT LOAD**		
i)	Commercial	3 W/ Sq mtr.	For a Built-up Area of 16000 Sq mtr, 3 lifts are required. Gearless lift of rating 16kW/lift is considered, as per past project experience
ii)	Residential- Group housing	3 W/ Sq mtr.	
iii)	Institutional	3 W/ Sq mtr.	
iv)	Public / Semi Public	3 W/ Sq mtr.	
5	**TOTAL LOAD**		
i)	Residential- Multi-storey Building	50W/ Sq mtr.	As per Guidelines for Determination of Connected Load MahaVITARAN (Maharashtra Electricity Borad)
ii)	Non-Residential – Multi-storey Building	200 W/ Sq mtr.	

The built-up area for each land-use type and plot has been derived based on working population estimates, applicable FSI norms, and the provisions of NBC and ECBC. These parameters form the basis for estimating the total power demand for the project, with assessments carried out for each product mix to support the planning of the external electrical infrastructure.

Tentative Ultimate Power demand of Entire SEEPZ Zone

TABLE A: ULTIMATE POWER DEMAND FOR SEEP-SEZ

Land Use	BUA(Sq.m.)	Occupancy factor	Lighting load (watt/Sqm) As per ECBC-2017			Power, Equipment & Workstation load (watt/Sqm) As per MVVNL guidelines			HVAC laod (watt/Sqm) with Power demand of 0.8 kW/ ton as per power engineers handbook			Lifts load (watt/Sqm)			Common area/Parking load (watt/Sqm) As per ECBC-2017			Total Demand load (a+b+c+d+e+f) (watt/Sqm)	CL (MW)	D.F	Ultimate Demand Load (MW)
			CL	LF	DL (a)	CL	LF	DL (b)	CL	LF	DL (d)	CL	LF	DL(e)	CL	LF	DL(f)				
Commercial	448619	100%	9.5	1.1	9	97.44	5	19.5	43.1	1.429	30.1	3.00	10	0.3	3.0	5	0.6	59.2	26.54	0.75	19.9
TOTAL	448619																		26.54		21
Ultimate Power Demand Load (MW) at 11kV level considering 0.75 Diversity factor																					16

Total new construction load = 16MVA

Existing load =35MVA

Total load = 51MVA

2.7.2 Existing Power Network Data

At present, the existing demand load on the substation is about 35 MVA. With the proposed new construction, an additional load of approximately 16 MVA is anticipated, bringing the total projected demand to around 51 MVA. Considering the installed capacity of 60 MVA, the substation will operate at approximately 84% loading under the projected scenario. This indicates that the existing infrastructure is adequately sized and capable of reliably catering to the future load requirements, while still maintaining a reasonable margin for operational flexibility and system stability.

3. COST ESTIMATE

The project cost has been evaluated across multiple design options. These options include variations in the type of utility infrastructure, comparing a Conventional Utility Structure with a Multi-Utility Tunnel (MUT) system. Additionally, two alternative alignments for the utility network have been examined: one following the central road corridors and another aligned along the peripheral road network. Further, two sewage management approaches—gravity-based and vacuum-based systems—have also been assessed.

Based on the combined technical, operational, and financial analysis of all permutations, the recommended option is the construction of RCC roads with a centrally aligned Multi-Utility Tunnel network integrated with a vacuum-based sewage system.

RCC ROADS & PRE CAST MULTI-UTILITY STRUCTURE WITH VACUUM SEWAGE SYSTEM (CENTRAL ROAD)				
Parameter	**Unit**	**Total Quantity**	**Rate**	**Amount**
Site Level Road Length (24m)	m	1917.46	₹ 12,876.51	₹ 6,11,86,871.00
Site Level Road Length (18m)	m	262.34		
Site Level Road Length (15m)	m	973.52		
Site Level Road Length (9m)	m	640.8		
Plot Level Road Length (6m)	m	516.66		
Plot Level Road Length (7.5m)	m	441.04		
Pre Cast Multi Utility Tunnel	m	2300	4,07,120	₹ 93,63,76,249.32
Electrical Cables & Cable Trays	m	2300	22,422	₹ 5,15,70,020.25
Fire Water	m	2300	3,360	₹ 77,28,000.00
Water Supply	m	2300	10,080	₹ 2,31,84,000.00
Vacuum Sewerage System	m	2300	31,739	₹ 7,30,00,000.00
Solid Waste Management	Ton	17.30	₹ 15,02,890.17	₹ 2,60,00,000.00
CCTV Surveillance	m	3,250.00	₹ 3,026.77	₹ 98,37,011.00
Potable Water Tank - 3MLD with Pump Room	MLD	3.00	₹ 2,30,00,000.00	₹ 6,90,00,000.00
STP - 5MLD with SPS	MLD	5.00	₹ 4,96,15,000.00	₹ 24,80,75,000.00
ESS - 30MVa	kVA	30,000.00	₹ 3,800.00	₹ 11,40,00,000.00
Fire Tender Pavement Area (6m Wide)	sqm.	11,581.85	₹ 2,270.05	₹ 2,62,91,373.00
Skywalk Area	sqm.	10,974.60	₹ 70,818.42	₹ 77,72,03,835.50

RCC ROADS & PRE CAST MULTI-UTILITY STRUCTURE WITH VACUUM SEWAGE SYSTEM (CENTRAL ROAD)				
Parameter	**Unit**	**Total Quantity**	**Rate**	**Amount**
Paved Areas	sqm.	7,718.58	₹ 1,679.30	₹ 1,29,61,820.00
Green Areas (Site Development)	Acre	13.11	₹ 1,50,00,000.00	₹ 19,66,50,000.00
Bioswales Area (5m wide)	Rm	1,500.00	₹ 9,781.30	₹ 1,46,71,955.90
Retention Pond	sqm.	2,470.08	₹ 2,142.46	₹ 52,92,047.60
Rainwater Harvesting Tank	cum.	5,817.00	₹ 23,000.00	₹ 13,37,91,000.00
			TOTAL PROJECT COST	**₹ 2,78,68,19,183.57**

4. DECISIONS REQUIRED FOR MASTER PLAN FINALISATION

Before proceeding with the finalization of the master plan and associated engineering strategies, certain key decisions are required to ensure alignment on the proposed development framework. These decisions will guide the refinement of the design, optimization of utilities, and overall project implementation approach.

1. Confirmation on the inclusion of the proposed skywalk.
2. Selection of the preferred utility infrastructure: Multi-Utility Tunnel (MUT) or Conventional Utility System.
3. Selection of the sewage system approach: Gravity-based system or Vacuum sewage system.
4. Confirmation of the preferred utility alignment: Central alignment or Peripheral alignment.
5. Approval of the final optimized FSI and carpet area achieved.
6. Confirmation regarding the metro tunnel connectivity and the proposed skywalk connection.