Metro

February 24, 2026

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CHAIRWOMAN OF THE BOARD

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ITAMAR BEN MEIR

NTA CEO

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ZVIKA BROT

MAYOR OF BAT YAM,
REPRESENTATIVE OF THE LOCAL AUTHORITIES

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OSHRAT DAVID

ACCOUNTANT GENERAL

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Israeli Infrastructure Opportunities

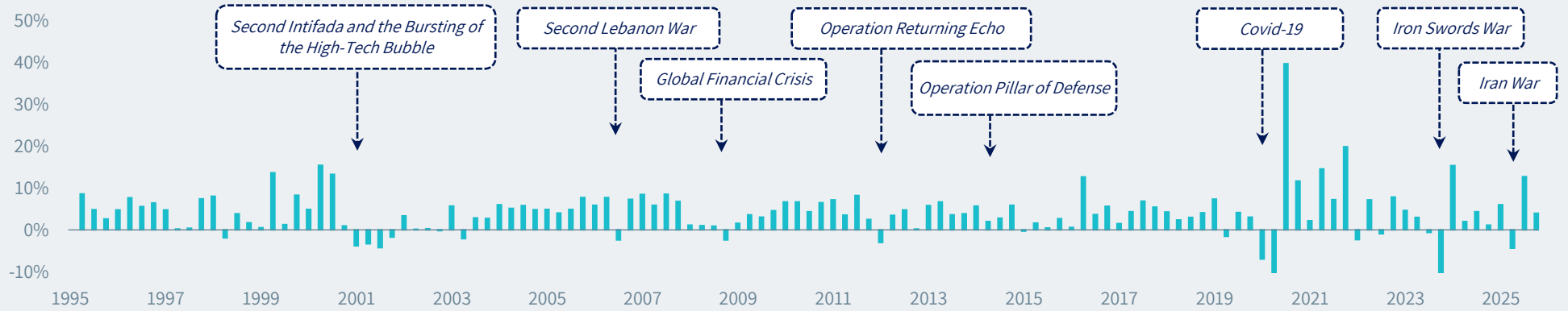
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Israel proves resilience through turmoil

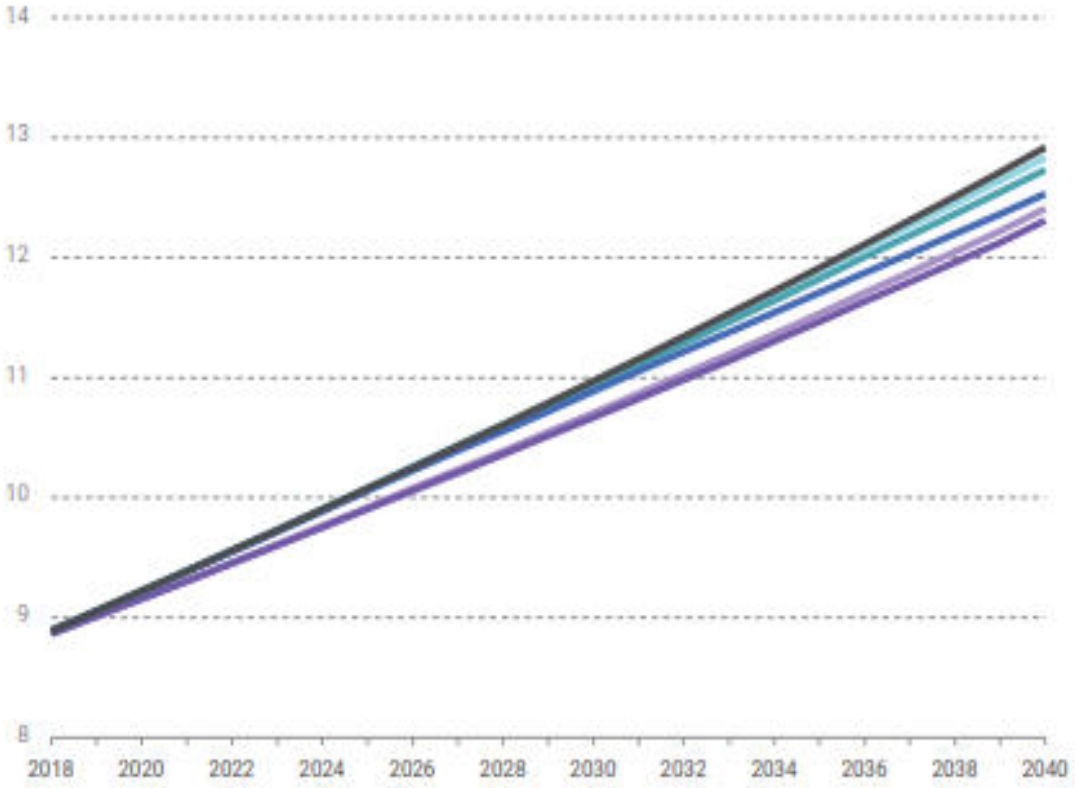
Real Quarterly GDP Growth Rate, 1995-2025 (%, annualized)



Real Quarterly GDP Growth Rate, 2020-Q2 2025 (%, annualized, seasonally adjusted data)



Population Growth



Israel's Population is set to increase to a number between 12.3 Million and 12.9 Million Citizens by the year 2040

That is between

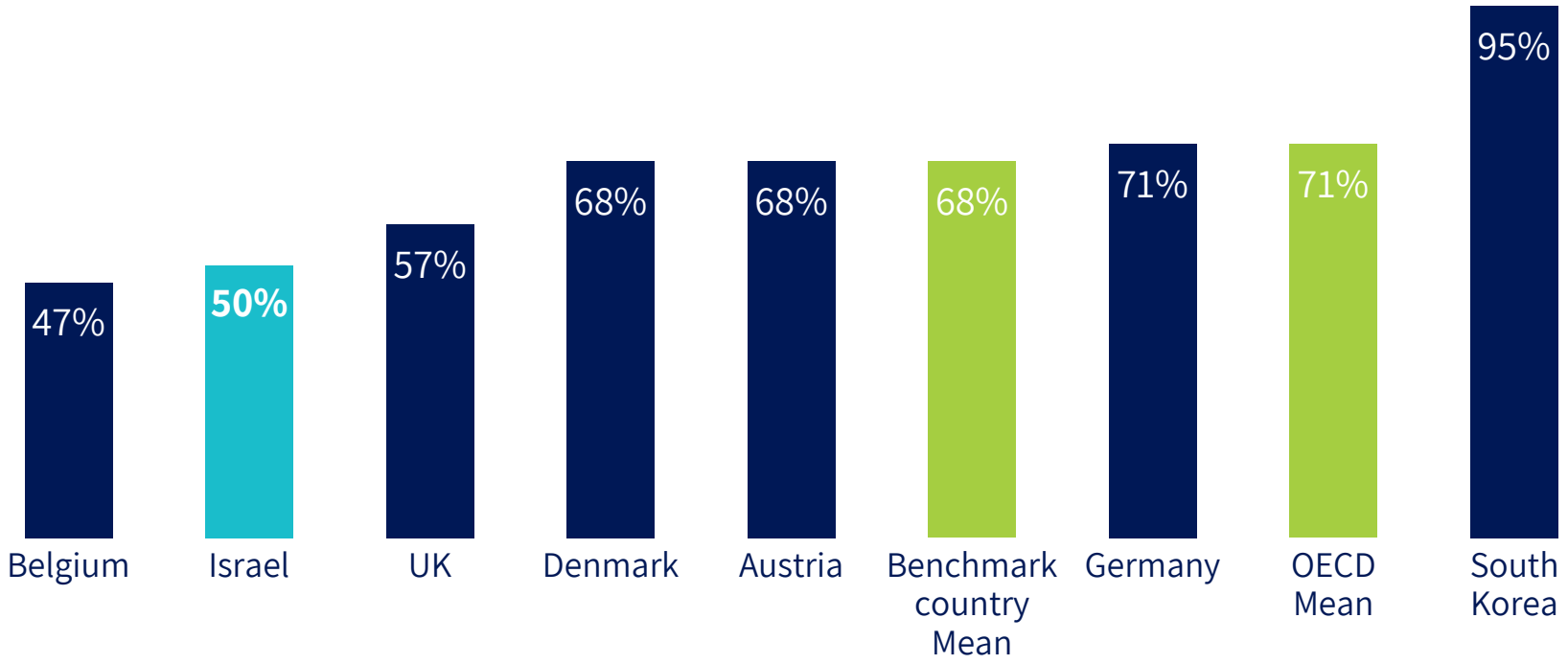
21%-27%

in 15 Years

Source: Alex Weinreb, Taub Center

Israel faces infrastructure deficit

Infrastructure Stock (% of GDP)





Israel Views Infrastructure as a Growth Generator

Expected investments in the coming decade:

NIS 446 Billion



Metro
NIS **180** billion



Roads
NIS **25** billion



Water Infrastructure
NIS **22** billion



Israel Railways
NIS **65** billion



Aviation
NIS **15** billion



Construction (Health, defense, incarceration)
NIS **22** billion



LRT
NIS **65** billion



Power Generation
NIS **47** billion



Waste
NIS **5** billion

According to the Prime Minister's Office, 2025

Complementary Airport to Ben Gurion Airport

- 20,000,000 Passengers
- The tender is structured as a Public-Private Partnership (PPP) tender
- The airport will be operated by a private concessionaire
- We are seeking bidders with proven experience in airport operation

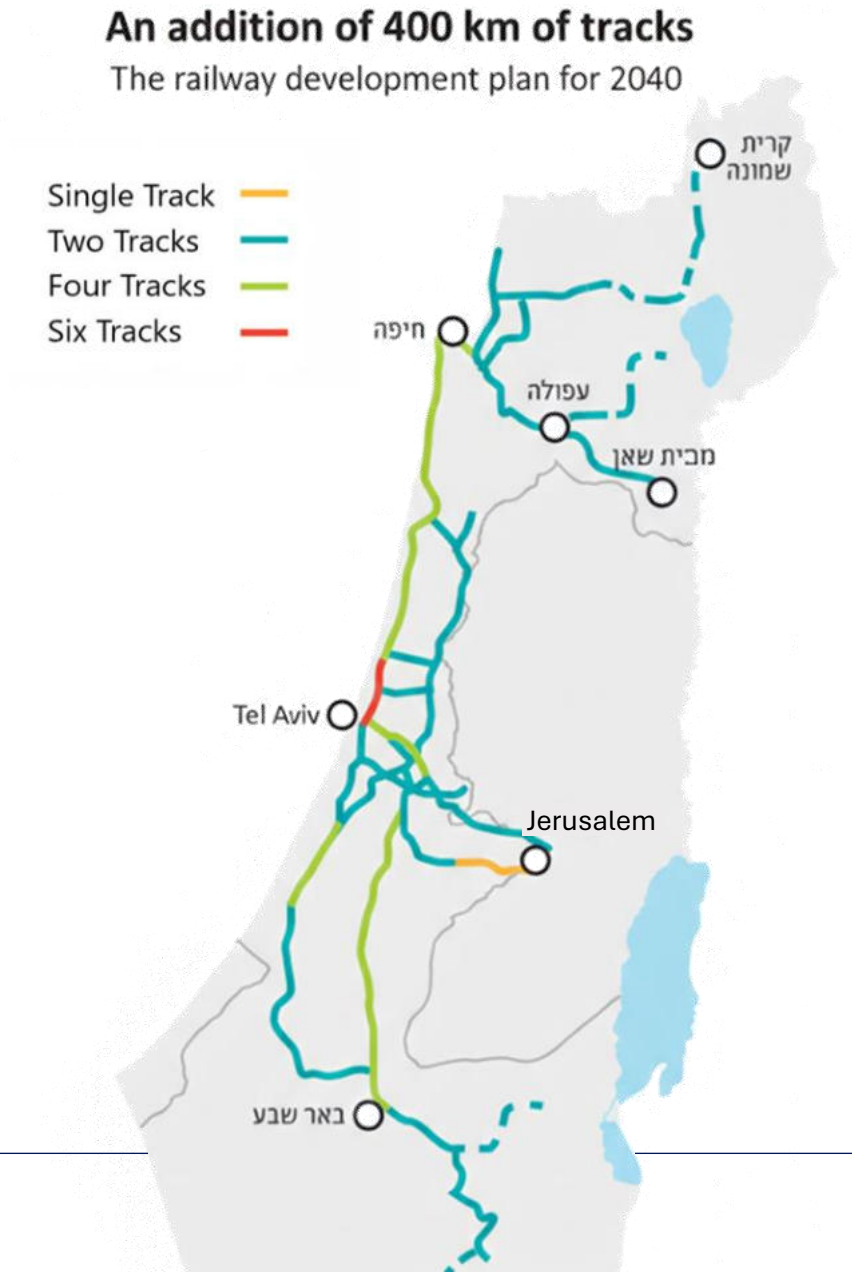


Israel Railways

NIS 65 Billion
in Heavy rail investment

- Electrification
- New Railroads
- Rolling Stock
- 2050 Expansion path

NIS 65 Billion



Light Rail Transit

NIS 65 Billion
in Light Rail investment

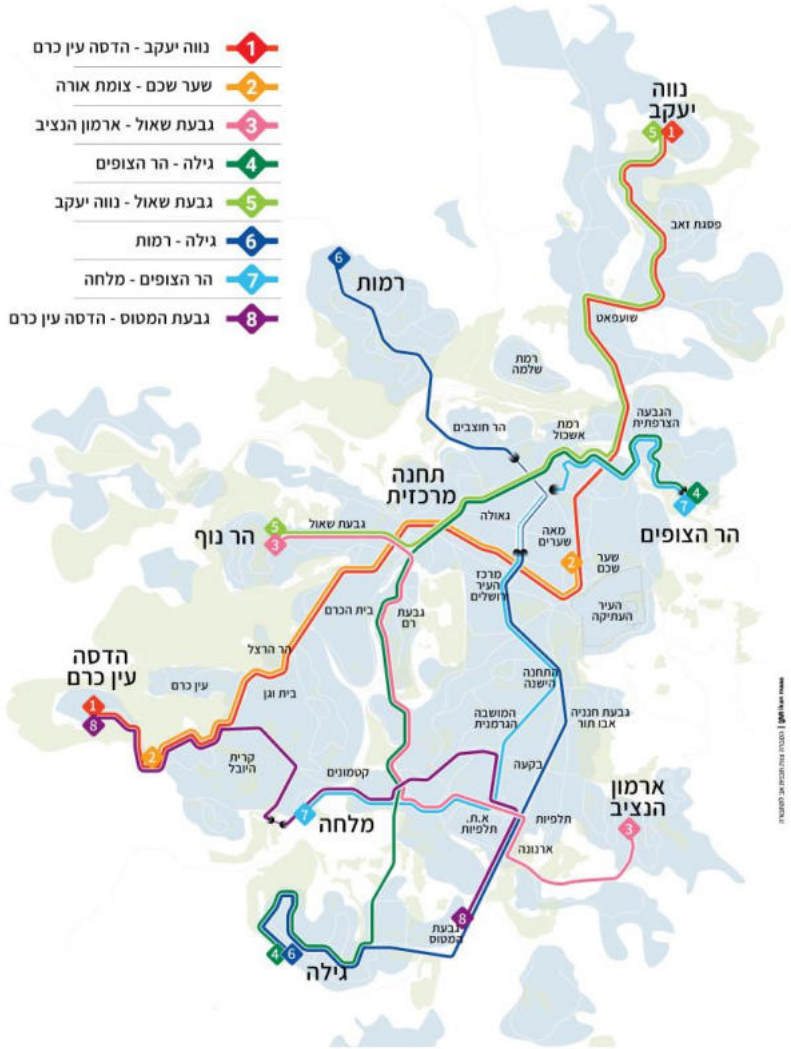
- Jerusalem LRT Network
- Dan Metropolitan Netwrok
- Haifa-Nazareth LRT Line

NIS 65 Billion

What we're looking for:

- Civil Engineering experts
- Tunneling experts
- Construction Contractors
- Train Operators

Jerusalem Light Rail Map



The Water Sector

Desalination Plants

- Emek Hefer 400 MMBTU
- Ashkelon 220 MMBTU
- Shafdan 165 MMBTU

NIS 10 Billion

By the end of 2026, With the addition of Ashkelon and Emek Hefer Plants, **90% of Israel's Sweetwater will be from Desalination!**

Water Authority Projects

- Expansion and upgrading of the national Transmission and distribution networks
- Expansion of wastewater treatment facilities

NIS 12 Billion

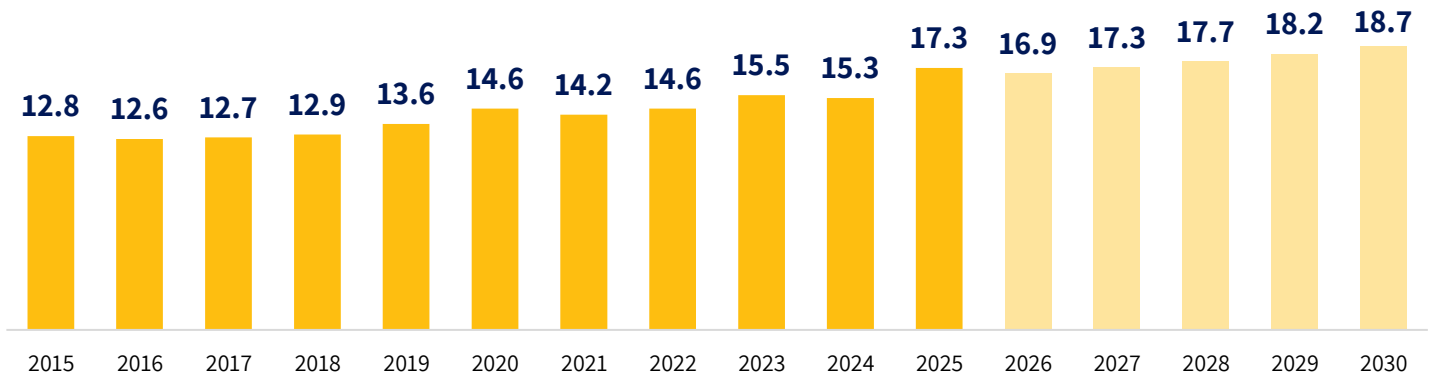
Overall NIS 22 Billion in Water investments

What we're looking for:

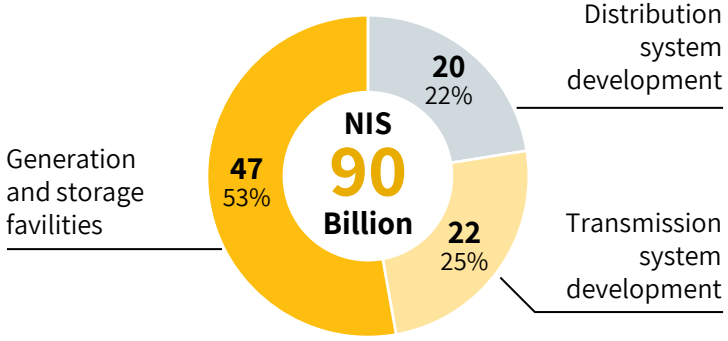
- Civil Engineering experts
- Desalination Experts
- Long-term operation experts
- Energy generation experts

The Energy Sector

An Ever-growing demand for electricity



13 combined cycle power plants (CCGT) with a capacity of 670–900 MW each by 2035



What we're looking for:

- Power station EPCs and Operators
- Solar Energy Experts
- Energy Storage Experts
- LNG Import and Storage Experts
- Hydrogen Experts
- Data Center experts

The Waste Sector

2026:

80%
goes to landfilling

20%
goes to treatment

Israel Plans to reverse the trend by 2033:

80%
treatment

20%
landfilling

Hence, by 2033 we expect to launch:

At least 10 Waste to Energy Plants

What we're looking for:

- Civil Engineering experts
- sorting Experts
- Long-term operation experts
- Waste to Energy experts



THANK YOU!

Would you like to stay updated?

Please send us email to
PPP.Projects.Israel@inbal.co.il
and join our mailing list!

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Accountant General

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YAIR EREZ

METRO AUTHORITY

NTA

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The Tel Aviv Metro Project

Government Readiness, Secured Funding, and Execution Opportunities



Yair Erez

Head of Metro Unit

The Metro Authority

Ministry of Transport

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THE ISRAEL METRO AUTHORITY

02/2026

Decade of Investment Shift



The Macro View:
The government of Israel is aggressively shifting its focus from road construction to mass transit systems.

Growing Capital Expenditure:
The state is executing an extensive investment plan in transportation infrastructure for the next decades.

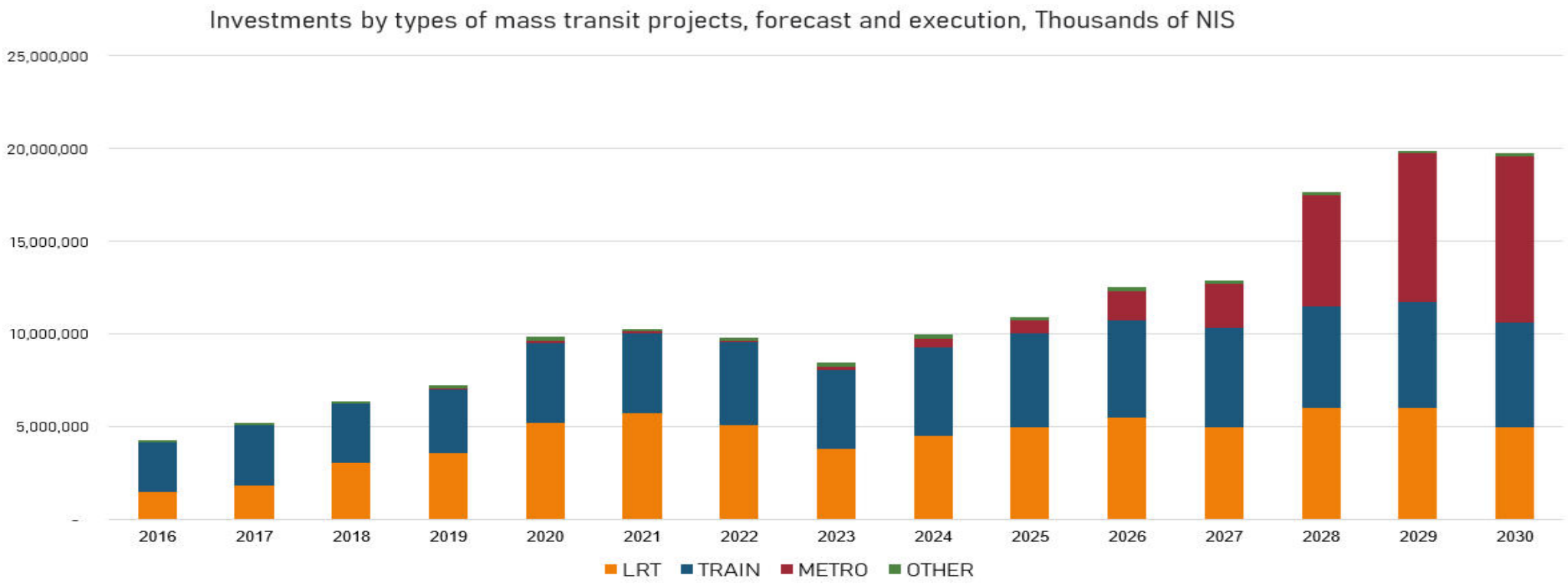
The Goal:
Closing the infrastructure gap compared to OECD countries and supporting Israel's rapid demographic and economic growth (approx. 2% annual population growth).

Investment Pipeline

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Budget Investment in Light Rail Transit (LRT), Heavy Rail, and the Metro is growing exponentially year-over-year, reaching tens of billions of NIS annually by 2030.



Tel Aviv Metro - Project Scope

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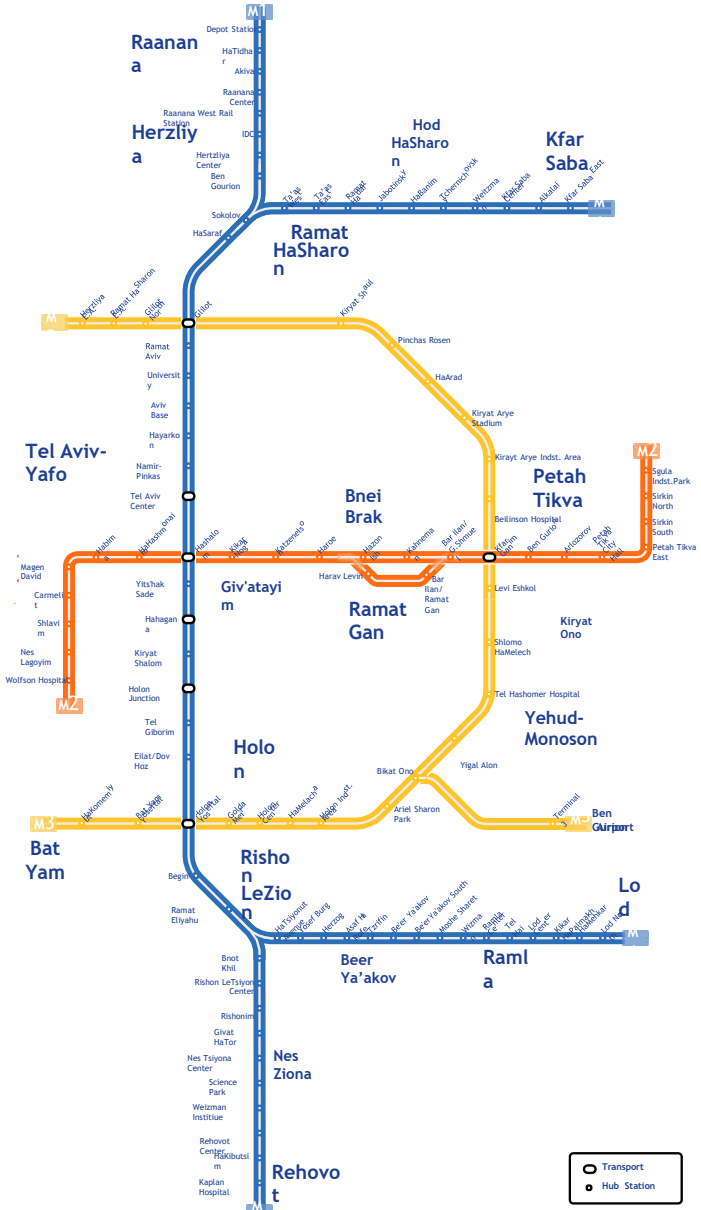
The Largest Infrastructure Challenge:

The most complex and largest transportation project ever carried out in Israel's history.

3 Lines (M1, M2, M3) spanning across 24 Local Municipalities

150 KM of underground track network

109 underground stations and 4 depots



Economic Impact:

Estimated to $8.5 Billion (approx. 25 Billion NIS) in economic benefits annually

Secured Funding & Government Commitment

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Total Estimated Budget
Approximately 180 billion NIS (roughly $50-60 billion).

Legislated Financial Stability
The project's budget is officially secured in valid legislation, ensuring stability for executing contractors.

Unique Funding Mechanism
- 50% State Budget: Direct government capital injection.
- 50% Value Capture : Funded through designated "Metro Taxes" and real estate development rights above and around stations.



Governance & Management



Dedicated Chain of Command
The government has established a robust, centralized management structure to oversee this mega-project.

The Metro Authority (MOT)
A dedicated government regulatory and oversight body designed to remove barriers, coordinate among ministries, and provide strategic backing to the executing company.

NTA (Metropolitan Mass Transit System)
The government-owned executing company is fully in charge of design, procurement, and construction.

The Regulatory Council
A supreme statutory committee empowered to resolve disputes between the project and local authorities or utility companies to prevent any execution delays.

The Metro Act

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A unique, independent legislative package aimed to guarantee the project's success



Funding package

- Project budget
- Funding mechanisms



Structure and management

- Establishment of the Metro Authority
- Government board of the project
- Supervision mechanism by the Israel Parliament



Regulation barriers

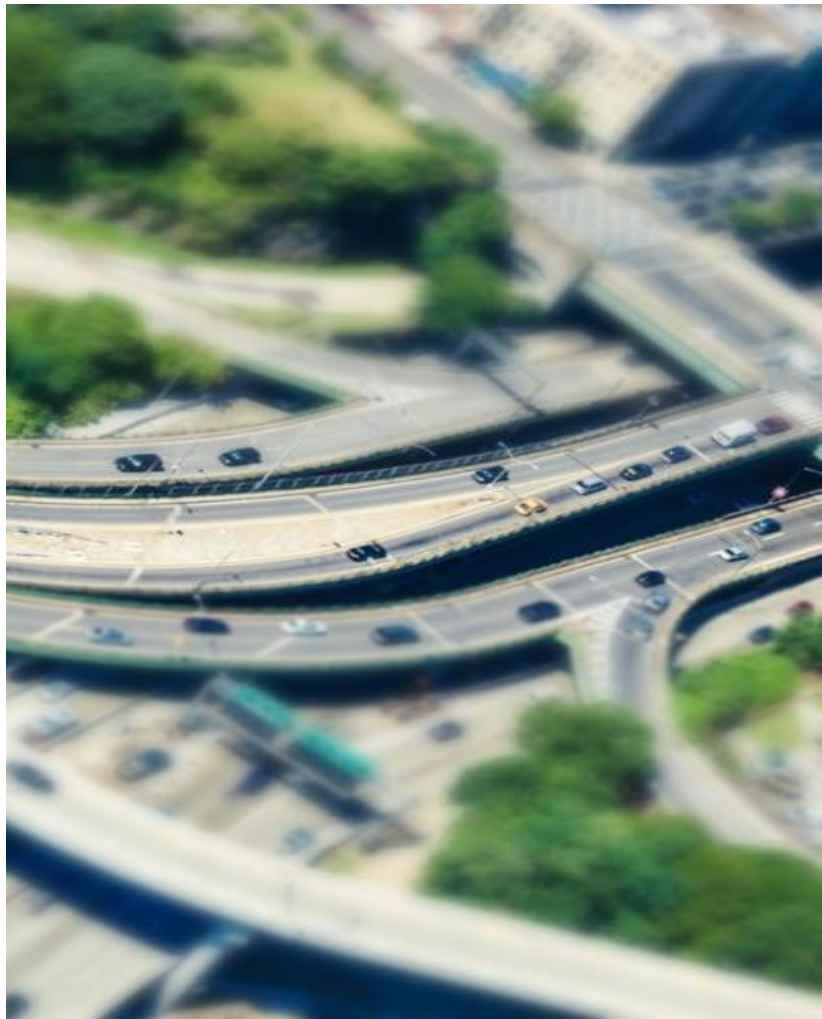
- Prioritize the project
- Remove bureaucracy and regulatory barriers

Removing Barriers: Fast-Tracking Execution

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The Metro Act provides executing contractors with special regulatory tools to mitigate common construction risk

- **Utility Diversion**: Implementation of short SLAs for utility coordination and automatic approvals if authorities fail to respond on time
- **Workforce**: Accelerated permit processes for bringing in foreign workers and international experts
- **Land & Property:** Fast-tracking land acquisition and statutory processes
- **Environmental & Civil Works:** Flexible protocols and tools for antiquities, tree preservation, noise regulations, and water protection coordination.



Future Horizons: Expanding the Metro & LRT

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Entering the Israeli market now opens the door to a massive pipeline of future urban transit projects

- **Tel Aviv Metro Expansion:** Additional planning is already underway for 2 more underground metro lines in the Gush Dan region.

- **Jerusalem Metro**
  Feasibility tests and initial planning for 2 underground metro lines in the capital.



Key National Heavy Railway Mega-Projects

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In addition to urban transit, Israel Railways is promoting massive national infrastructure tenders

- **High-Speed Tracks (Haifa - Tel Aviv)**
  A $6 Billion USD project to construct 68 km of double high-speed tracks.

- **High-Speed Tracks (Tel Aviv - Beer Sheva)**
  A $4 Billion USD project for a 106 km double track.

- **Jerusalem Line Extension**
  A 3.5 km underground tunnel and 2 underground stations in the capital.

- **The Ayalon Underground Corridor**
  Construction of a 30 km tunnel through Tel Aviv's main railway corridor, including 2 underground stations.



Thank You & Shalom!



Yair Erez
Head of Metro Unit
The Metro
Authority
Ministry of Transport
State of Israel

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THE ISRAEL METRO AUTHORITY

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MOSHE NAKASH

POPULATION AND
IMMIGRATION AUTHORITY

NTA

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Population & Immigration Authority
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Preparations for the Metro Project

Moshe Nakash

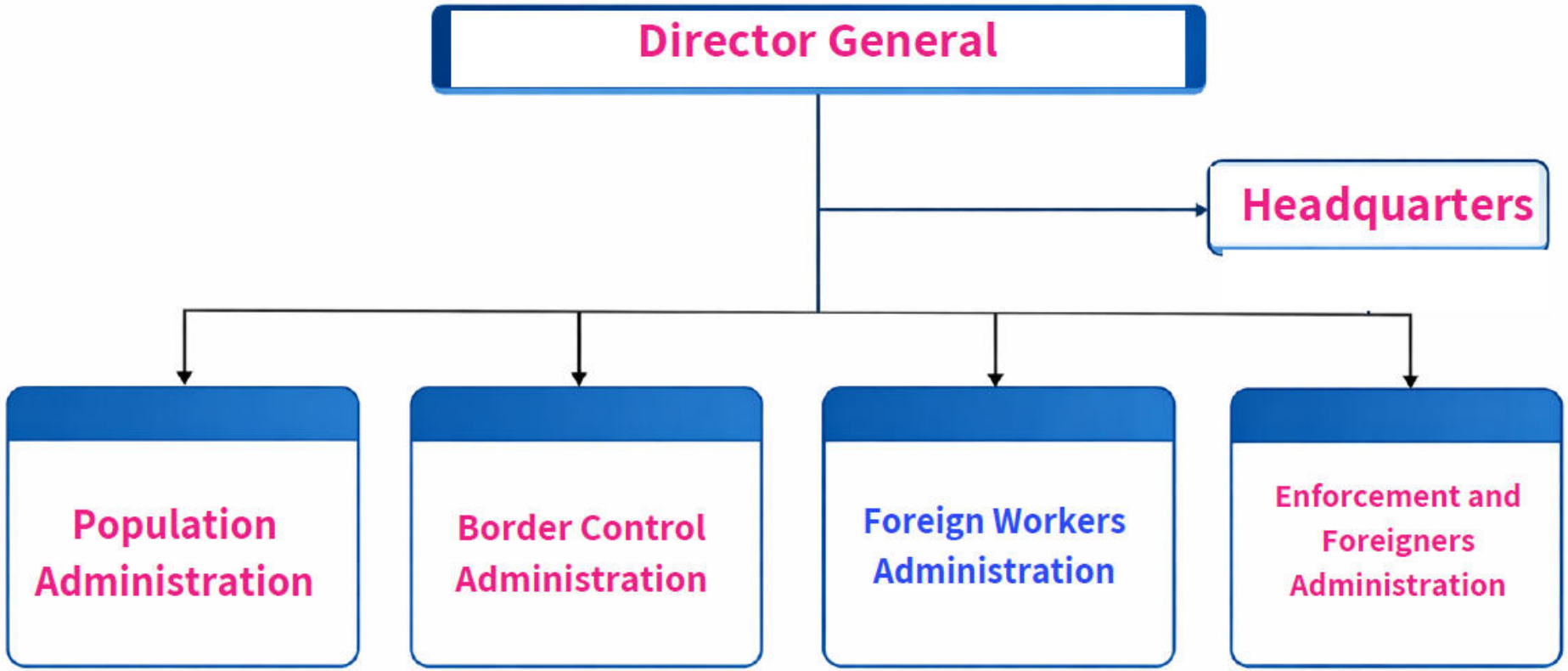
Director of the Foreign Workers Administration
Population & Immigration Authority (PIBA)

February 2026



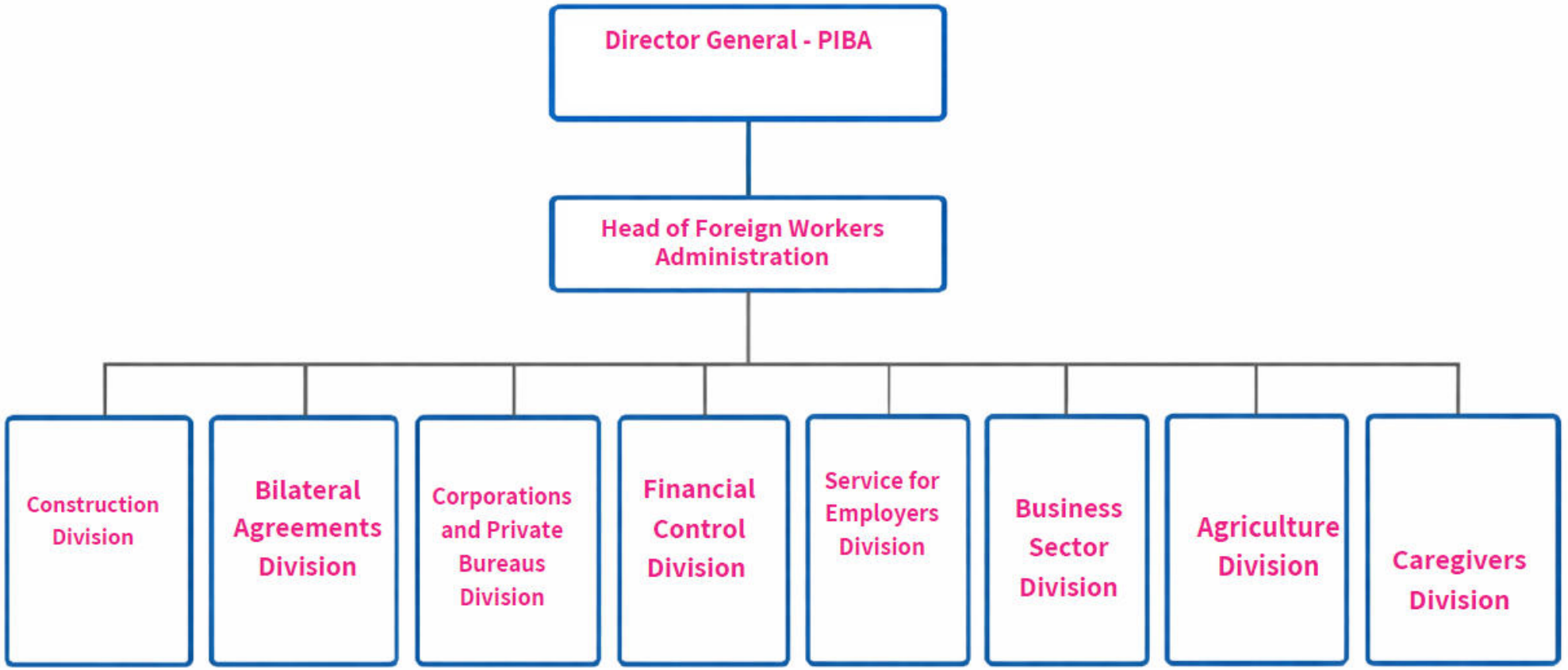
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opulation & Immigration Authority
سلطة السكان والهجرة

Organizational Structure – PIBA



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Population & Immigration Authority
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Foreign Workers Administration Structure



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Our vision:
Establishment of a new department for The Metro Project



Employer Service Unit:

- Processing requests for employment permits
- Ongoing service for employers



Foreign Worker Service Unit:

- Processing invitations for foreign workers to Israel.
- Processing visa
- extensions and re-entry visas.



Administrative Enforcement Unit:
Conducting hearings and administartive decisions regarding employers and foreign workers.



External Interfaces Unit:

Corporation with government ministries, Metro Authority, Enforcement Administration, and Legal Advisor.

- There is a "Call Center" available for professional, ongoing responses regarding rights, obligations, visas, permits, and employment conditions.
- Deposit Mechanism: A dedicated deposit system ensures the worker's departure at the end of their legal stay while safeguarding their social rights.

Prior Checks for the Workers:

- No criminal record.
- Medical examinations.
- No prior violations.
- No family members currently residing in Israel.
- Additional checks as required.

Types of Workers in the Metro Sector

Low Skilled Workers

- Maximum period of work permit - 63 months.
- No possibilty for staying of family members.

High Skilled Workers

- A unique expertise not available in Israel.
- Possibility for spouses to join the worker.
- Possibilty for extension work permit beyond 63 months.

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Population & Immigration Authority
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Main Principles

Regulatory Certainty

Digitization, Remote Service & Timelines

Government Policy

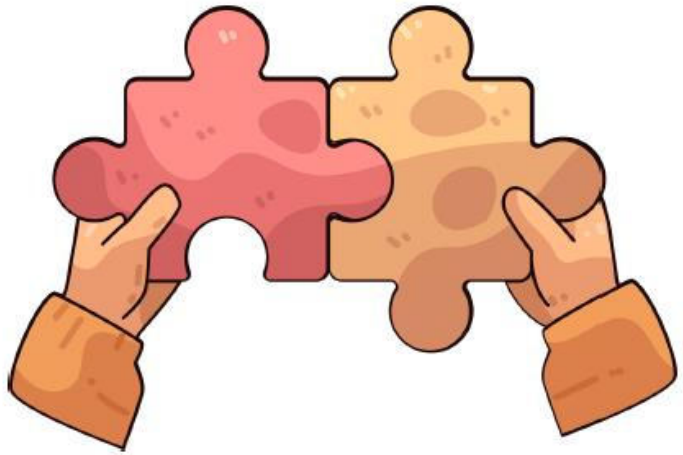
Defining a Separate Sector

Types of Workers

Control and Supervision

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Thank you and Good Luck!



PQ Infra 1 Conference



Zohar Zoller
Deputy CEO –
Head of Metro, NTA

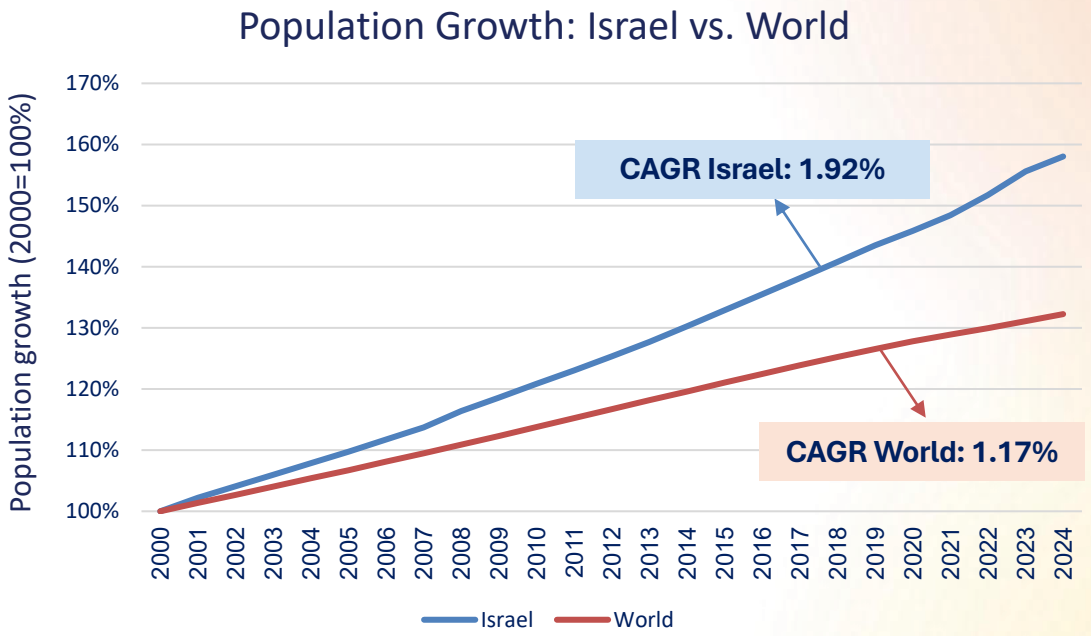
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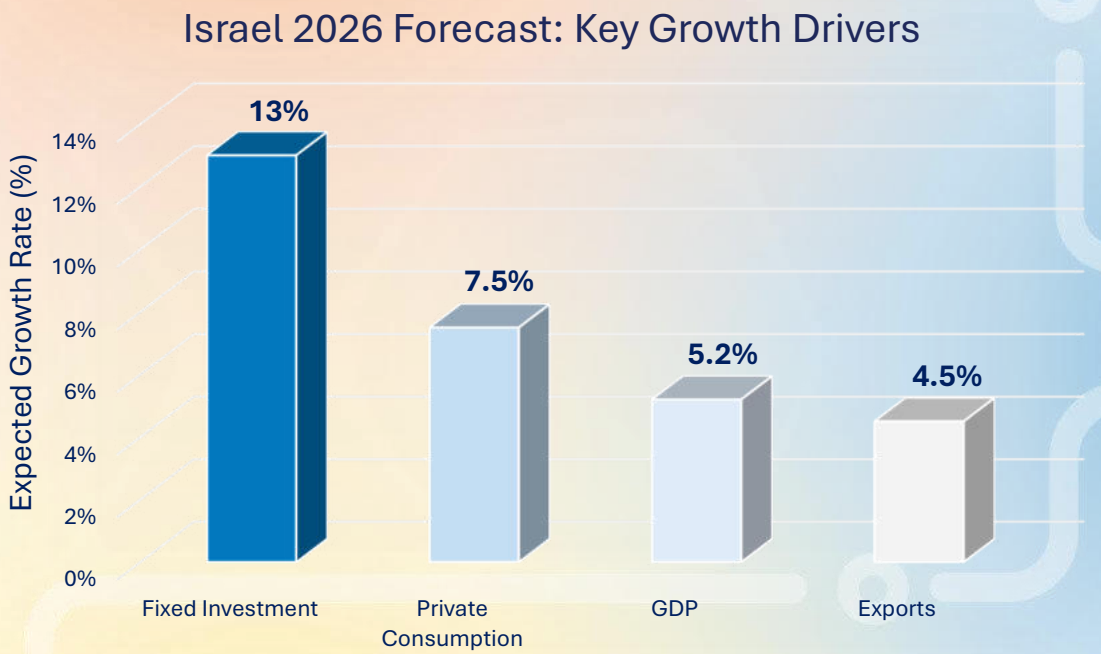
February 24, 2026

Disclaimer

The purpose of this presentation is to provide certain high-level information, as general reference only, regarding the Tel Aviv Metro Network Programme. NTA intends, in due course, to publish tenders for the execution of the works for the Programme. Nothing herein is intended or should be construed as: (i) imposing any obligation on NTA to publish any such tender or any similar tender; and/or (ii) imposing any obligation on NTA to include any specific terms, conditions or provisions in any tender documents (if any); and/or (iii) derogating from any tender process (if any) or from any tender documents (if any); and/or (iv) negating, replacing, amending or limiting any tender documents (if any). Without derogating from the generality of the foregoing, only formally published tender documents (if any) shall be binding on NTA and any reliance on any of the contents of this presentation shall be at the sole risk of the person/entity relying thereon

Israel 2026: Leading in Population and Economic Growth





Sources: Central Bureau of Statistics (official website), OECD, Bank of Israel, Research Department – Macroeconomic Forecast (January 2026).

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Israel's Main Metropolitan

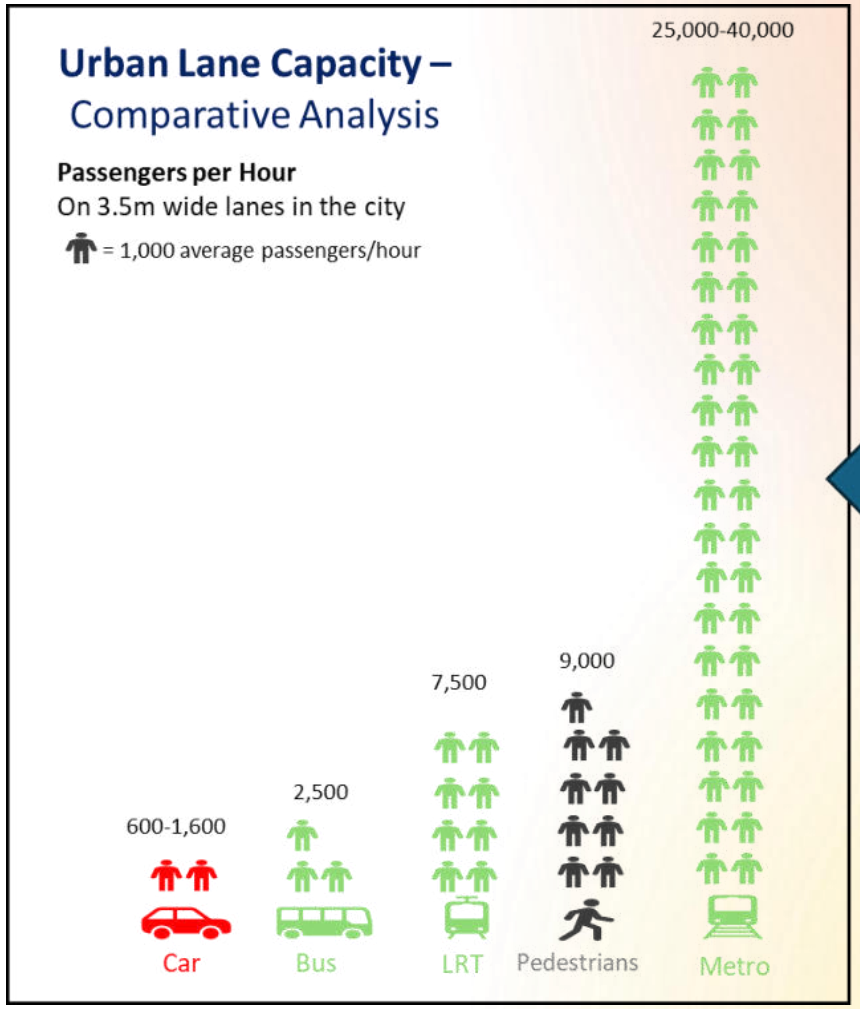
	Population	Jobs	Business product
Tel Aviv	44%	50%	62%
Jerusalem	15%	14%	12%
Haifa	10%	8%	10%
Be'er Sheva	4%	4%	4%

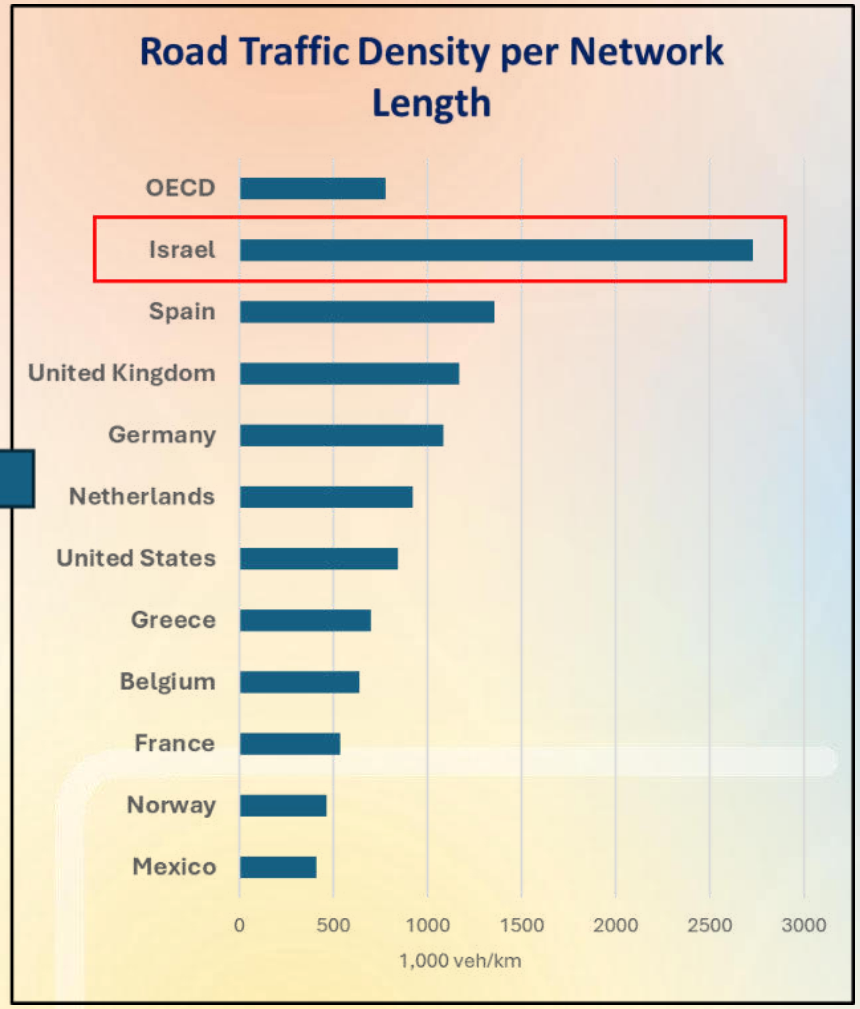


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Sources: Central Bureau of Statistics (official website).

The Metro: Solving Israel's Mobility Crisis





Source: Executive Summary of the report "The Economic, Social, and Urban Impacts of the Gush Dan Metro Network," authored by Prof. Yoram Shiftan, Head of the Israel Smart Transportation Research Center, Technion.

Source: Assessing incentives to reduce congestion in Israel, OECD.

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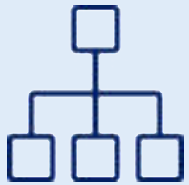
Tel Aviv Metro Act

In August 2024, the Israeli Government legislated **the Metro Act** to ensure the project's continued development.

The Key Provisions of the Metro Act:



Strategic Funding



The Metro Authority



Statutory and Decision-Making Authorities



Utility Coordination and Relocation Framework

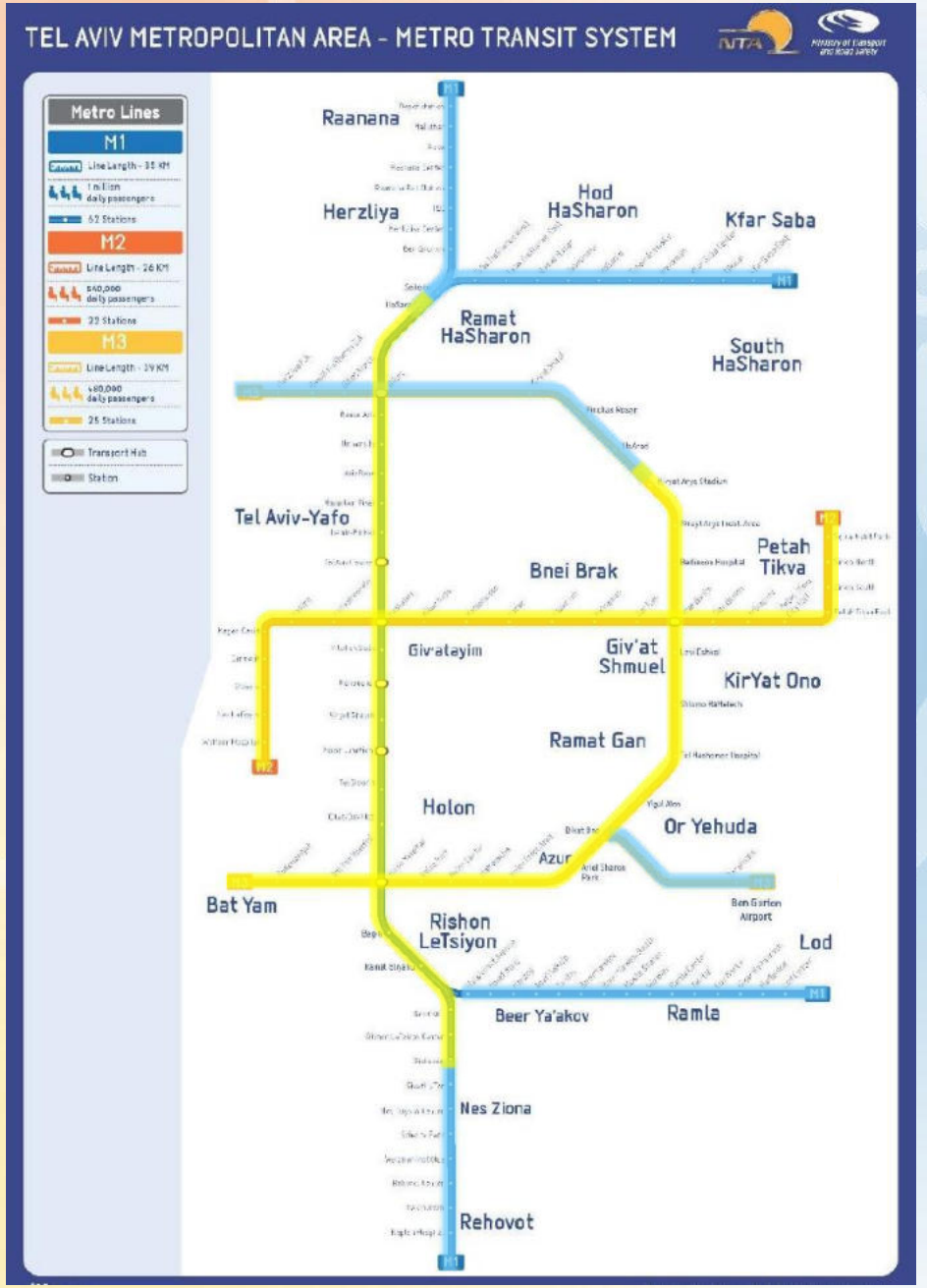


Regulatory Optimization

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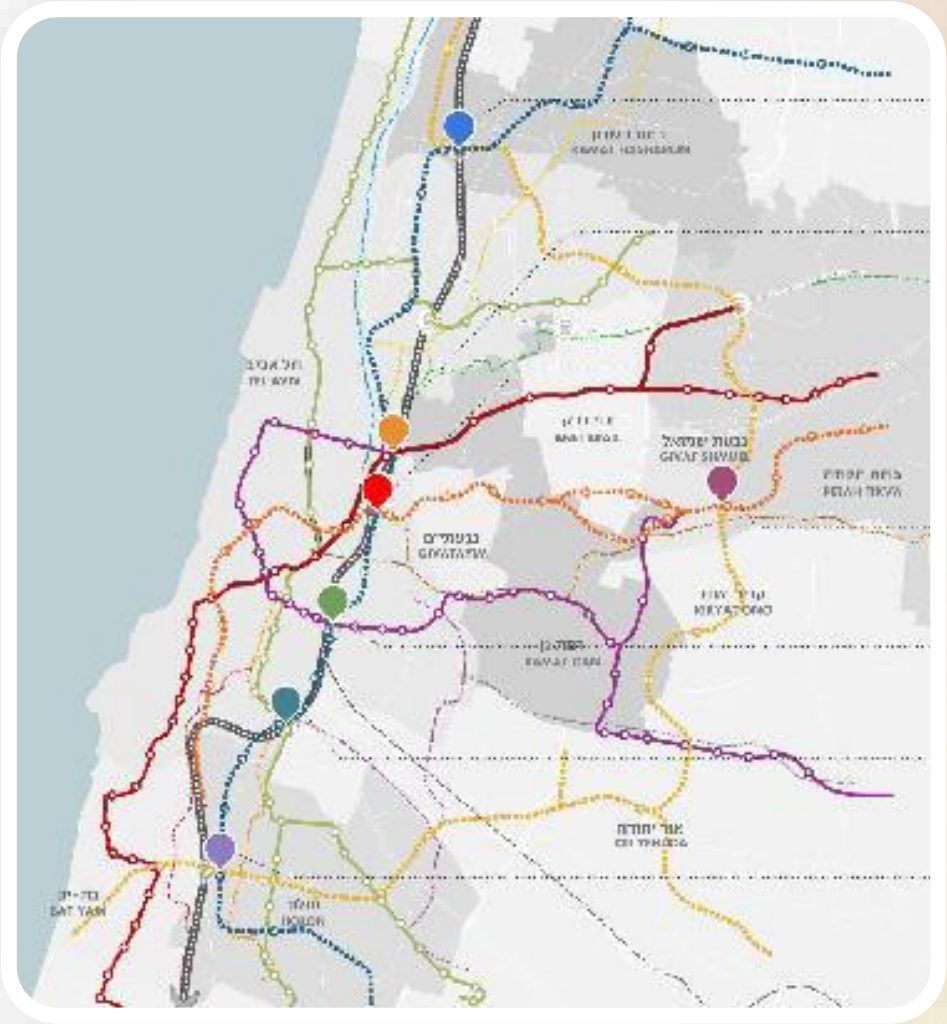
Tel Aviv Metro Programme

- **3** Lines **(M1 / M2 / M3)**
- **150** km Underground Network (double tunneling)
- **109** Stations
- **24** Municipalities
- **4** Depots
- **7** Transportation Hubs
- **4-5** Car Units
- **1500VDC** Rigid OCS
- **GOA4** Fully Automated Driverless Signaling



Phase A | Phase B

Transportation Hubs and LVC



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GLILOT
- M1
- M3
- IR
- IR 5-6
- Bus Station

KFAR GANIM
- M2
- M3
- LRT-P
- Bus Station

YOSEFTAL
- M1
- M3
- IR

SAVIDOR
- LRT-R
- LRT-P
- M1
- IR
- Bus Station

HAHAGANA
- LRT-P
- M1
- IR
- Bus Station

HASHALOM
- LRT-R
- M1
- M2
- IR
- IR 5-6
- Bus Station

MAAR BEN TZVI
- LRT-G
- M1
- IR
- Bus Station

Transportation Hubs and LVC

TLV CENTRAL

Transportation Hub

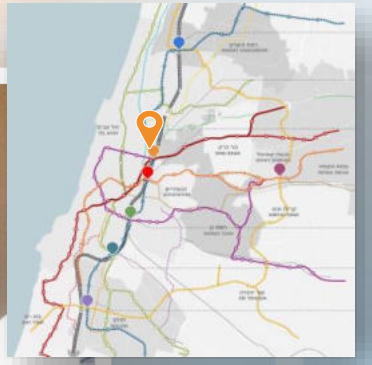
Plan area (Blue Line): approx. 300 dunams
Peak hour passenger forecast: 80,000

Employment area: 1,000,000 sq/ m

Transportation means:

- Light rail Red Line
- Light rail Purple Line
- Israel Railways
- Metro Line M1
- Bus terminal
- High-speed rails 5-6





Main planning team: HQ architects, project management: O.Sali

Transportation Hubs and LVC

HOLON JUNCTION

Transportation Hub

Plan area (Blue Line): approx. 270 dunams

Peak hour passenger forecast: 15,000

Employment area: 500,000 sq/ m

Transportation means:

- Green Line Light Rail
- M1 Metro Line
- Israel Railways
- Bus terminal and overnight parking



Main planning team: HQ architects, project management: O.Sali

Transportation Hubs and LVC

YOSEFTAL

Transportation Hub

Plan area (Blue Line): approx. 60 dunams

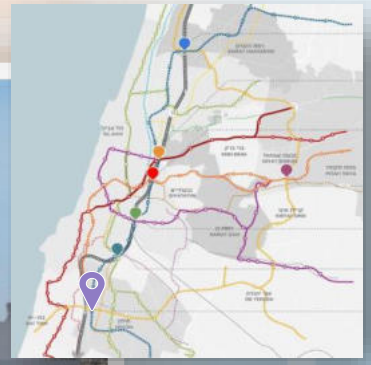
Peak hour passenger forecast: approx. 14,000

Employment area: 6,000 sq/ m

Transportation means:

- Metro Line M1
- Metro Line M3
- Israel Railways





Main planning team: Yaar-Korin architects, project management: O.Sali

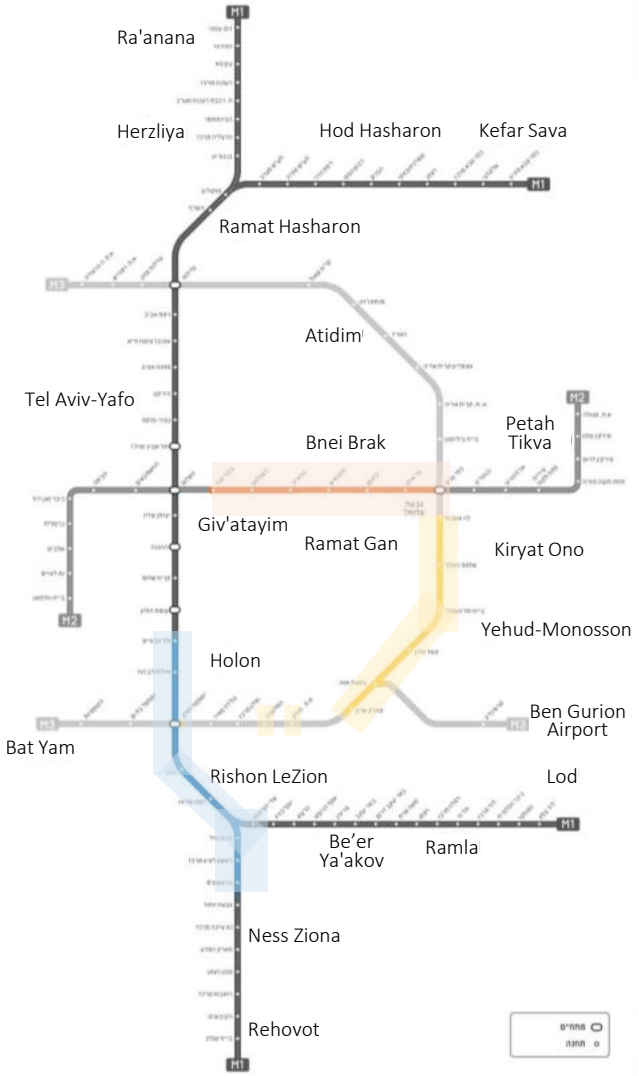
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Our Partners



Metro NTA

Execution Stage 1.1



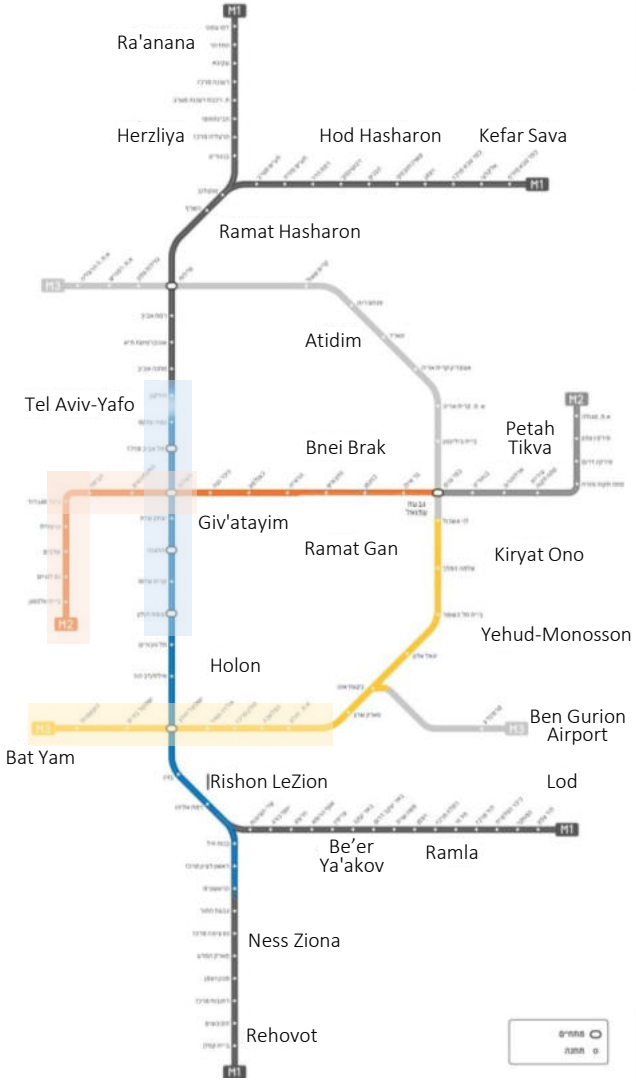
M3 Substage 1.1	Km	Boxes
Ha Melacha – Yigal Alon	**0**	**8**

M1 Substage 1.1	Km	Stations
Rishonim-Ramat Eliahu-Holon Junction	**14.2**	**9**

M2 Substage 1.1	Km	Stations
Kfar Ganim-Kikar Noga	**5.1**	**6**

M3 Substage 1.1	Km	Stations
Ariel Sharon Park-Shlomo Ha Melech + Depot Interchange	**7.4**	**5**

Execution Stage 1.2



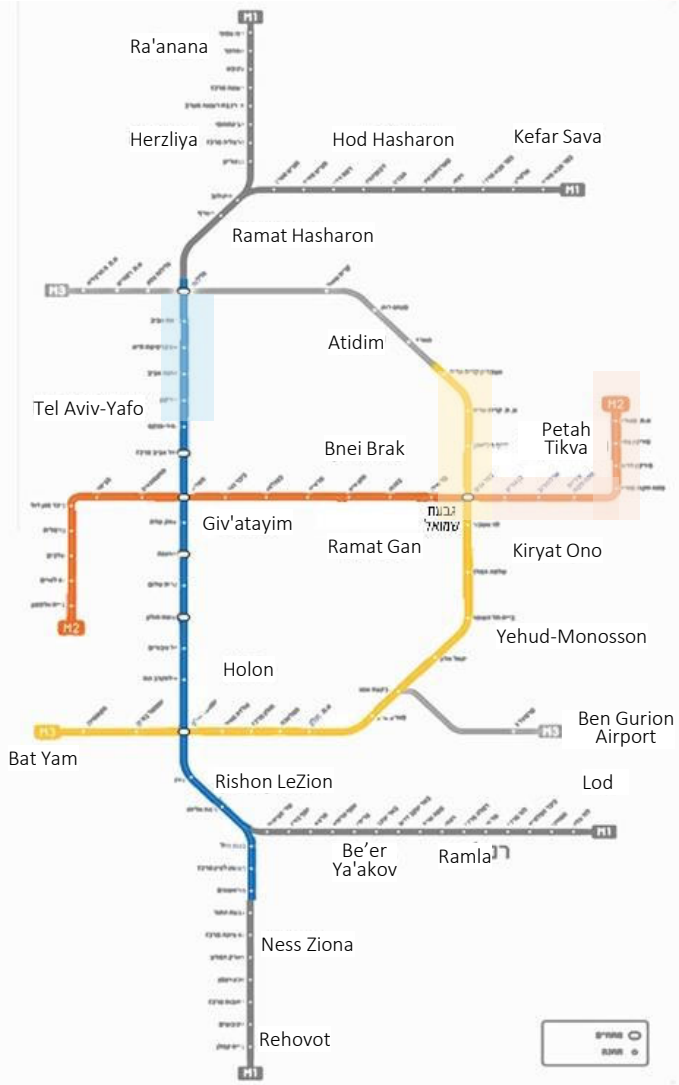
M1 Substage 1.2	Km	Stations
Holon Junction-Hayarkon	**7.9**	**7**

M2 Substage 1.2	Km	Stations
Wolfson-Kikar Noga	**9.3**	**8**

M3 Substage 1.2	Km	Stations
Bat Yam Terminus-Ariel Sharon Park	**8.7**	**6**

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Execution Stage 1.3



M1 Substage 1.3	Km	Stations
Hayarkon-Glilot	**5.5**	**4**

M2 Substage 1.3	Km	Stations
Kfar Ganim-Segula Depot	**7.6**	**7**

M3 Substage 1.3	Km	Stations
Hayarkon-Kfar Ganim-Shlomo HaMelecha	**7.9**	**5**

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Project Major Milestones

04/2026

Infra 1
PQ
Submission

Q3/2026

Infra 1
first WP
(M3-WP0)
publication

Q4/2026 – Q1/2027

Infra 1
first round of
WPs publication
(M1,M2,M3)

Q2/2027- Q4/2027

Infra 1
second round of
WPs publication
(M1,M2,M3)

Q4/2027- Q2/2028

Infra 1
Third round of
WPs publication
(M1,M2,M3)

Q2/2026

Infra 2
PQ
Publication

2027

Infra 2
Tender
publication

Metro NTA

Thank You & Shalom



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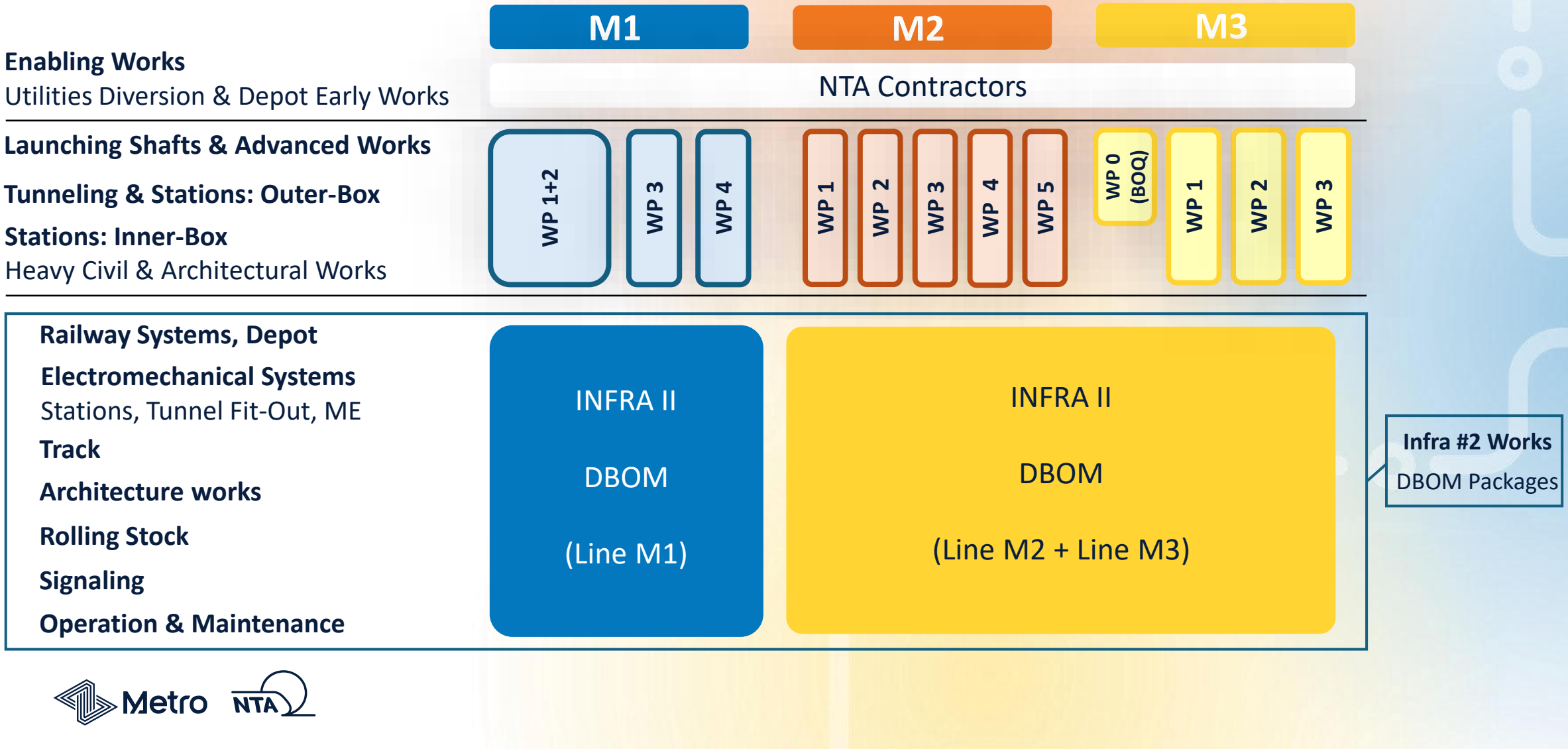
PQ Infra 1 Conference



Helen Maor
Procurement Director, NTA

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Procurement Strategy Scheme



A Pre-Qualification Process for the Two Types of Work Packages

Two Types of Infra #1 Work Packages

Type "A"

1. Experience in the Construction of TBM Tunnels
2. Underground Structure: Cut & Cover Experience

Type "B"

1. Experience in the Construction of TBM Tunnels
2. Underground Structure: Cut & Cover Experience
3. Underground Structure: Mined Experience

A proposal may be submitted for one Type or for both Types. In case of submission for both Types, a separate (stand-alone) submission must be submitted for each Type.

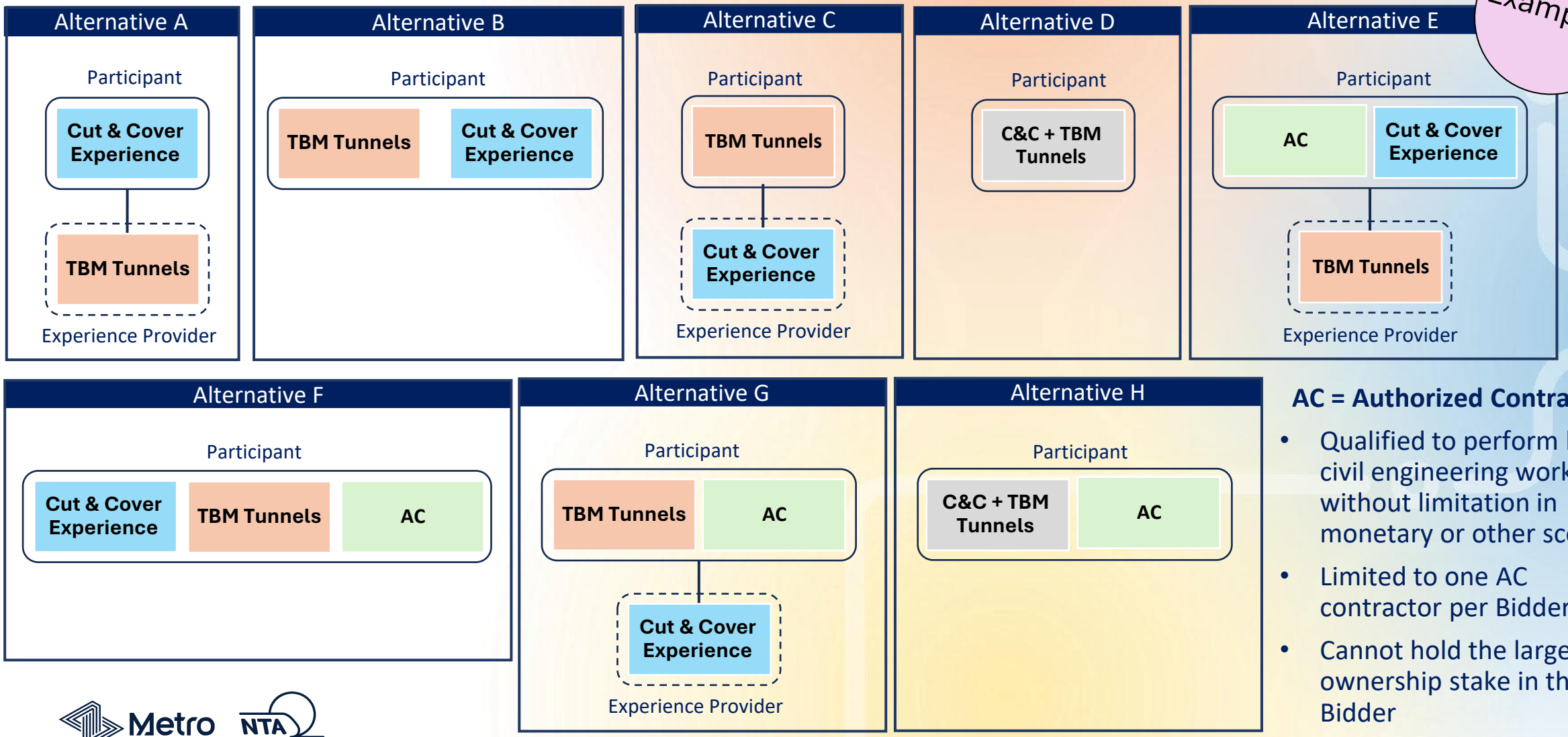
Participation in a Pre-Qualification Submission - Restrictions

- An Entity **may not participate in more than 1 PQ Submission** of each Type
- Participation in **both Types** of PQ Submissions: If a single Participating Entity wishes to participate in both Types of PQ Submissions (Type "A" and Type "B"), it can do so:
  1. with the **same Entities**; or
  2. **with different Entities**, provided however, that Entities participating in different (competing) Type "A" PQ Submissions, **may not cooperate and participate together** in the same Type "B" PQ, and vice versa

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Alternatives for Participant's Structure - Type "A"

Examples

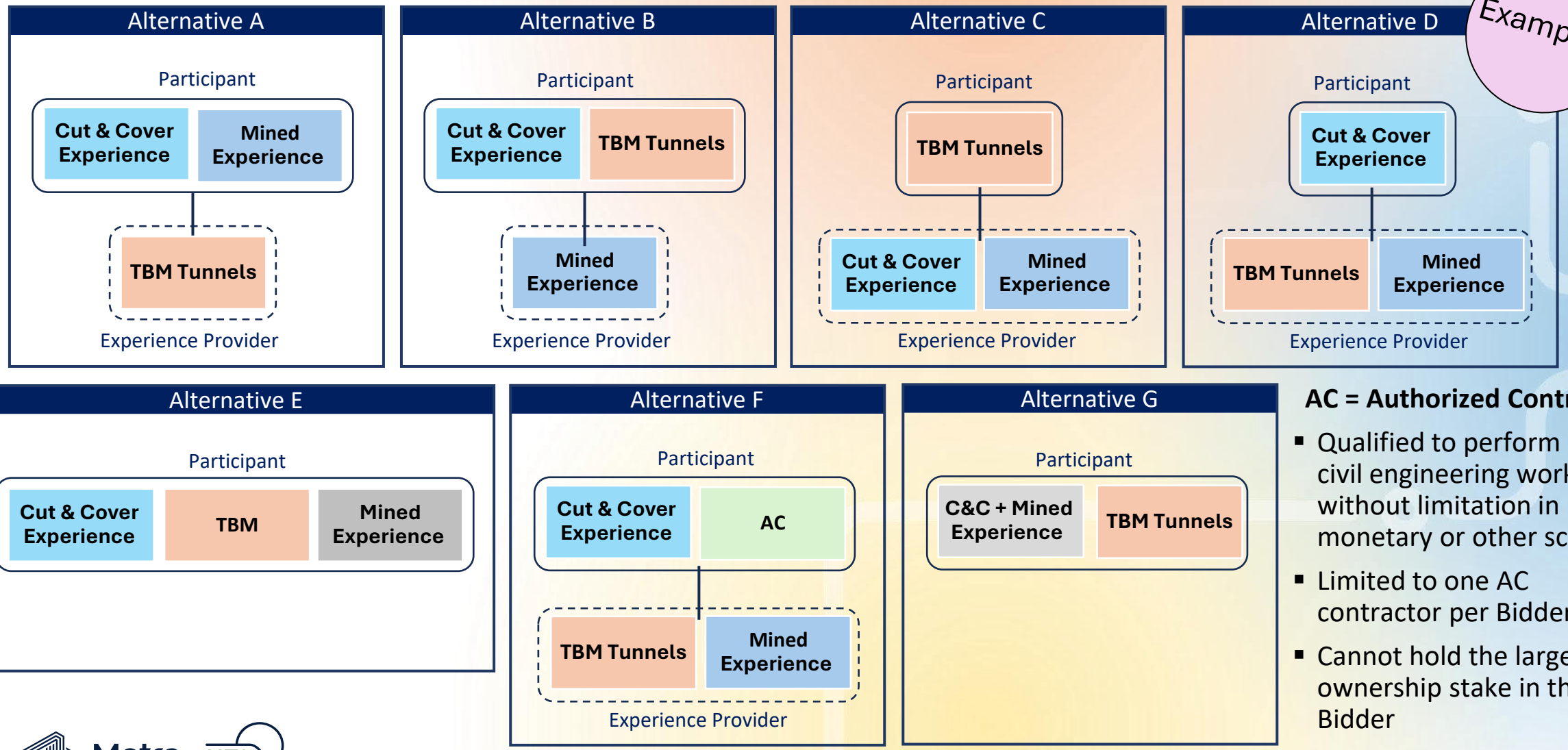


AC = Authorized Contractor

- Qualified to perform heavy civil engineering works without limitation in monetary or other scope
- Limited to one AC contractor per Bidder
- Cannot hold the largest ownership stake in the Bidder

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Alternatives for Participant's Structure - Type "B"



AC = Authorized Contractor

- Qualified to perform heavy civil engineering works without limitation in monetary or other scope
- Limited to one AC contractor per Bidder
- Cannot hold the largest ownership stake in the Bidder

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Participation Principles

Structure of a Joint Venture Participant

Joint Venture – Alternative A		Joint Venture – Alternative B		
Member 1	Member 2	Member 1	Member 2	Member 3
Each JV Member must hold **at least 20%** of the JV's Means of Control		Each JV Member must hold **at least 20%** of the JV's Means of Control		

A JV "**Member**" is an entity holding Means of Control that meets:

At least 1 of the **Professional** Pre-Qualification Requirements

and

All the applicable **Financial** Pre-Qualification Requirements

and

all the applicable **Participation – General Requirements**

As updated In **Addendum 4**

AC = Authorized Contractor

- Qualified to perform **Heavy Civil Works** without limitation in monetary or other scope
- Limited to one AC contractor per Bidder
- Cannot hold the largest ownership stake in the Bidder

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Threshold Requirement - TBM Tunnels

1 Experience of Design and Construction of TBM Tunnels

2 Experience of Construction of Underground Structures

1 | Experience of TBM Tunnels

Example for Threshold Requirements

From 2010 - ending on the Pre-Qualification Submission Date

Completed the Construction of at least

(i) 1 single bore TBM Tunnel of a minimum Length of **3 km**; **or**

(ii) 1 twin bore TBM Tunnel of a minimum Length of **1.5 km** in each direction; **or**

(iii) 2 single bore TBM Tunnels of a minimum Length of **1.5 km** each

The presented TBM tunnels must meet all the following requirements:

1. the TBM Tunnels was Constructed (in whole or in part) in an **Urban Area**; and
2. **at least 1** of the TBM Tunnels **passes through an underground structure**; and
3. **at least 1** of the TBM Tunnels was Constructed (in whole or in part) **below the groundwater table** ; and

TBM Tunnel

Tunnel which complies with: (a) it a **TBM**; (b) it was executed in **soft ground and/or mixed ground conditions**; (c) **the internal diameter of which is at least five (5) meters**; (d) it is lined by a **precast concrete segmental lining installed by the TBM**

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Threshold Requirement - Underground Structures

1 Experience of Design and Construction of TBM Tunnels

2 Experience of Construction of Underground Structures

2 | Experience of Underground Structures - Cut & Cover Experience

As updated In **Addendum 4**

Example for Threshold Requirements

From **2010** - ending on the Pre-Qualification Submission Date

Completed the Construction of at least two (2) C&C Underground Structures, which meet all the following requirements:

1. at least **one Underground Structure** with a total internal surface area (footprint) of **at least 2,400** m², and the second structure with **at least 1,500 m²**; and
1. at least **one** of which was Constructed in **an Urban Area**; and
2. **at least one** of which was part of a **Design-Build Project**; and

Groundwater Dewatering Experience – From 2015 - ending on the Pre-Qualification Submission Date.

Completed **groundwater dewatering in at least one C&C Underground Structure** (which does not have to include diaphragm walls) with a **minimum 1,500 m²** underground level, located in an **urban area**

C&C Underground Structure

Underground structure that complies with:

(a) its method of Construction was: (i) **Cut & Cover**; and (ii) **utilizing diaphragm walls**; (b) the depth below the excavated original ground level to the upper surface of the lowest concrete floor level of which is **at least fourteen (14) meters**

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Threshold Requirement - Underground Structures

Required only for "Type B"

1 Experience of Design and Construction of TBM Tunnels

2 **Experience of Construction of Underground Structures**

2 | Experience of Underground Structures - Mined Experience

Example for Threshold Requirements

From 2015 - ending on the Pre-Qualification Submission Date

Completed the Construction of at least one (1) Mined Underground Structure

The presented Mined Underground Structure must meet all the following requirements:

1. was Constructed in an **Urban Area**; and
2. was part of a **Design-Build Project** ; and

Mined UndergroundS tructure

Underground structure that complies with:

(a) its method of **Construction was conventional tunneling** (excluding drill & blast) utilizing pre-support measures; (b) the cross-sectional face of the excavated cavern is at least **80m²;** (c) the total excavated cavern volume of which was at least **10,000 cubic meters**; (d) it was excavated in **soft ground conditions**; (e) the Construction thereof has been performed, in whole or in part, **below ground water table**

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Methods for Demonstrating Professional Threshold Requirement (1)

Compliance by a Demonstrating Entity

By the Participant itself
(if it is a Single Entity Participant)

or

By its Member
(if it is a Joint Venture Participant)

and/or

By (an) Experience Provider(s)

compliance with a particular Professional Pre-Qualification Requirement cannot be "split" between different Demonstrating Entities

Methods for Demonstrating Professional Threshold Requirement (2)

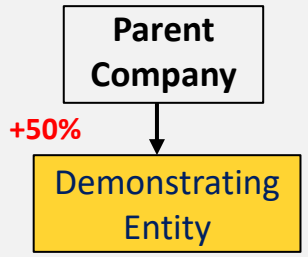
As updated In Addendum 4

A Demonstrating Entity may present and rely on Works which were executed by an Associated Party:

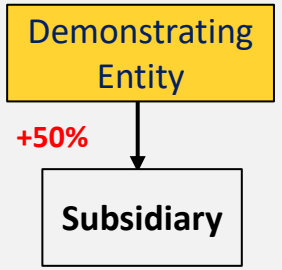
- Parent Company - directly or indirectly
- Subsidiary - directly or indirectly
- Sister Company - directly

Different Associated Parties may be relied on with respect to different Elements and Works presented by the Demonstrating Entity

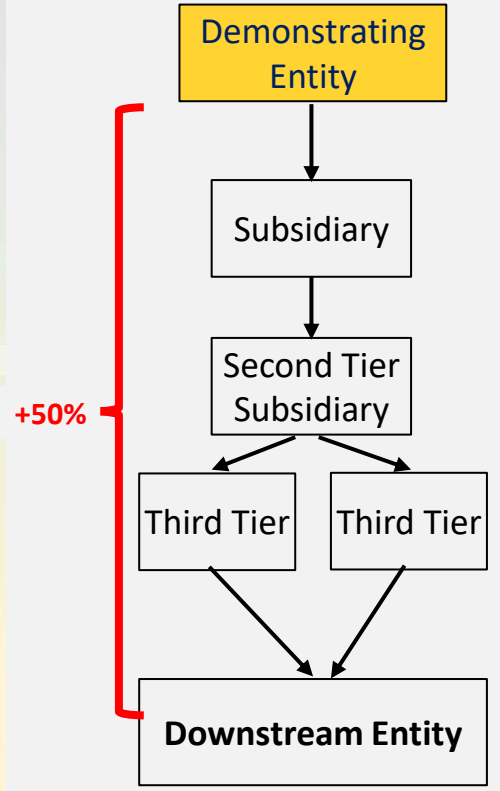
Parent Company



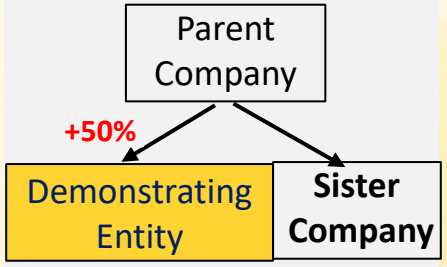
Subsidiary (Example) - 1



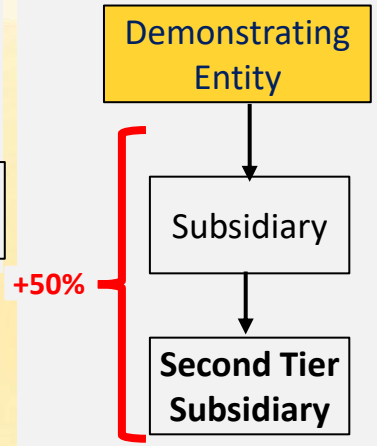
Subsidiary downstream entity (Example) - 3



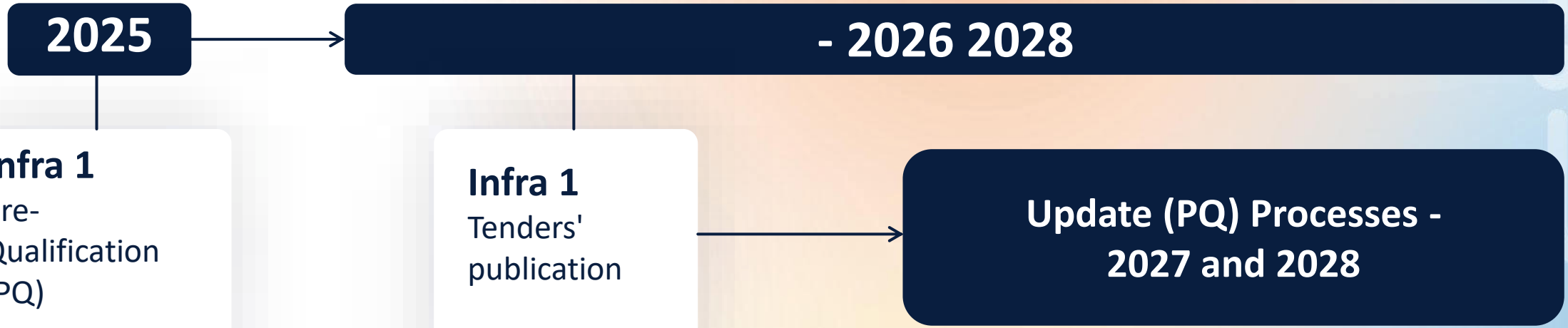
Sister Company



Subsidiary (Example) - 2



Participation Principles



- Changes in the structure of the Eligible Participants will be permitted.
- New Participants may qualify.
- NTA may allow changes in the structure of the Eligible Participants not as part of an Update Process.

A Pre-Qualification Process Timeline & Milestones

Topic	Anticipated Schedule
Published Date	11/10/2025
Final date for the Submission of Requests for Clarifications	05/03/2026
Submission Date	29/04/2026, 14:00 Local Time

Email Box for Clarification Questions
ntapqinfra1@nta.co.il

Metro NTA

Thank You & Shalom



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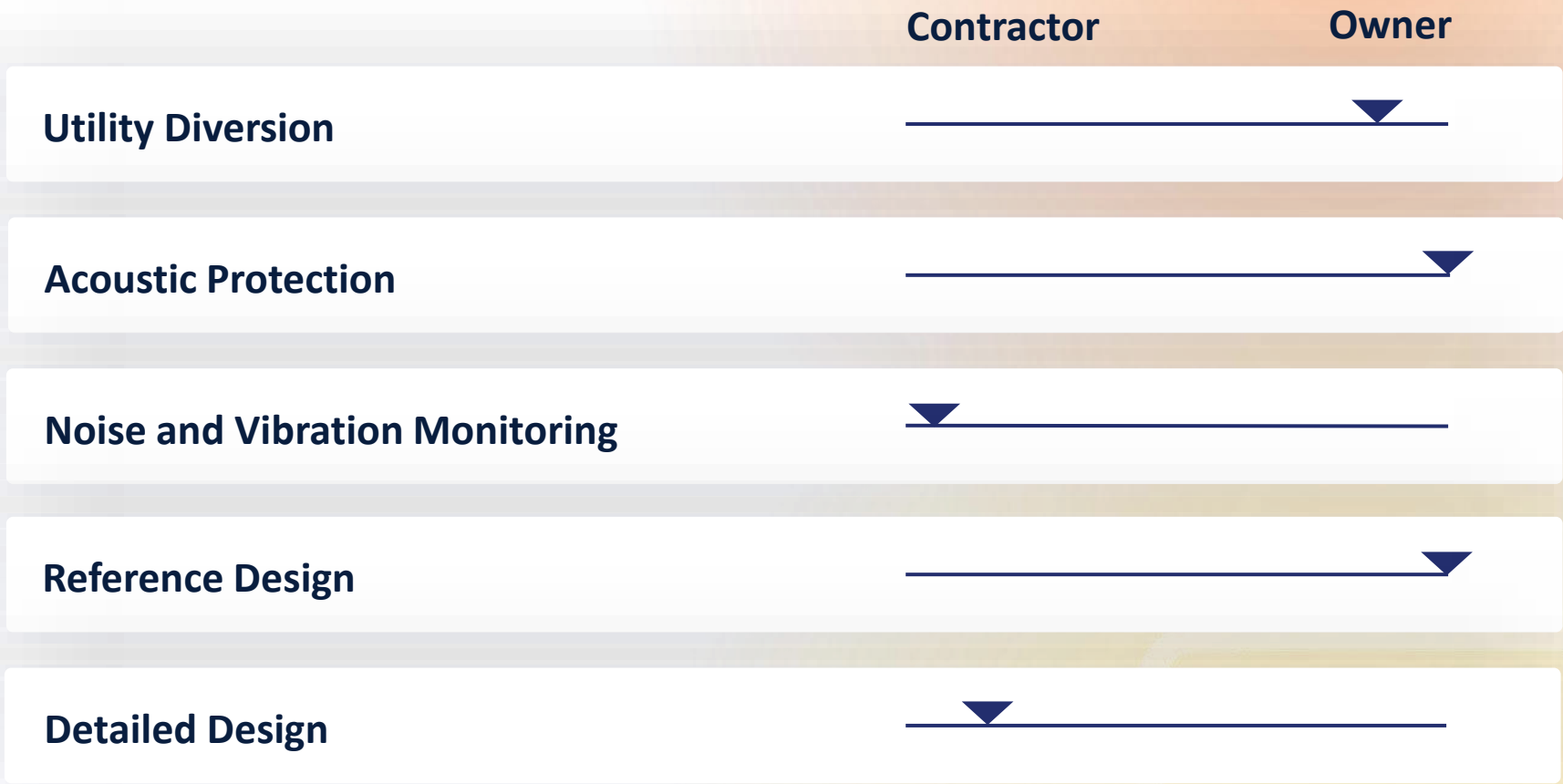
Risk Allocation



Barak Kirschner
Procurement and Commercial Manager, Partner – B&K

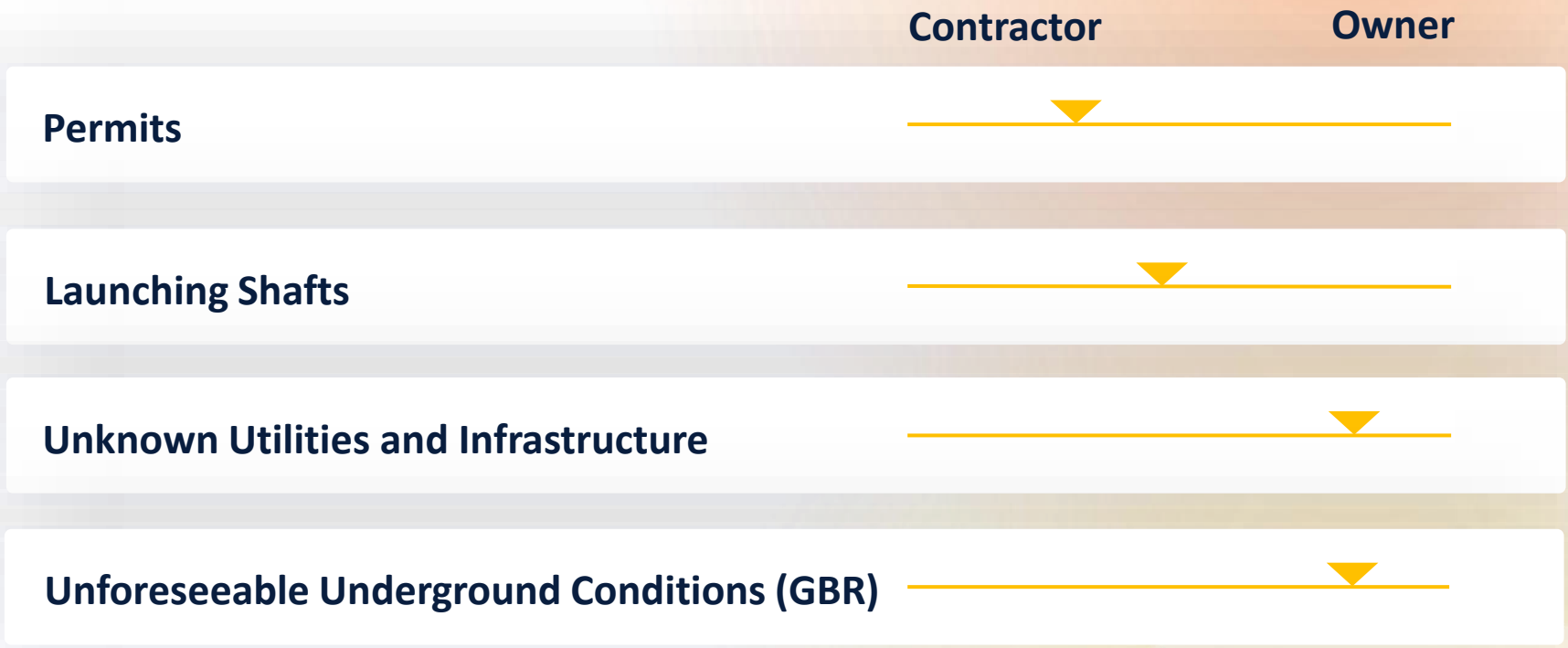
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Risk Allocation Basic Principals



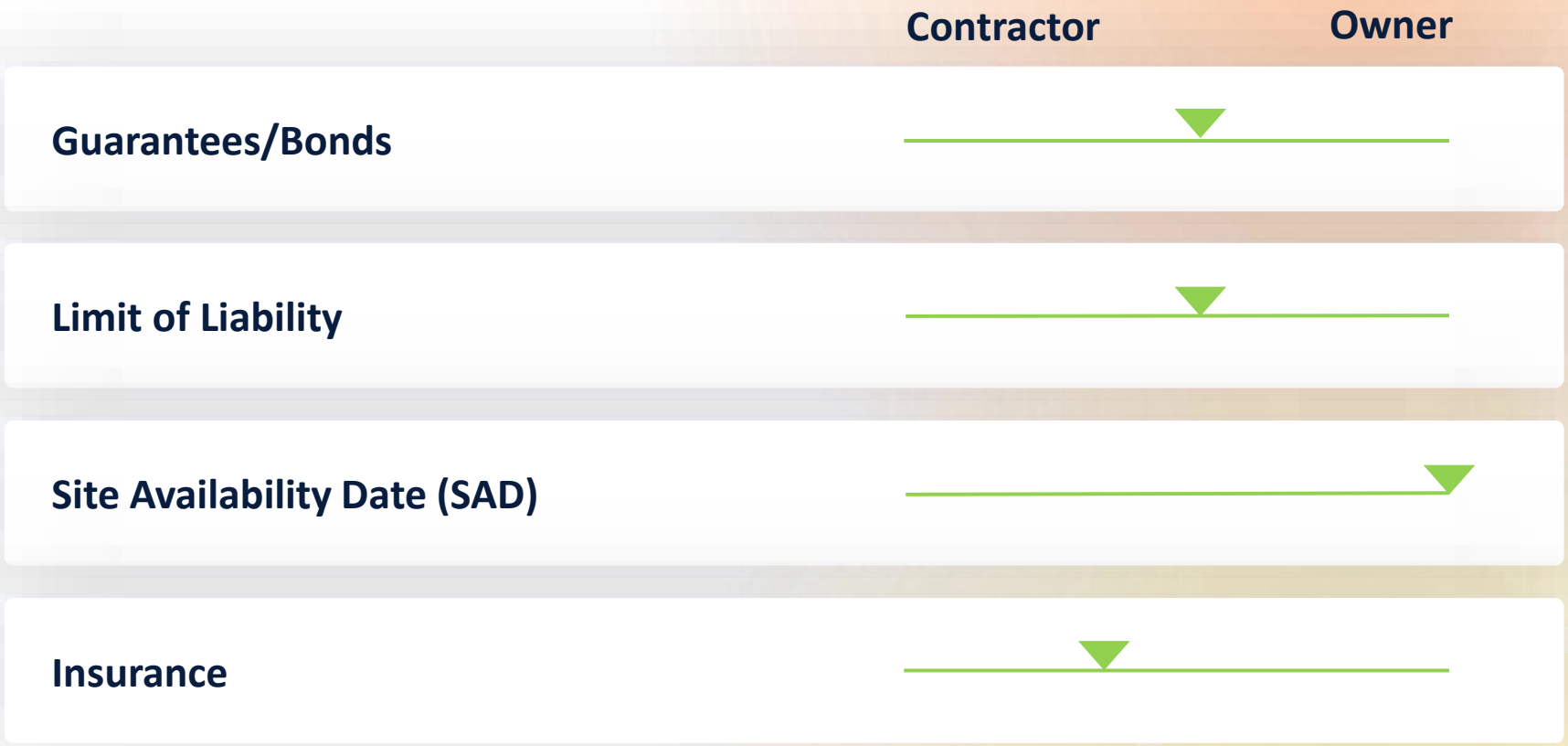
* For the avoidance of doubt, the distribution of risks between the Contractor and the Owner shall be as stipulated in the Tender Documents and Agreement, notwithstanding its description in this presentation

Risk Allocation Basic Principals



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Risk Allocation Basic Principals



* For the avoidance of doubt, the distribution of risks between the Contractor and the Owner shall be as stipulated in the Tender Documents and Agreement, notwithstanding its description in this presentation

Risk Allocation Basic Principals

	Contractor	Owner
Betterment Tax		▼
Expropriation Costs		▼
Removal and treatment of Soil	▼	

* For the avoidance of doubt, the distribution of risks between the Contractor and the Owner shall be as stipulated in the Tender Documents and Agreement, notwithstanding its description in this presentation

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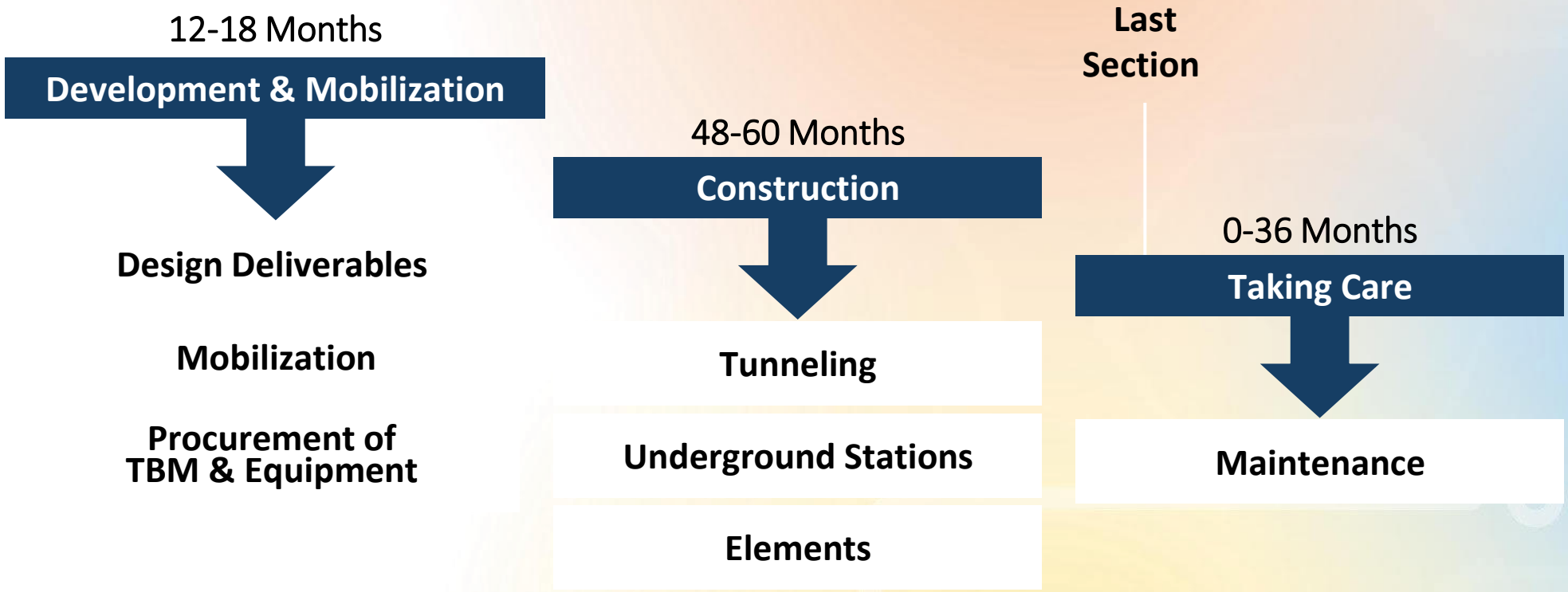
Risk Allocation Basic Principals

	Contractor	Owner
Indexation and Inflation		▼
Foreign Exchange Rates (EUR/USD)		▼
Advance Payments		▼
Interim Payments during Construction		▼

* For the avoidance of doubt, the distribution of risks between the Contractor and the Owner shall be as stipulated in the Tender Documents and Agreement, notwithstanding its description in this presentation

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Infra I - Project Stages



Evaluation Formula & Compensation

$$Final\ Score = A\% * TPS + B\% * PPS$$

TPS = Technical Proposal Score
PPS = Price Proposal Score

Price Proposal Components

- Lump Sum - Price Proposal
- Submission of basket of indices and exchange rates which will be evaluated as part of the Adjusted Price Proposal

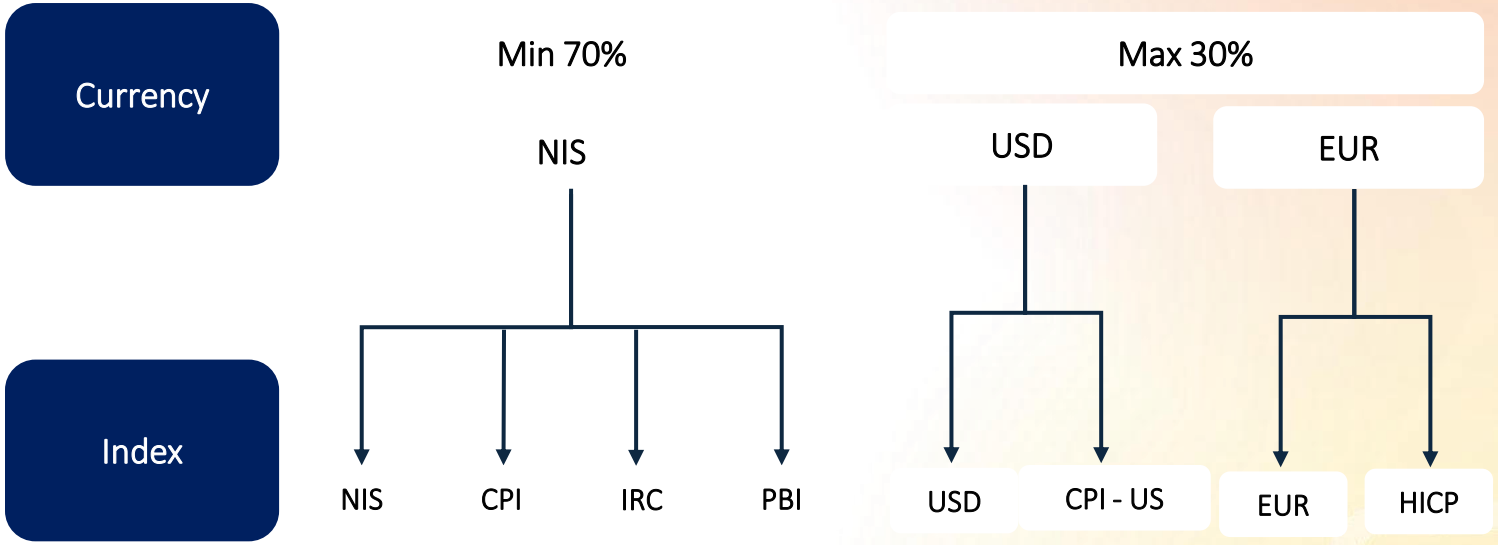
Reimbursement of Bid Preparation Costs

- Unsuccessful Bidders shall be entitled to reimbursement of partial Bid preparation costs, subject to a pre-determined cap
- Eligibility requires proof of expenses (process will be detailed in the ITB document)

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Indexation and Inflation Hedge Mechanism

Example for illustration



- The chosen basket will be evaluated as part of the Bidder Price Proposal (Adjusted Price Proposal)
- Base rates will be published by NTA at least 10 days prior to Bid Submission Date

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Payment Principles

Payment Principals

Example for illustration

Lump Sum Payment by Milestones and Progress		Provisional Sums Payment based on defined Price List	
1	Advance Payments	1	Protection of structures in zone of Influence
2	Interim Payments based on progress	2	Fences for worksites
3	Final Payment for completion a Milestone	3	Other

Infra I - Payment Milestones

Lump Sum	
Payment based on Milestones	
Advance Payment	**Milestones Per Section/Element**
Between 10%-15% of Contract value Dependence on WP Size	Payment Based on **progress** and **final completion** (based on Engineer determination and defined Milestone - BOI)

Main Objective: Positive Cash Flow

Example for illustration

Illustrative Payment Milestones

Lump Sum (100%)

y% Mobilization	X% Stations & Elements	z% Tunneling	q% Final Handover
Deliverables	Dewatering	TBM Transfer	
Design & Permits	Outer Box D-walls	Tunneling Work	
General Mobilization and Organization	Inner box & Entrances		

X% divided between milestones, possibility for interim payments based on progress

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Thank You & Shalom



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Infra II

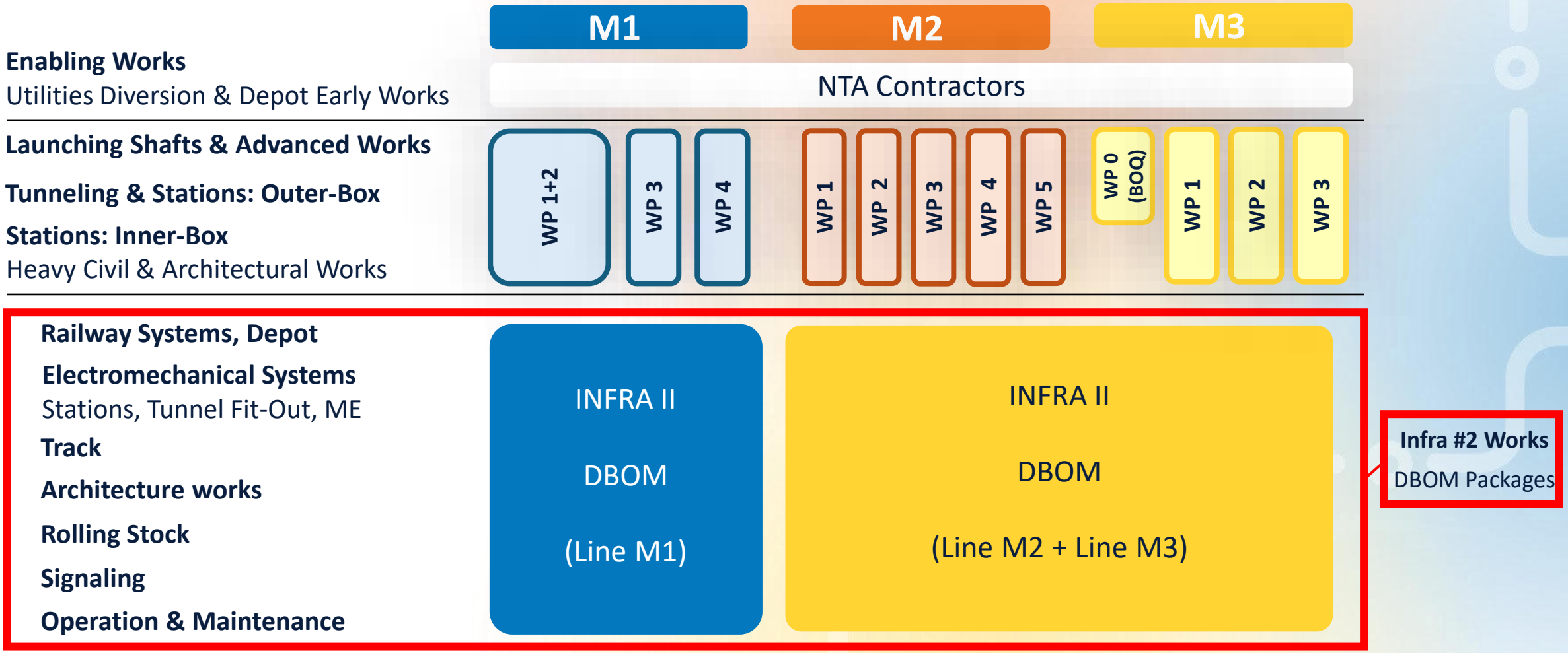
PQ – Presentation



Gilad Fux
VP, Systems and Technologies, NTA

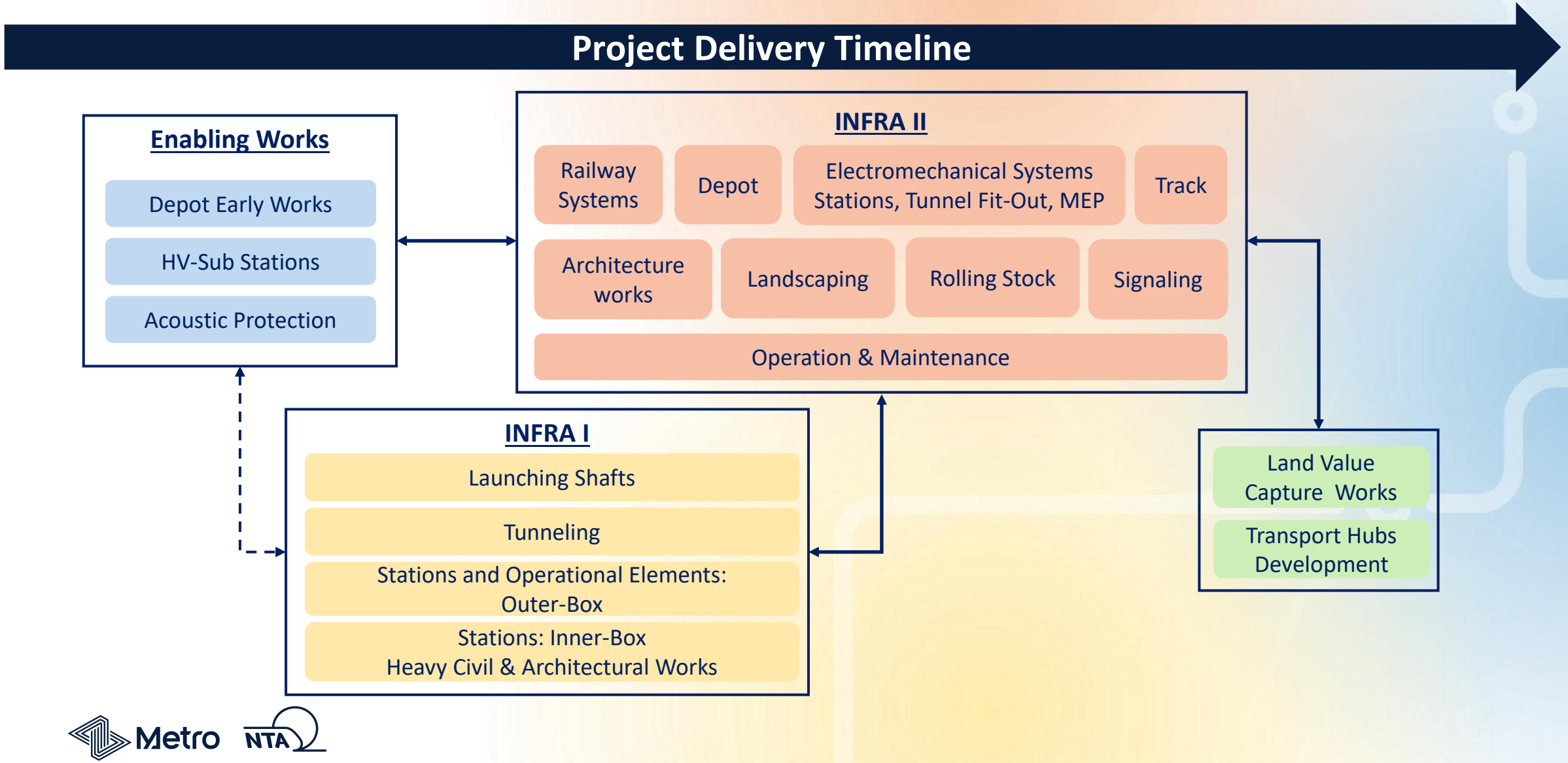
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Procurement Strategy Scheme



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Infra II: Main Interfaces



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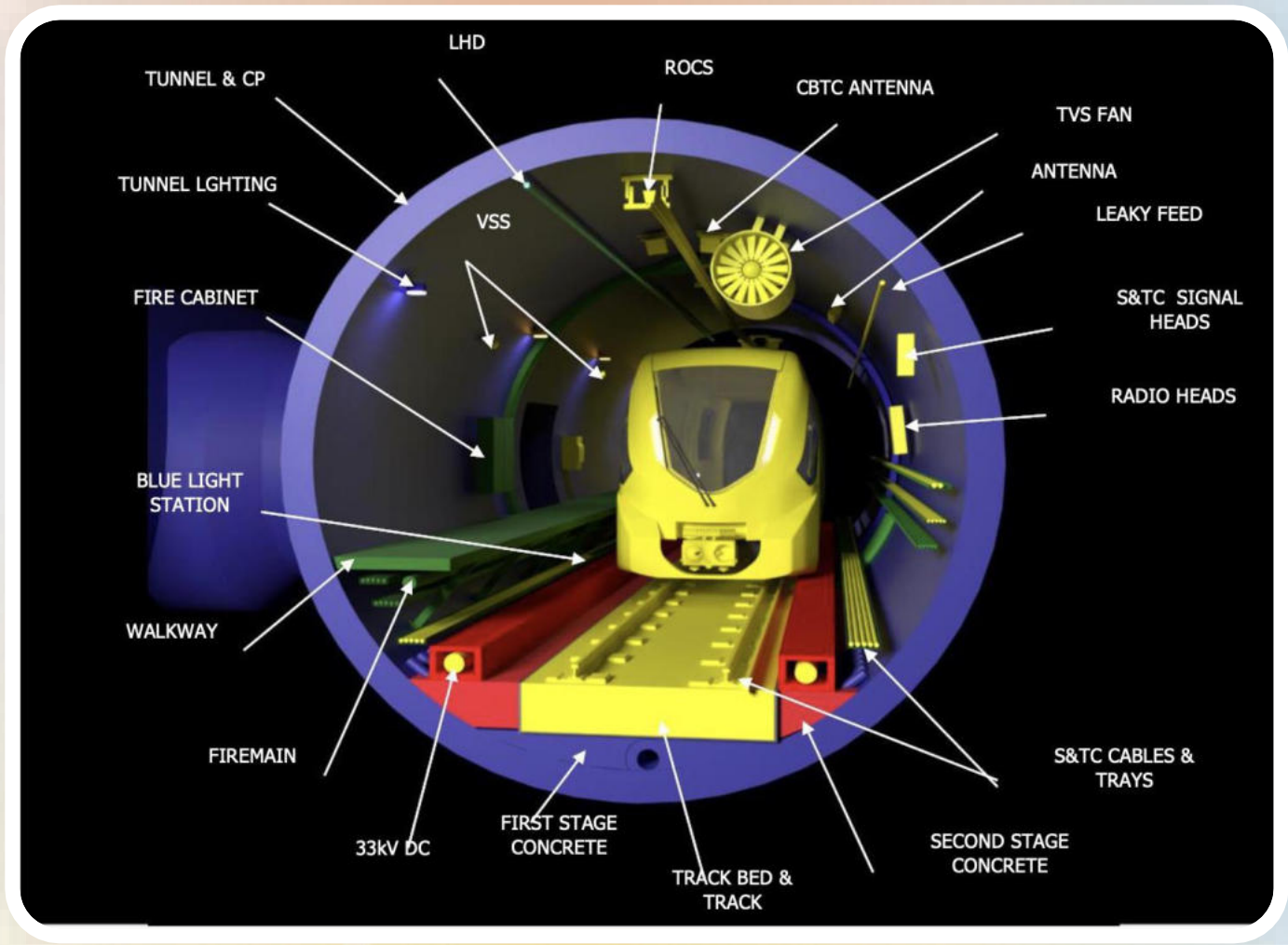
Indicative SOW Allocation Tunnel Section

INFRA 1: CIVILS

INFRA 2: CIVILS

INFRA 2: ARC & MEP

INFRA 2: RAIL SYSTEMS



Indicative SOW Allocation Cut & Cover Station

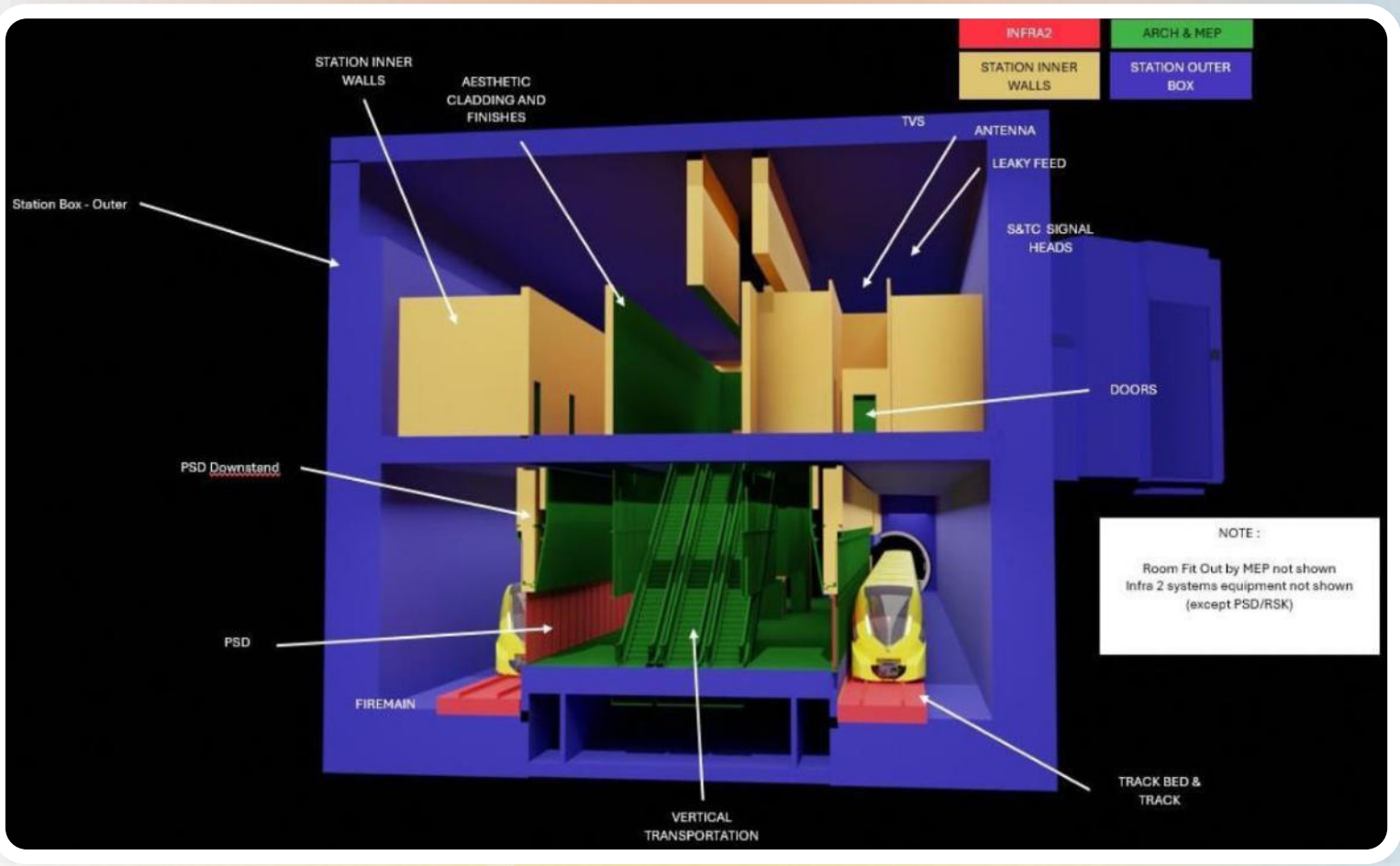
INFRA 1: CIVILS

INFRA 2: CIVILS

INFRA 2: PARTITION WALLS

INFRA 2: ARC & MEP

INFRA 2: RAIL SYSTEMS



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Indicative SOW Allocation Mined Station

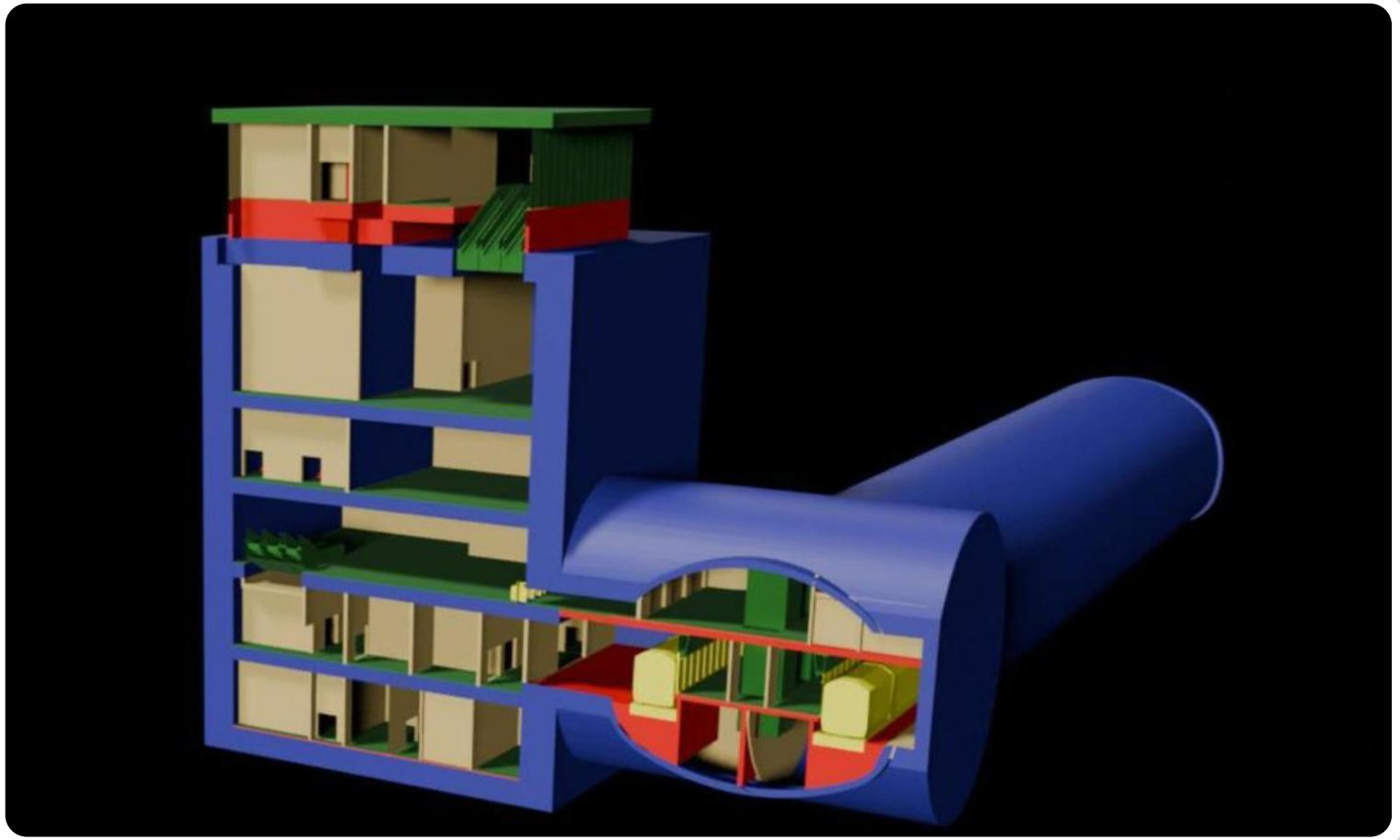
INFRA 1: CIVILS

INFRA 2: CIVILS

INFRA 2: PARTITION WALLS

INFRA 2: ARC & MEP

INFRA 2: RAIL SYSTEMS



Main Characteristics

Unified PQ and Tender process for both M1 and M2-M3 Infra 2 WPs

PQ Process - Q2/2026

Unified Pre-Qualification for M1 & M2+3

Tender Process - 2027

Unified tender for Qualified Participants

2 Successful Bidders

Contractor A Awarded **M1 WP DBOM**

Contractor B Awarded **M2+M3 WP DBOM**

* Infra 2 SOW covers Stage A of the project with an option to extend the services also to Stage B

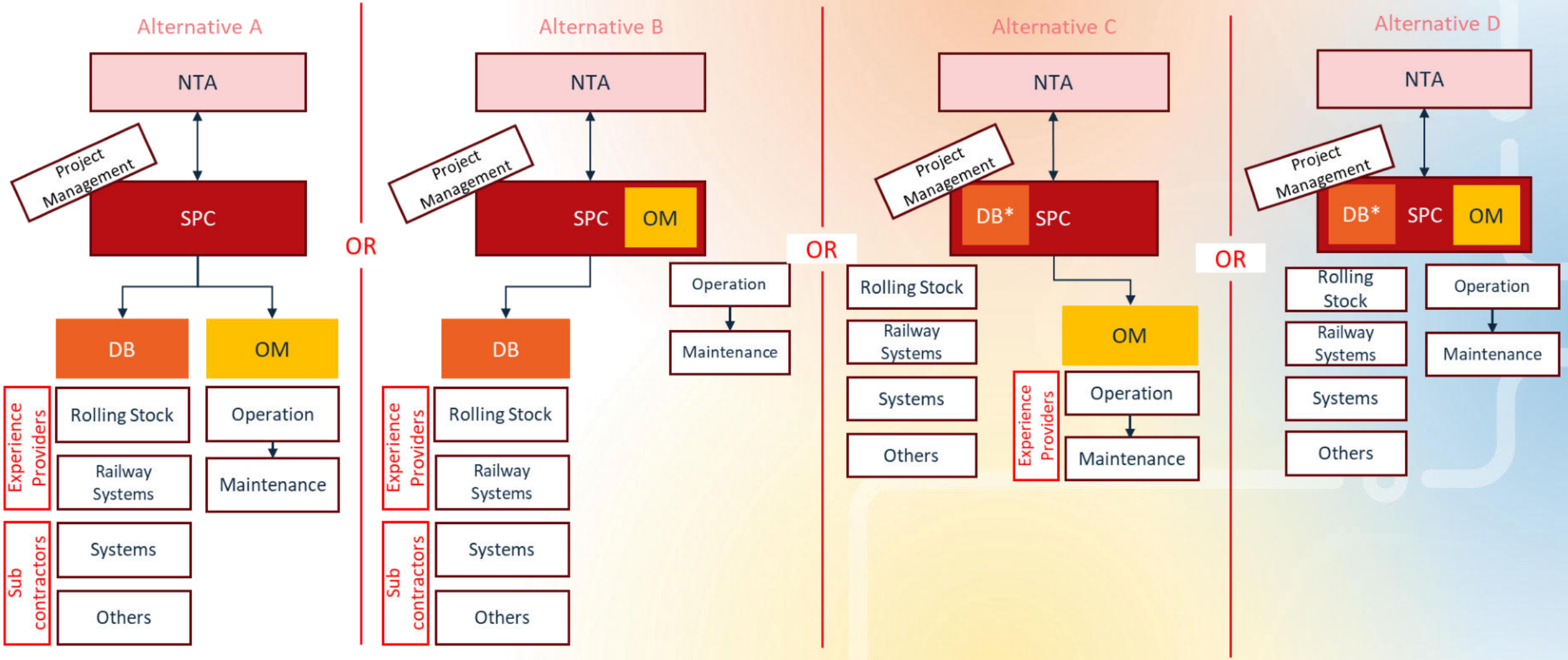
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Overview of Main Disciplines

Demonstration	Threshold Requirements	#
PQ	Railway Systems	1
PQ	Rolling Stock	2
PQ	Project Management, Integration	3
PQ	Maintenance	4
PQ	Operations	5
Tender Phase / Post nomination	Signaling System	6

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Bidder's Structure



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*An option for some of the disciplines to be included in the SPC and others to be provided through Experience Providers

Alternative Structures for Metro Network Operator

Alternative A - Metro Network Operator with proven metro operation experience

The Operating Company

Network Operator with Experienced Metro Operator

Alternative B - Bus/LRT/Metro Operator with Service Agreement with Experienced Metro Operator

The Operating Company

The services agreement requires the involvement of the network operator

Bus/LRT Operator

Operator with Experienced Metro Operator

Critical Systems



Communication:
Wired, Wireless, Operational Radio, Emergency Networks, Cellular, WIFI



Security Layers:
Information Security System (ISS), Physical Security Systems



Computing Infrastructure:
Data Centers ,Cloud ,Workstations ,Laptops



Industrial Control:
SCADA, PLCs, HMIs



Control & Integrations:
Commend & Control (C2), Integration Systems, Operational Management



Transit Core:
Signaling and OCC

The Tender Committee may impose participation restrictions on competition, criminal or national security grounds, in accordance with applicable law, including with respect to specific parts or aspects of the process or project.

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Metro

PRE-QUALIFICATION CONFERENCE

Adam Ross

LICENSING AUTHORITY

NTA

MINISTRY OF TRANSPORT AND ROAD SAFETY

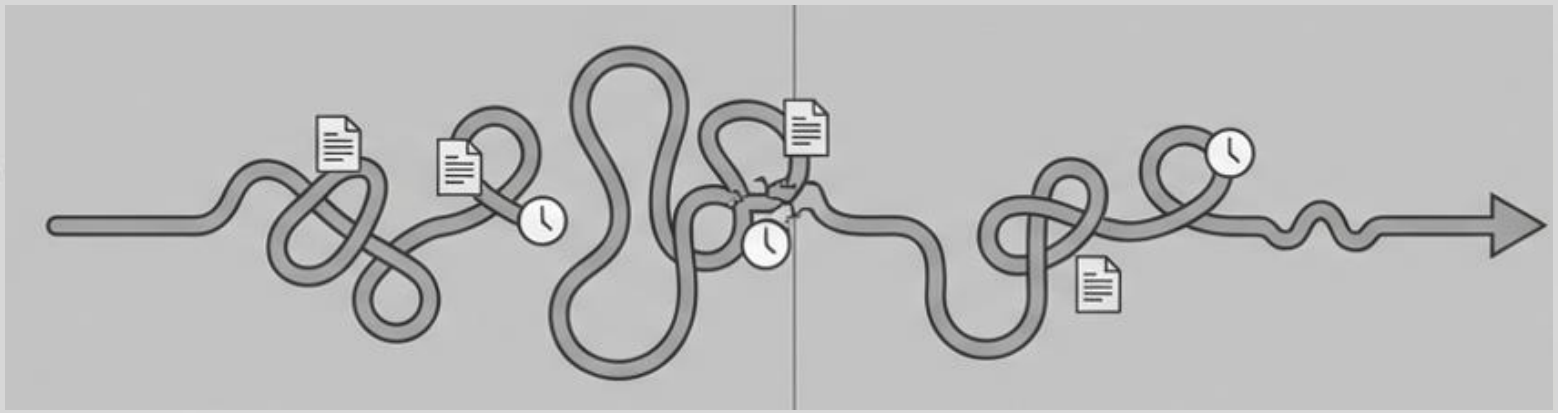
Ministry of Finance

STATE PREPAREDNESS FOR THE METRO PROJECT WITH NATIONAL LICENSING AUTHORITY

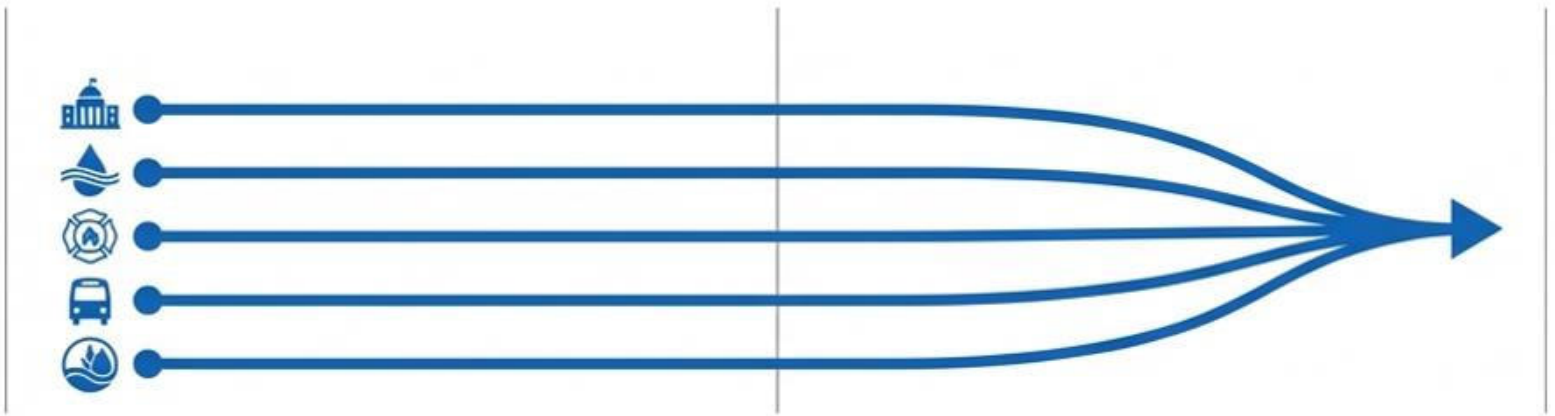


No More Queue. One Platform.

Sequential Process
(Sequential)



Parallel Process
(Parallel)



Coordination with authorities and external bodies happens simultaneously.



NATIONAL LICENSING AUTHORITY

THE ANSWER TO THE METRO PROJECT CHALLENGES

One body with authority to approve all licensing processes and start of works.

For infrastructure projects of national importance.

Specifically designated team to handle the Metro project.

One Address. for all licensing needs.



Holistic response under one body

For synchronization between various government ministries and approving bodies.

Multidisciplinary expertise

Combining engineering, legal, and planning experts under one roof to provide a complementary response.

Providing a response to changing needs

Ability to make decisions according to changing needs.

Goodbye Permit. Welcome Authorization.

The Past

Permit

- Linear Process
- Construction Checks
- Coordination Verification

The Licensing Revolution

The Future

Authorization

- Detailed Design for Review
- Designer Responsibility
- Speed

LICENSING PROCESS IN 60 BUSINESS DAYS

1 Pre-Ruling Meeting → 2 Permit Submission → 3 Parallel Coordination with Local Committees → 4 Review by National Licensing Authority Team → 5 Subcommittee Discussion → 6 Completion of Documents & Coordination → 7 Permit Approval, Signing & Start of Work



One address. End-to-end.



The National Licensing Authority is a body established by the state in 2023 and includes a broad professional team for licensing and environmental issues.

THANK YOU

Senior Division National Licensing Authority

michall@iplan.gov.il

r-artzit@iplan.gov.il

מינהל התכנון

אגף בכיר רשות רישוי ארצית

Scope of Works

(Common to all Lines) &

Overview of Reference Design Content



Roberto Nassi
Project Lead Designer M1
Project Director, Metro Milano

Reference Design

1 **Design and Construction of TBM Tunnels Launching / Retrieval Shaft**

2 **Design and Construction of Underground Structures**

Purpose of the Reference Design (Common to All Lines) (1/2)

Employer's Design for tender

Define the **technical baseline** for procurement of Infra 1 Design & Build works.

Establish **mandatory constraints, interfaces and performance requirements.**

Provide sufficient definition to enable **pricing, risk allocation and design development** by D&B Contractors.

D&B Particulars

The Reference Design is not a construction design and does not prescribe construction methods or sequencing.

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Reference Design

1 Design and Construction of TBM Tunnels Launching / Retrieval Shaft

2 Design and Construction of Underground Structures

Purpose of the Reference Design (Common to All Lines) (2/2)

Employer's Design for tender

Reference Design includes definition of:

Alignment and geometry
- Horizontal and vertical alignment
- Tunnel envelopes and clearances
- Station and shaft locations

Geotechnical and hydrogeological baseline
- Ground models and parameters
- Groundwater regime
- Baseline ground behaviour (via GBR)

Structural concepts
- Permanent structural systems
- Load paths and structural principles

Statutory and planning constraints
- Approved planning boundaries
- Environmental and permitting conditions
- Interfaces with stations, shafts, roads and third parties

Interface boundaries
- Infra 1 ↔ Infra 2 interfaces

D&B Particulars

The Reference Design is not a construction design and does not prescribe construction methods or sequencing.

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Tunnels Launching Shafts

1 Design and Construction of TBM Tunnels Launching / Retrieval Shaft

2 Design and Construction of Underground Structures

1.1 | Tunnels Launching / Retrieval Shafts (Common to All Lines)

Scope of Works	**Construction of launching, retrieval and intermediate shafts** **Ground and groundwater management** **Provision of interfaces for tunnelling operations** **Provision of construction logistics for tunnelling operations**
D&B Particulars	The configuration, construction method, sequencing and temporary works for launching and retrieval shafts remain the responsibility of the Design & Build Contractor, provided contractual performance, safety and interface requirements are satisfied.

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Tunnels Launching Shafts

1 Design and Construction of TBM Tunnels Launching / Retrieval Shaft

2 Design and Construction of Underground Structures

1.1 | Tunnels Launching / Retrieval Shafts (Common to All Lines)

Employer's Designer – Detailed Design Scope

The Employer's Designer is responsible for the preparation of the **Detailed Design** of launching and retrieval shafts, including:

Final shaft geometry and permanent structural design, including walls, slabs, foundations and thrust structures.

Defined ground and groundwater design assumptions, including dewatering concepts and uplift control, in accordance with the GBR.

TBM interface design intent, including break-in / break-out arrangements and structural interfaces with running tunnels.

Instrumentation and monitoring design intent for shaft construction and TBM operations.

D&B Particulars

Construction methods, sequencing, temporary works and logistics remain the responsibility of the Infra 1 Contractor.

Metro NTA

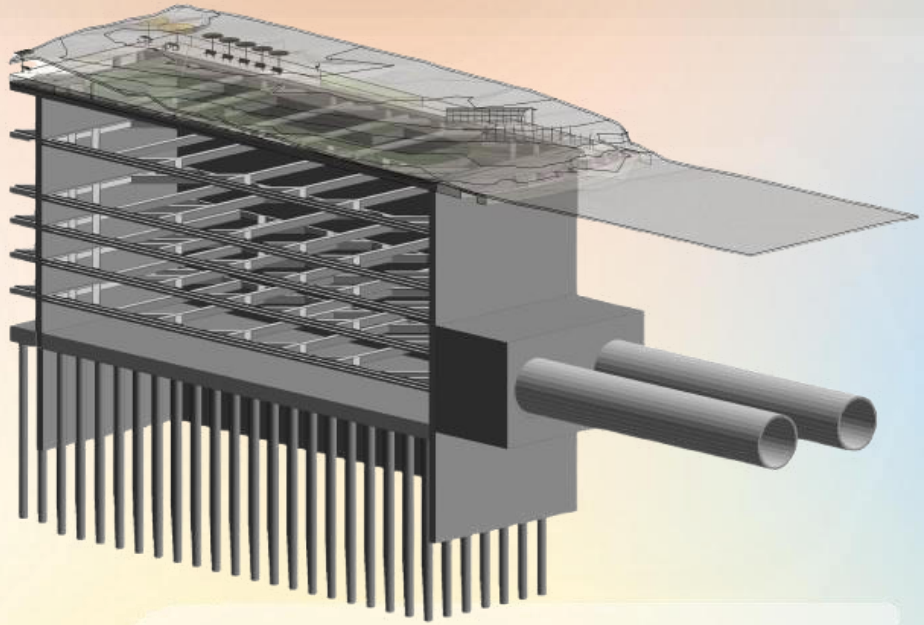
Tunnels Launching Shafts

1 Design and Construction of TBM Tunnels Launching / Retrieval Shaft

2 Design and Construction of Underground Structures

1.1 | Tunnels Launching / Retrieval Shafts (Common to All Lines)

Scope of Works



D&B Particulars

The configuration, construction method, sequencing and temporary works for launching and retrieval shafts remain the responsibility of the Design & Build Contractor, provided contractual performance, safety and interface requirements are satisfied.

Metro NTA

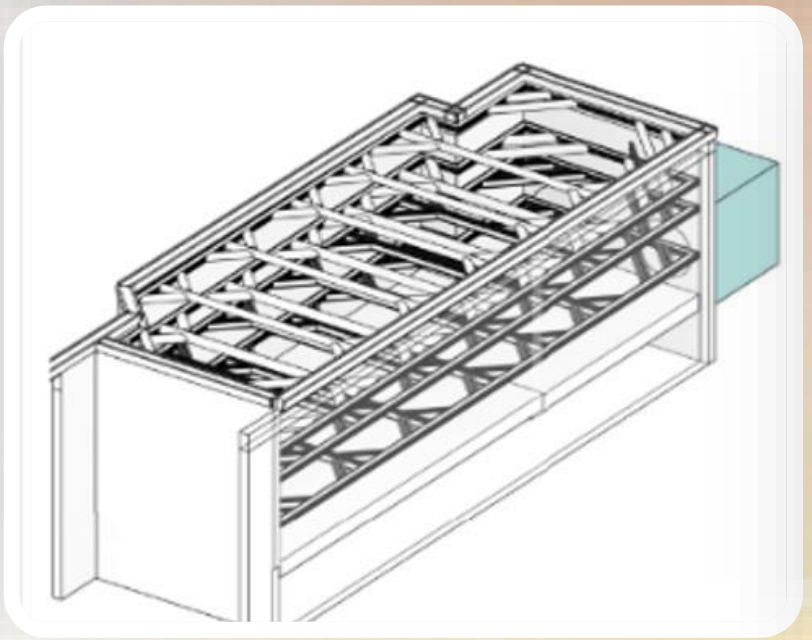
Tunnels Launching Shafts

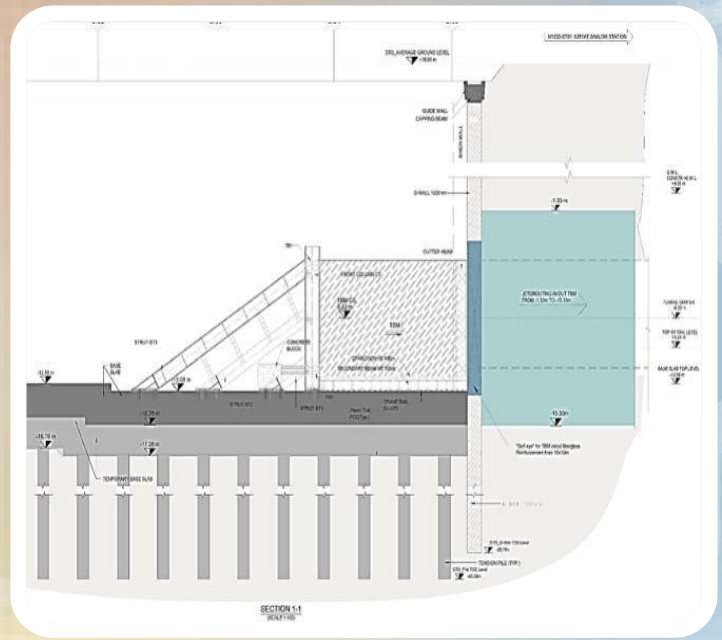
1 Design and Construction of TBM Tunnels Launching / Retrieval Shaft

2 Design and Construction of Underground Structures

1.1 | Tunnels Launching / Retrieval Shafts (Common to All Lines)

Scope of Works





D&B Particulars

The configuration, construction method, sequencing and temporary works for launching and retrieval shafts remain the responsibility of the Design & Build Contractor, provided contractual performance, safety and interface requirements are satisfied.

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Tunnels

1 Design and Construction of TBM Tunnels

2 Design and Construction of Underground Structures

1.2 | Twin Tunnel excavation and lining works (Common to All Lines)

Scope of Works

- Design and construction of running tunnels
- Supply, operation and demobilization of tunnelling equipment
- Tunnel – shaft – station interfaces
- Instrumentation, monitoring and mitigation

D&B Particulars

The Scope defines performance and outcomes.
Selection of tunnelling methods, shaft configurations, sequencing and temporary works arrangements remains the responsibility of the Design & Build Contractor.

Metro NTA

Tunnels

1 **Design and Construction of TBM Tunnels**

2 Design and Construction of Underground Structures

1.2 | Twin Tunnel excavation and lining works (Common to All Lines)

Employer's Designer – Reference Design

Tunnelling and Underground Structures
Running tunnels (TBM / conventionally excavated – method-neutral)
Cross passages and evacuation connections
Ventilation or Escape shafts
Cut-and-cover and mined tunnel sections
Tunnel portals and interfaces with stations and shafts

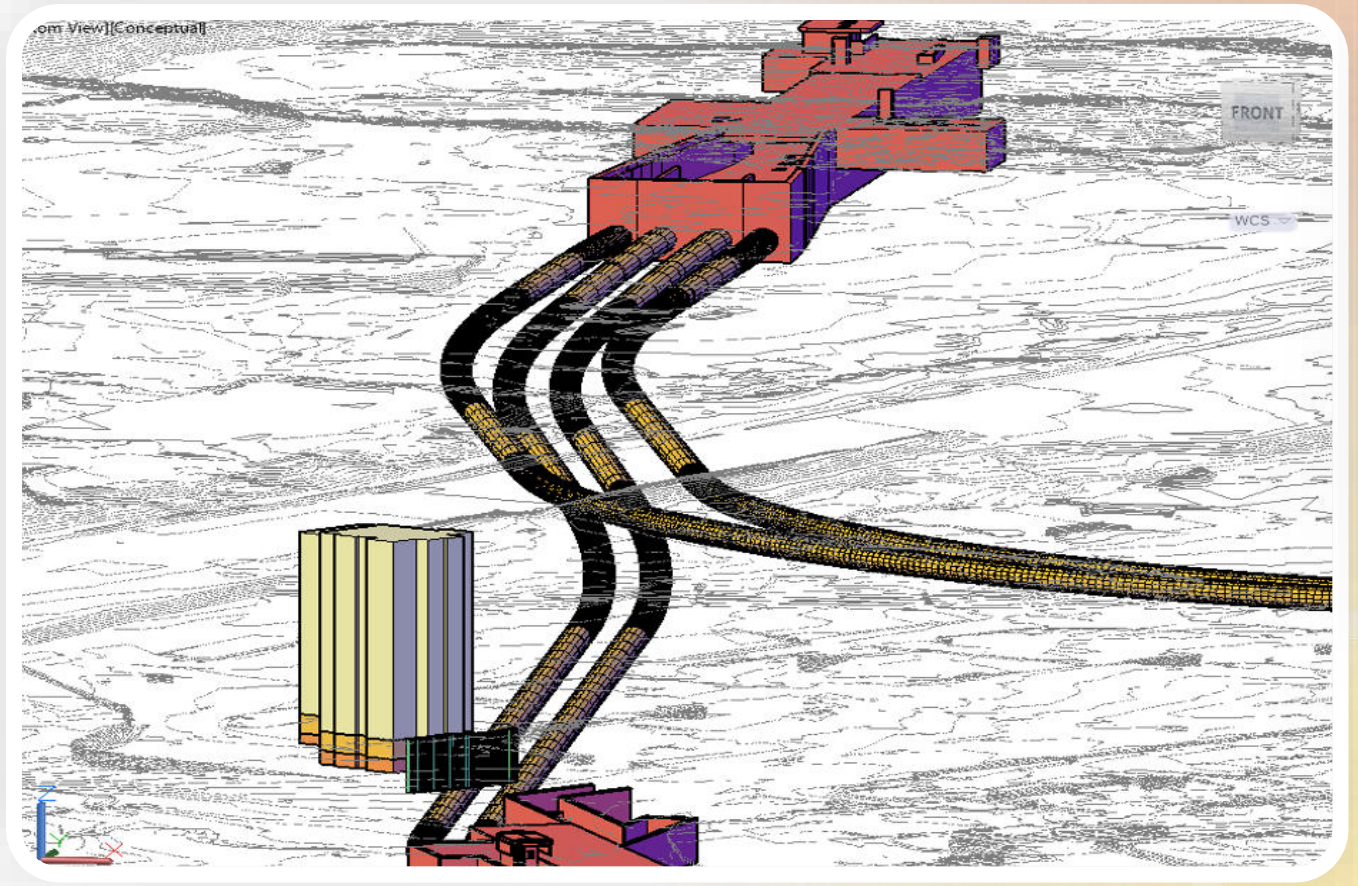
Provided at Reference Design level:
Geometry and spatial definition
Structural concept and lining principles
Waterproofing concept
Drainage and safety provisions
Interface locations and limits

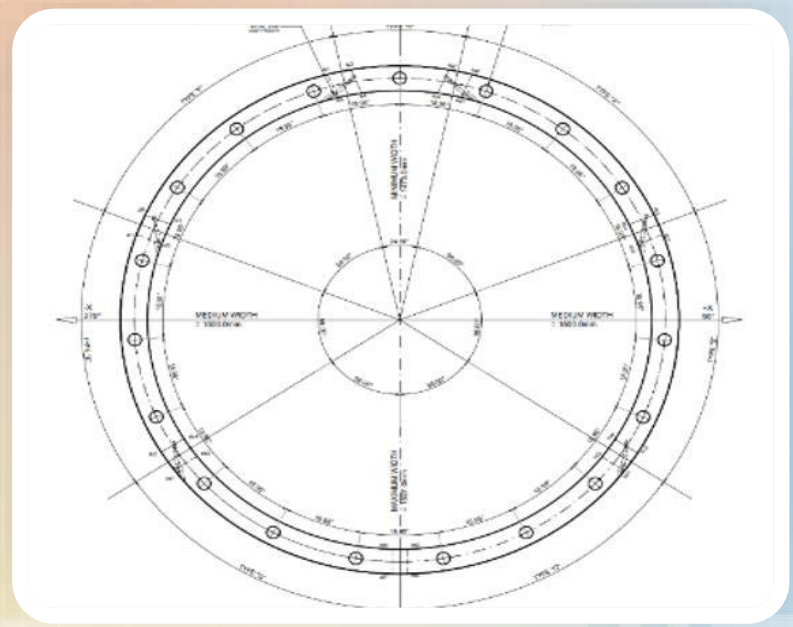
D&B Particulars

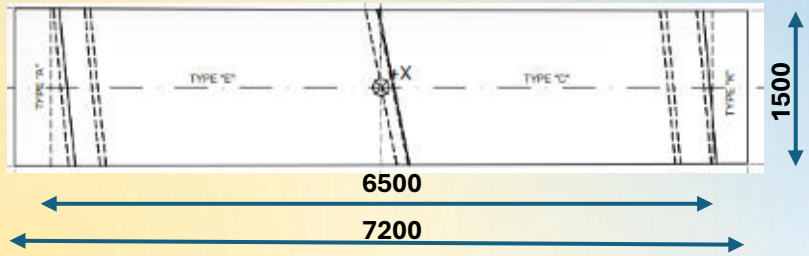
The Scope defines performance and outcomes.
Selection of tunnelling methods, shaft configurations, sequencing and temporary works arrangements remains the responsibility of the Design & Build Contractor.

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Tunnel Excavation and Lining Works







(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Cross Passages

1 Design and Construction of TBM Tunnels

2 Design and Construction of Underground Structures

1.3 | Cross Passages excavation and lining works (Common to All Lines)

Scope of Works

- Design and construction of cross passages
- Ground treatment and stability measures
- Integration with running tunnels

D&B Particulars

The selection of excavation method, sequencing and temporary works for cross passages remains the responsibility of the Design & Build Contractor, provided contractual performance and safety requirements are achieved.

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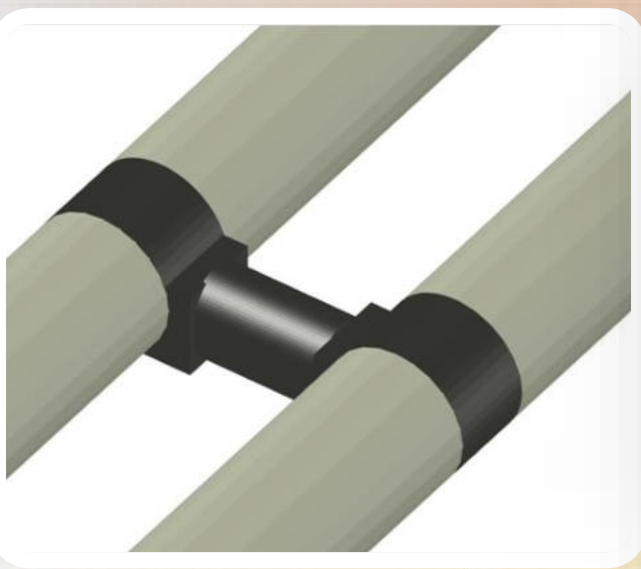
Cross Passages

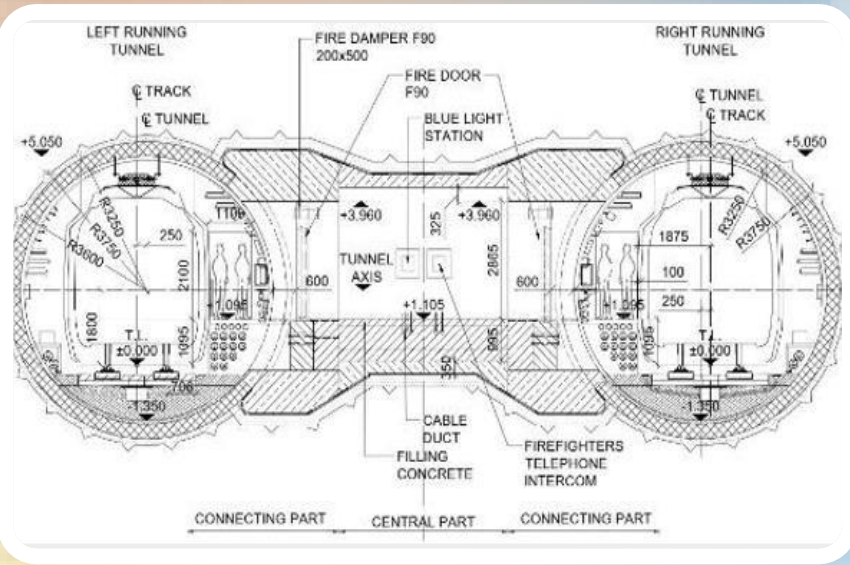
1 Design and Construction of TBM Tunnels

2 Design and Construction of Underground Structures

1.3 | Cross Passages excavation and lining works (Common to All Lines)

Scope of Works





D&B Particulars

The selection of excavation method, sequencing and temporary works for cross passages remains the responsibility of the Design & Build Contractor, provided contractual performance and safety requirements are achieved.

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First Stage Concrete

1 Design and Construction of TBM Tunnels

2 Design and Construction of Underground Structures

1.4 | First-Stage Concrete (Running Tunnels) & Embedded Items (Common to All Lines)

Scope of Works	**Execution of first-stage in-situ concrete works** **Provision and installation of embedded items** **Integration with permanent tunnel lining** **Surface preparation, geometry control and tolerances** **Testing, inspection and documentation**
D&B Particulars	The Contractor remains fully responsible for the design, sequencing and execution of first-stage concrete works to meet the required performance, durability and interface outcomes excluding the Design responsibility of Embedded Items.

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Underground Structures

1 Design and Construction of TBM Tunnels

2 Design and Construction of Underground Structures

2.1 | UG Structure OUTER BOX excavation and lining works (Common to All Lines)

Scope of Works	**Design and construction of the outer box** **Execution of all permanent and temporary works** **Ground and groundwater management** **Provision of a complete waterproof envelope**
D&B Particulars	The selection of construction methodology, sequencing, excavation support systems and temporary works for the outer box remains the responsibility of the Design & Build Contractor, provided contractual performance, safety and interface requirements are satisfied.

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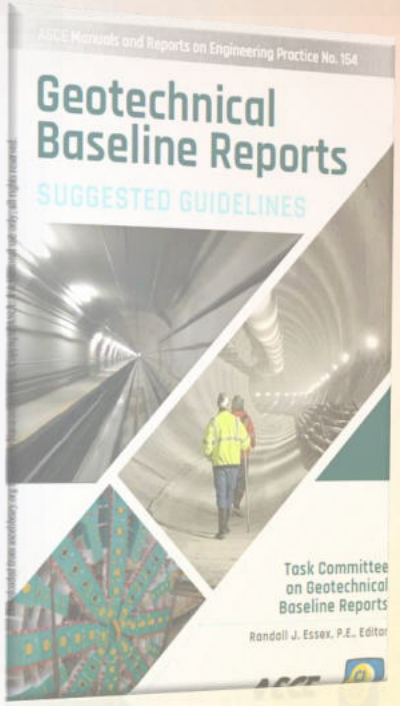
Underground Structures

1 Design and Construction of TBM Tunnels

2 **Design and Construction of Underground Structures**

2.2 | UG Structure excavation and lining works (Common to All Lines)

Employer's Designer – Reference Design



Ground, Groundwater & Environment
Geological and hydrogeological models
Geotechnical baseline parameters
Groundwater levels, regimes and sensitivities
Environmental constraints and mitigation principles

D&B Particulars

The Geotechnical Baseline Report (GBR) governs ground risk allocation and prevails over descriptive content.

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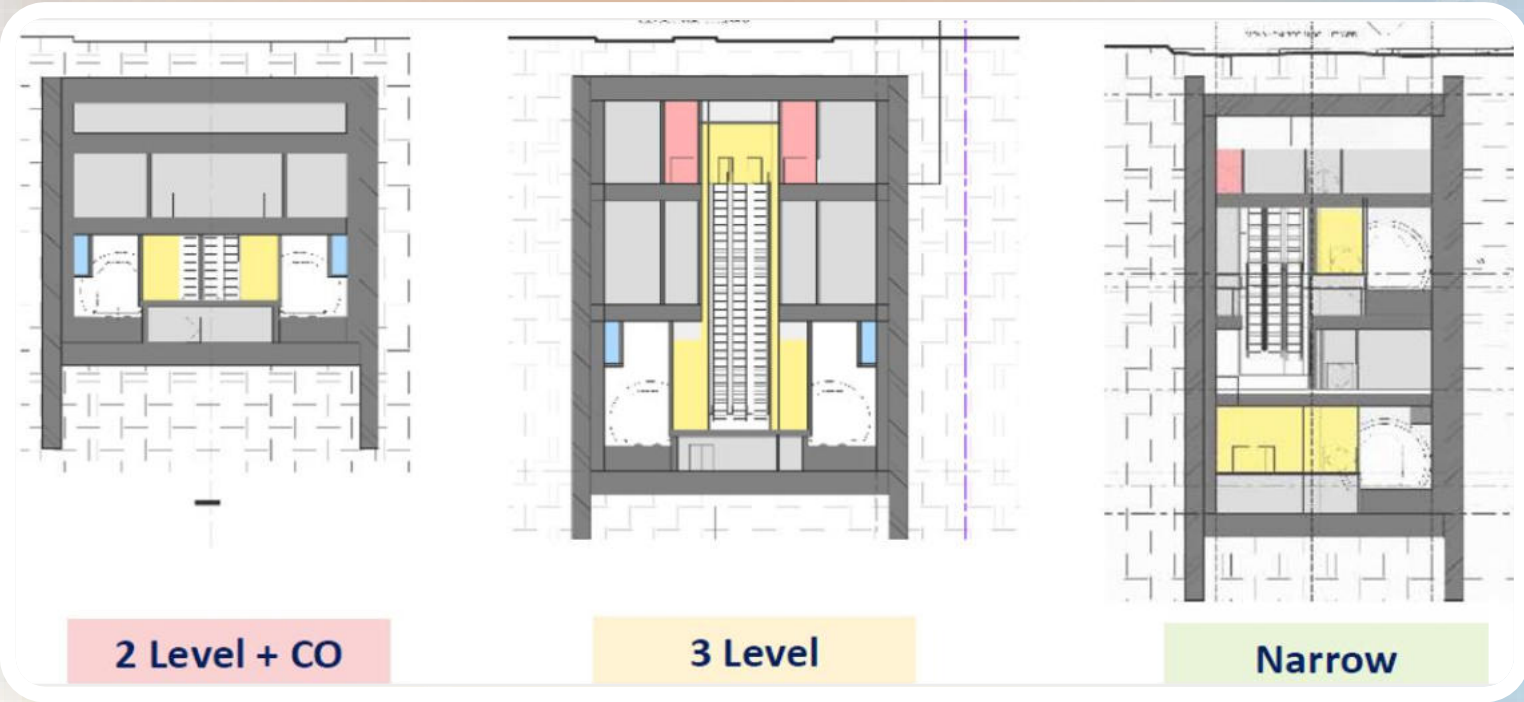
Underground Structures

1 Design and Construction of TBM Tunnels

2 **Design and Construction of Underground Structures**

2.1 | UG Structure OUTER BOX excavation and lining works (Common to All Lines)

Scope of Works



D&B Particulars

The selection of construction methodology, sequencing, excavation support systems and temporary works for the outer box remains the responsibility of the Design & Build Contractor, provided contractual performance, safety and interface requirements are satisfied.

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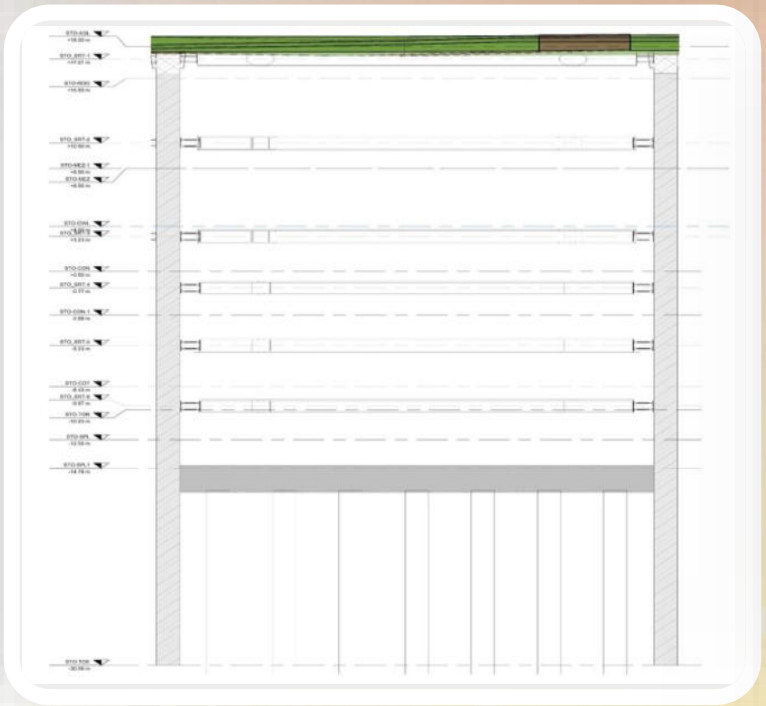
Underground Structures

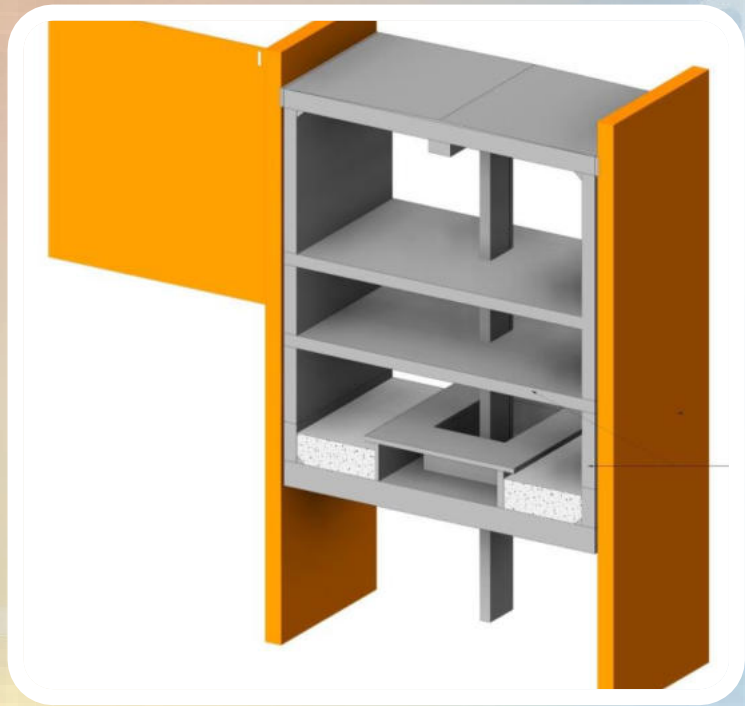
1 Design and Construction of TBM Tunnels

2 **Design and Construction of Underground Structures**

2.1 | UG Structure OUTER BOX excavation and lining works (Common to All Lines)

Scope of Works





D&B Particulars

The selection of construction methodology, sequencing, excavation support systems and temporary works for the outer box remains the responsibility of the Design & Build Contractor, provided contractual performance, safety and interface requirements are satisfied.

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Underground Structures

1 Design and Construction of TBM Tunnels

2 **Design and Construction of Underground Structures**

2.2 | Underground Structure excavation and lining works (Common to All Lines)

Employer's Designer – Reference Design

Underground Stations & Boxes
Outer box structural concept and footprint
Inner box structural concept and load-bearing system
Station galleries, caverns and interfaces with tunnels
Entrances, ventilation and escape shafts (civil scope)

Reference Design defines:
Structural arrangement and envelopes
Interface readiness for fit-out and systems
Waterproofing and drainage concepts
Construction staging constraints (without prescribing methods)

D&B Particulars

The selection of construction methodology, sequencing, excavation support systems and temporary works for the outer box remains the responsibility of the Design & Build Contractor, provided contractual performance, safety and interface requirements are satisfied.

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Underground Structures – Inner Box

1 Design and Construction of TBM Tunnels

2 **Design and Construction of Underground Structures**

2.2 | UG Structure INNER BOX lining works (Common to All Lines)

Scope of Works	**Design and construction of the inner box** **Completion of the permanent internal structure** **Integration with the outer box** **Provision of all embedded items and reserved openings**
D&B Particulars	The selection of construction methodology, sequencing, excavation support systems and temporary works for the outer box remains the responsibility of the Design & Build Contractor, provided contractual performance, safety and interface requirements are satisfied.

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Underground Structures – Inner Box

1 Design and Construction of TBM Tunnels

2 **Design and Construction of Underground Structures**

2.2 | UG Structure INNER BOX lining works (Common to All Lines)

Scope of Works	**Internal drainage and water management provisions** **Coordination with adjacent works and interfaces** **Handover of a finish-ready civil structure** **Provision of a complete waterproof envelope**
D&B Particulars	Architectural finishes, MEP systems, rail systems and operational equipment are excluded, except where embedded items and interface provisions are expressly required under this Scope.

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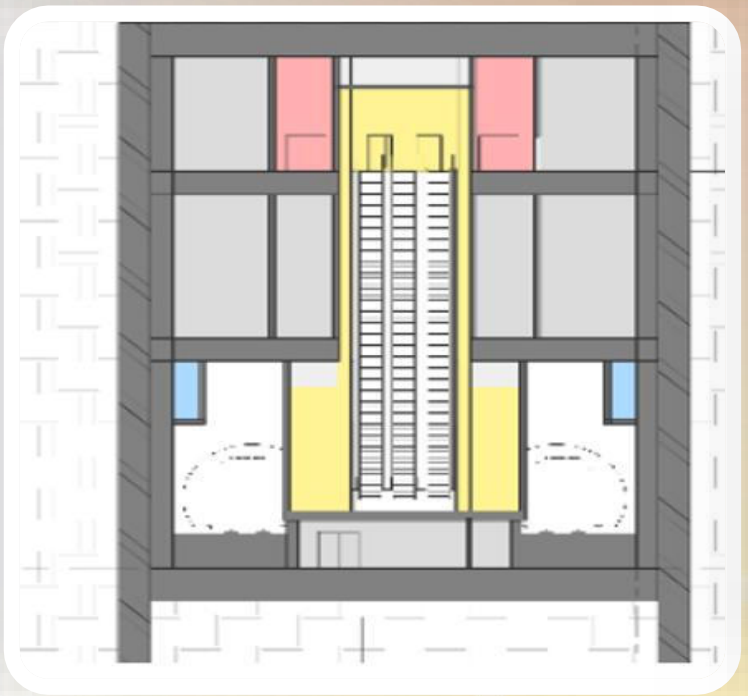
Underground Structures – Inner Box

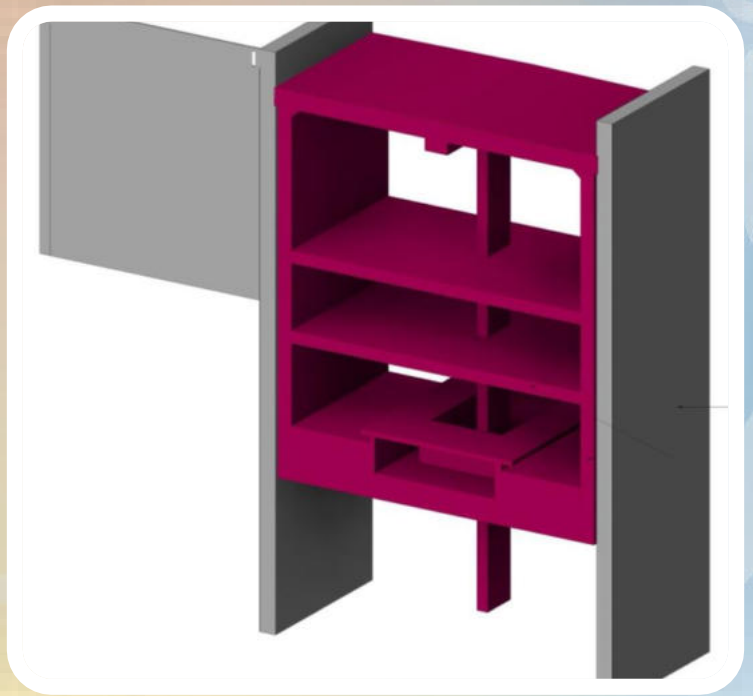
1 Design and Construction of TBM Tunnels

2 **Design and Construction of Underground Structures**

2.2 | UGd Structure INNER BOX lining works (Common to All Lines)

Scope of Works





D&B Particulars

Architectural finishes, MEP systems, rail systems and operational equipment are excluded, except where embedded items and interface provisions are expressly required under this Scope.

Infra 1 / Infra 2 Interfaces

Employer's Design | Excavation and lining works (Common to All Lines)

Reference Design: Interfaces & Coordination

Interface Definition (Infra 1)
Defined interface limits with:

- Infra 2 systems and fit-out
- Roads, utilities and third parties
- Existing and future infrastructure

Required embedded items and reserved openings
Dimensional tolerances and access requirements

BIM coordination and information exchange requirements

Outcome:
A complete, interface-ready civil shell suitable for D&B delivery.

What the Reference Design Does NOT Include

Explicit Exclusions
Detailed construction methods or sequencing
Temporary works design
Means and methods for tunnelling or excavation
Contractor-specific optimisation solutions
Detailed reinforcement, rebar schedules or shop drawings
These elements are developed by the Design & Build Contractor during Detailed Design.

Infra 1 / Infra 2 Interfaces

4 | Excavation and lining works (Common to All Lines)

Defined interface boundaries, including tunnels, stations, shafts, cross passages, outer and inner boxes, shall be delivered to agreed geometric, structural and tolerance requirements suitable for Infra 2 works.

Provision of all embedded items and reserved openings required for rail systems, MEP, architectural and operational installations, including sleeves, fixings, inserts, anchor points and penetrations.

Interface readiness at handover, including finish-ready civil surfaces, protection of waterproofing systems, completed drainage provisions and unobstructed access for Infra 2 installation works.

Coordination of load assumptions and operational interfaces, ensuring that structural capacities, fire-life-safety provisions and operational envelopes accommodate Infra 2 systems and equipment.

D&B Particulars	Infra 1 defines and delivers interface readiness; Infra 2 adapts installation design to verified as-built conditions within the defined interface limits.

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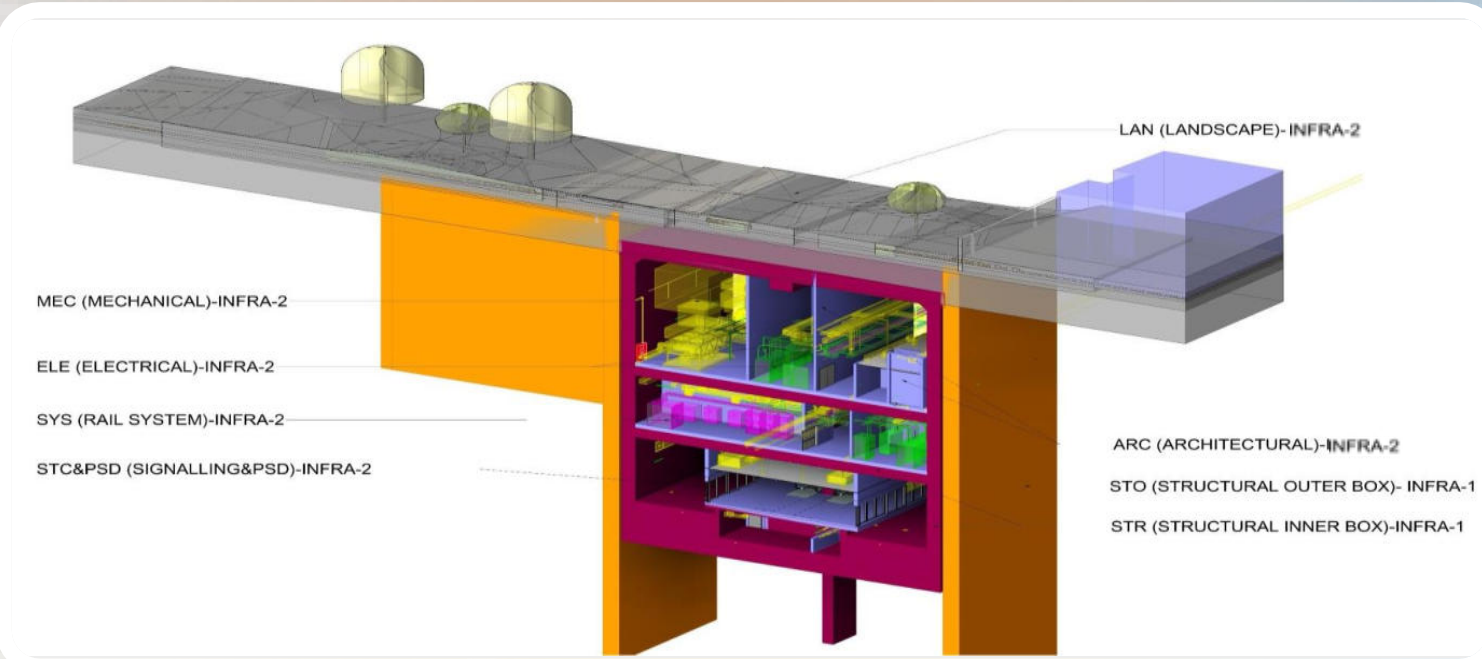
Infra 1 / Infra 2 Interfaces

1 Design and Construction of TBM Tunnels

2 **Design and Construction of Underground Structures**

4 | Underground Structure Interface with Infra 2 (Common to All Lines)

Scope of Works



D&B Particulars

Architectural finishes, MEP systems, rail systems and operational equipment are excluded, except where embedded items and interface provisions are expressly required under this Scope.

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Thank You & Shalom



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Risk Mitigation

How We Manage Logistic Challenges



Noam Dan Lahav

Metro projects Department, NTA



What are we going to talk about?

Reducing Contractor Risk Through Strategic Management



What are we going to talk about?

Reducing Contractor Risk Through Strategic Management



- Surplus soil
- Foreign workforce

Surplus Excavated Soil in the Metro Project

Total excavation volume is estimated at approximately 45 million cubic meters. About 28 million cubic meters (~60%) are in Stage 1, of which roughly 50% is designated for disposal.



~15 million cubic meters cannot be reused.

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Win-Win Solution:
Restoring Quarries with Surplus Soil

Beit - Meir Quarry –
5 million cubic meters



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Win-Win Solution:
Restoring Quarries with Surplus Soil

Gan Rave Quarry –
1.2 million cubic meters



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Win-Win Solution:
Restoring Quarries with Surplus Soil

Kfar Menahem Quarry –
1.6 million cubic meters



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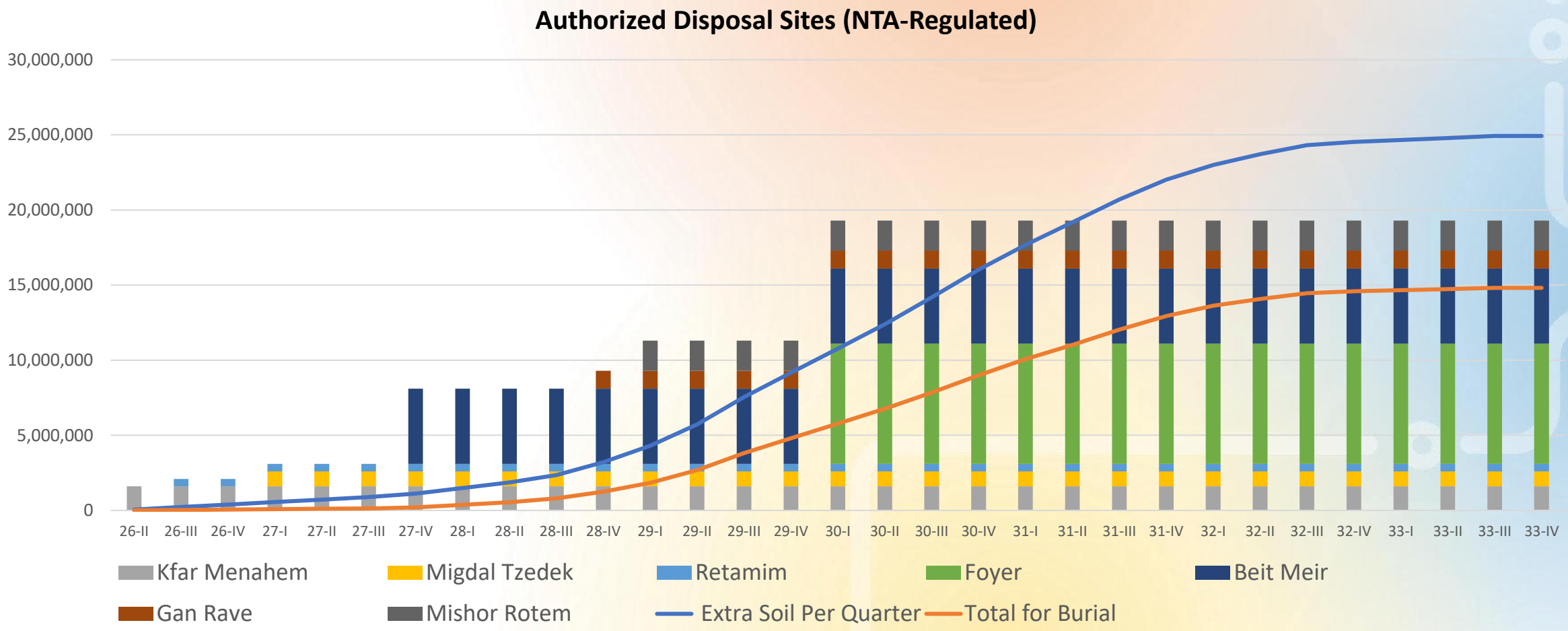
Win-Win Solution:
Restoring Quarries with Surplus Soil

Foyar Quarry –
8 million cubic meters



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Surplus Excavated Soil and Quarry Capacity



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Map of Local Disposal Facilities

Total capacity of approximately 11 million m³:

Foyer Quarry – 8.0 million m³

Kfar Menahem Quarry – 1.6 million m³

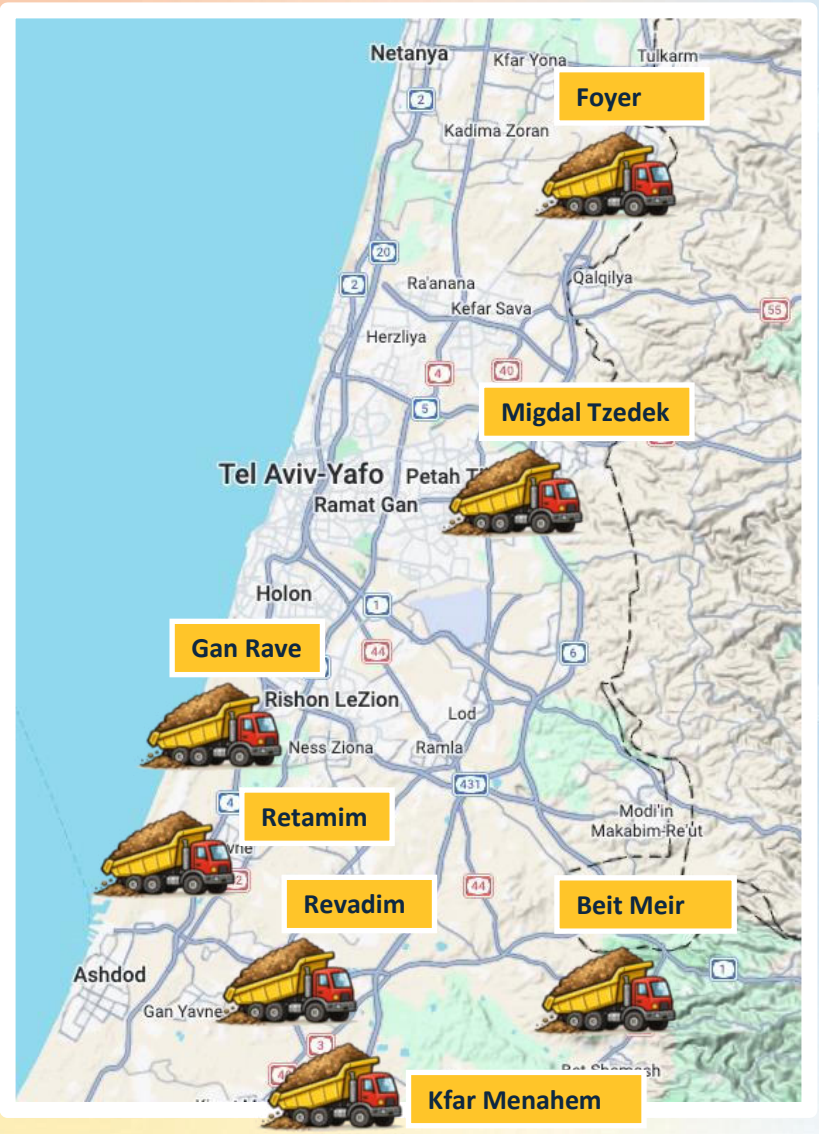
Gan Rave Quarry – 1.2 million m³

Beit Meir Quarry – 5.0 million m³

Migdal Tzedek Quarry – 0.8 million m³

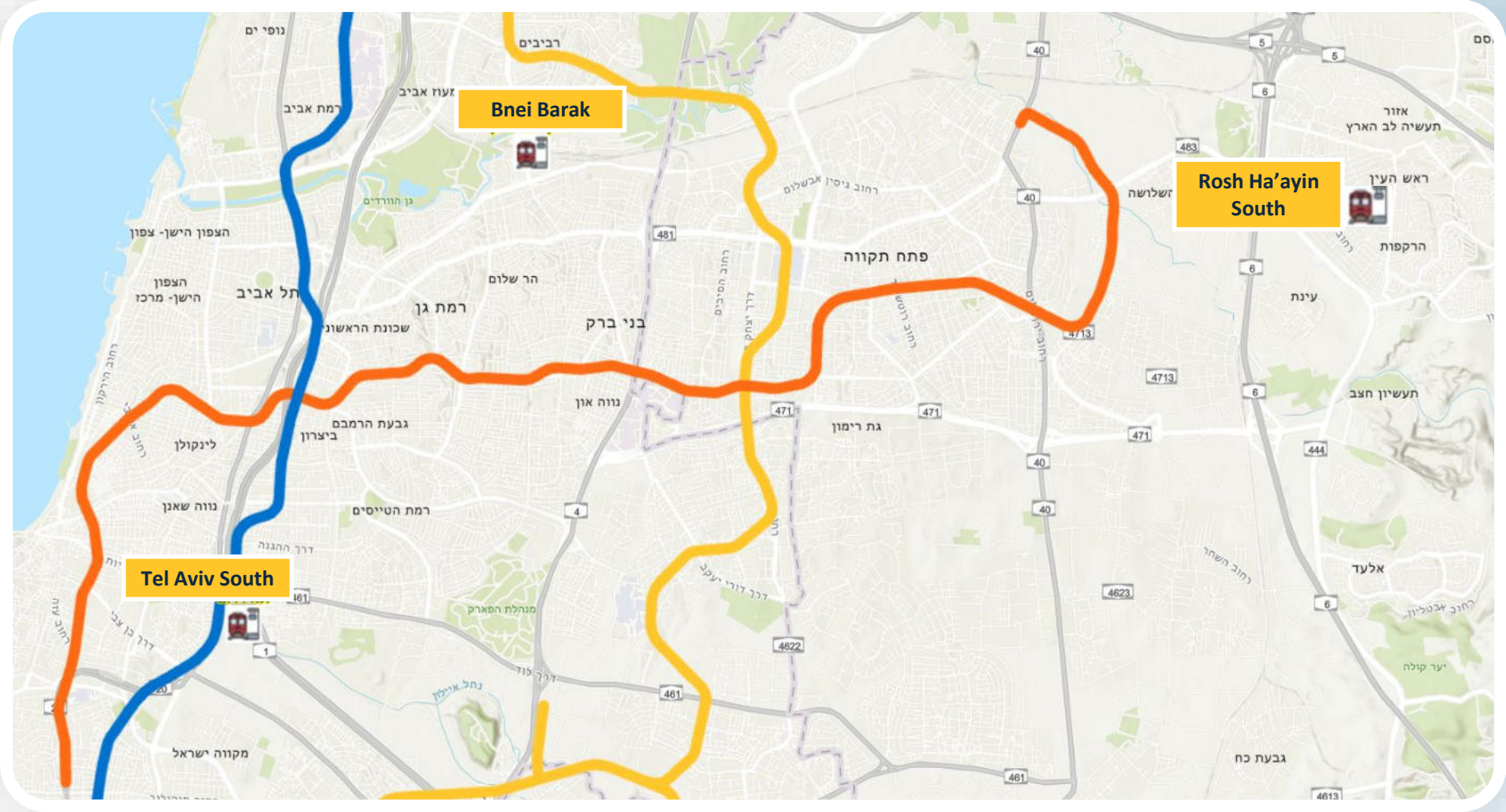
Retamim Landfill – 0.5 million m³

Rotem Plain (Southern Dead Sea Area) – 2.0 million m³



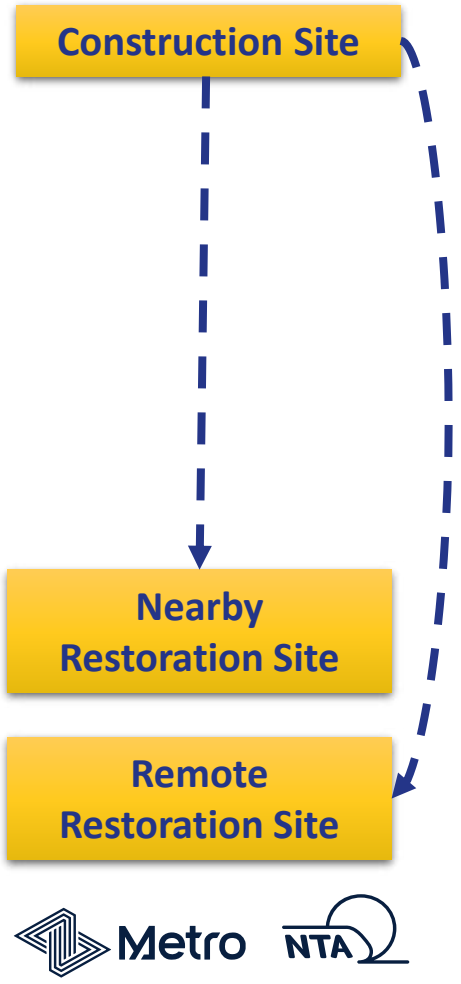
Rail Terminals in the Metropolitan Area

Terminal
Bnei Barak
Tel Aviv South - Planned
Rosh Ha’ayin South



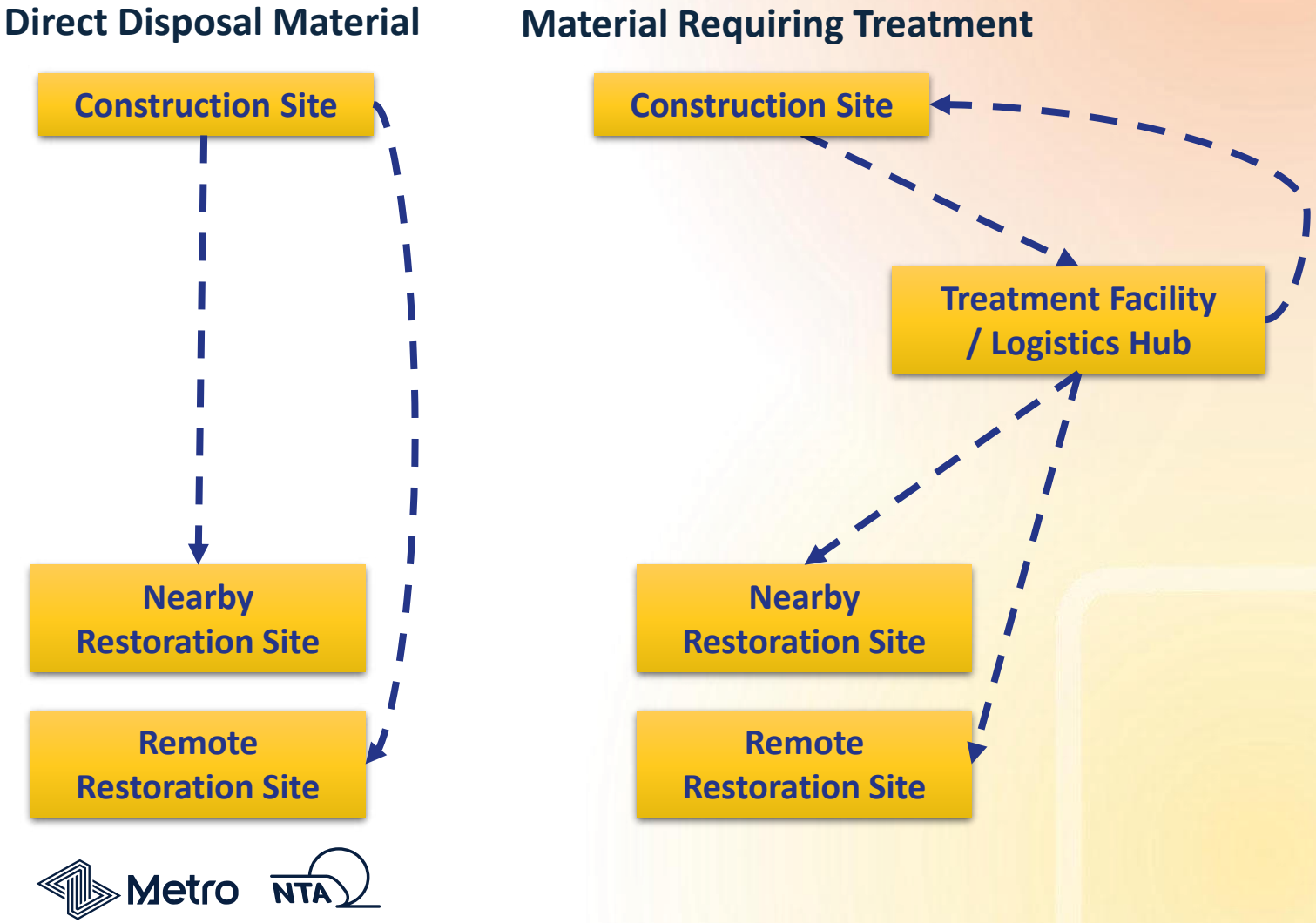
Surplus Excavated Soil Management Strategy

Direct Disposal Material



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Surplus Excavated Soil Management Strategy



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Surplus Excavated Soil Management Strategy

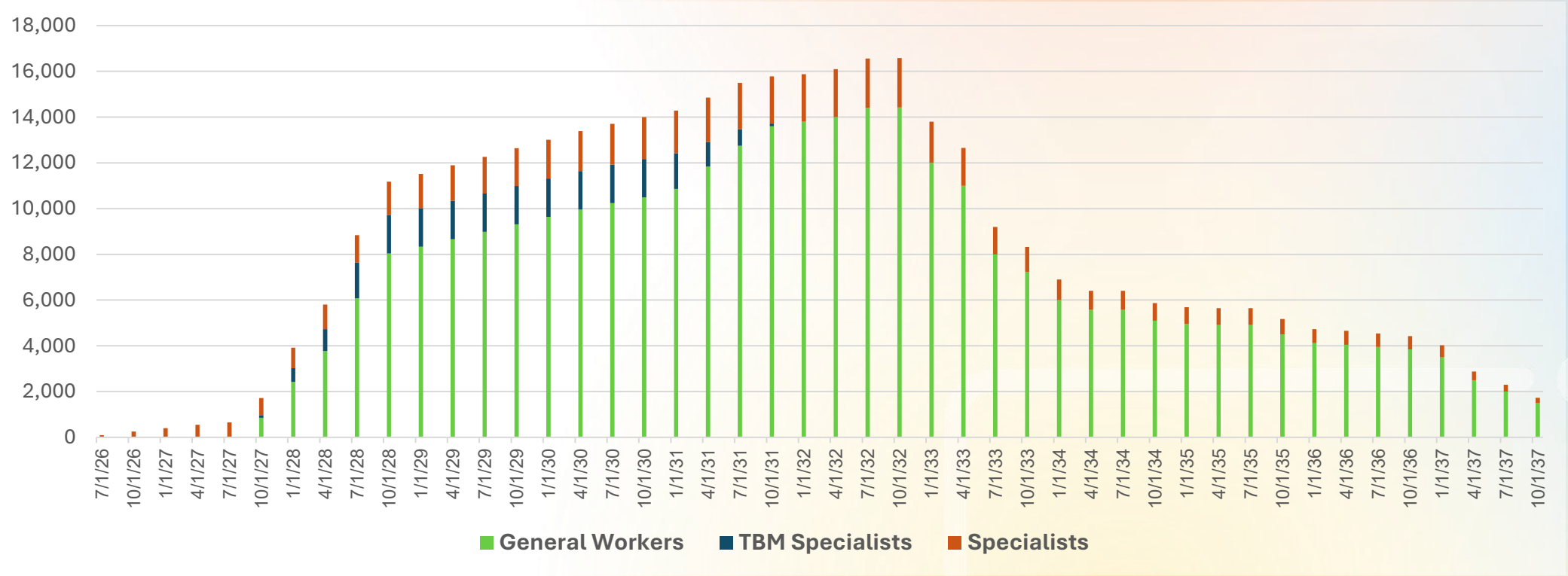


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Foreign Workforce Deployment Timeline

General Workers, Skilled Workers, and Specialists



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Foreign Workforce Required Headcount by Year

Year	General Workers	Equipment & Technology Specialists	Specialists	Total
2026			250	**250**
2027	850	120	650	**1,620**
2028	8,000	1,700	1,500	**11,200**
2029	9,300	1,700	1,650	**12,650**
2030	10,500	1,700	1,800	**14,000**
2031	13,600	1,600	2,200	**17,400**
2032	14,400	1,600	2,200	**18,200**
2033	12,000	1,000	1,800	**14,800**
2034	6,000	500	1,200	**7,700**
2035	5,000	0	800	**5,800**
2036	4,000	0	600	**4,600**
2037	3,000	0	300	**3,300**

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Two Key Challenges

Recruitment and Accommodation



Recruitment of Foreign Workers

- Direct recruitment of foreign workers by contractors is required
- Concerns regarding long visa approval processes
- Specialist employment restrictions – current regulations limit spouse employment and restrict residency to 63 months



Worker Accommodation

- Provision of housing for approximately 16,000 foreign workers at peak project demand

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Foreign Workforce Solutions Key Principles

רשות האוכלוסין וההגירה
Population & Immigration Authority
سلطة السكان والهجرة

Fast-track visa process
Establishment of a dedicated visa track for Metro workers through the Population and Immigration Authority.



Dedicated workforce quota
Allocation of a dedicated quota of 16,000 foreign workers specifically for the Metro project.



Direct recruitment framework
Enabling contractors to directly recruit and bring in workers they are familiar with and trust, based on proven relevant experience.



Extended stay for Metro experts
Allowing Metro experts to remain in Israel beyond 63 months, including family and work permits for spouses.



Designated sites for foreign worker housing
Including approvals for establishing housing facilities or the use of temporary structures for foreign workers.

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Thank You & Shalom



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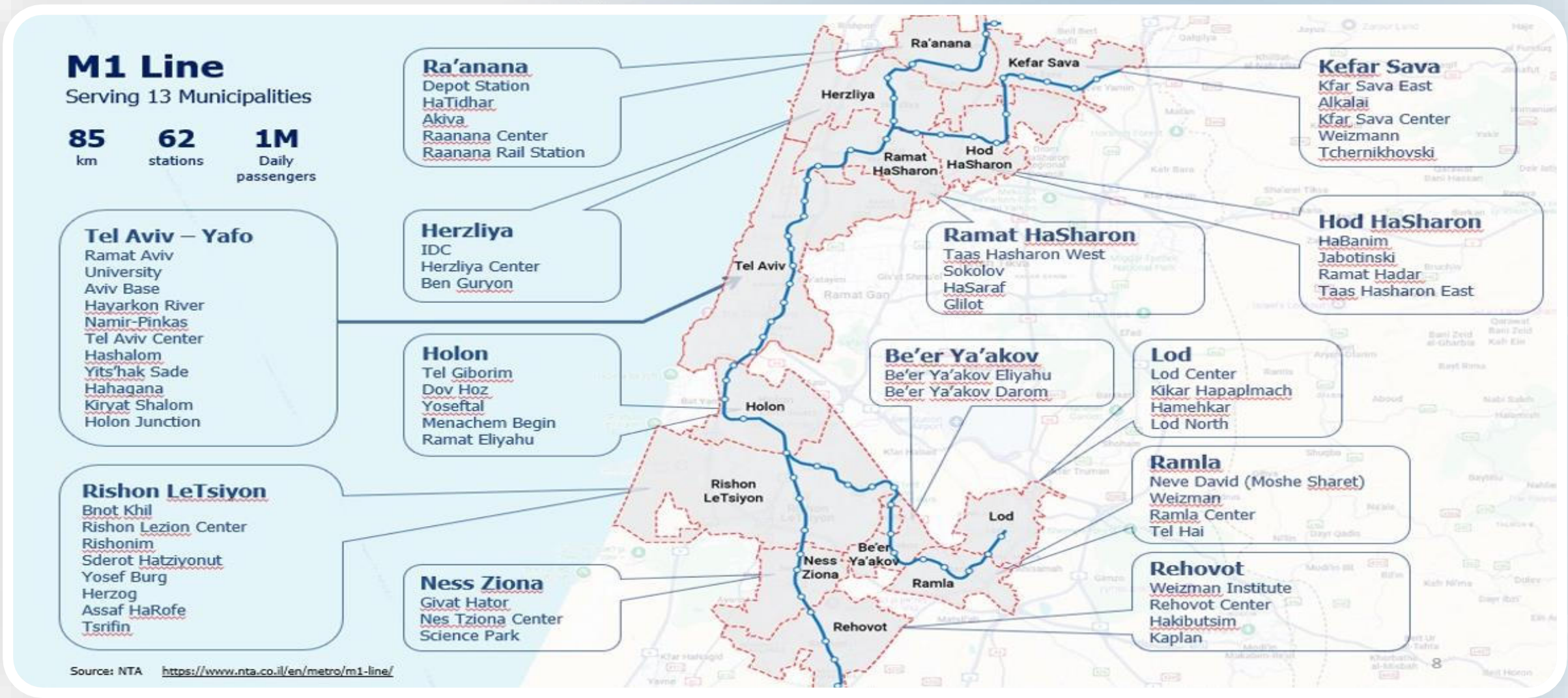
Line M1



Roberto Nassi
Project Lead Designer M1
Project Director, Metro Milano

Metro NTA

Line M1



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(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Line M1 - General Overview

Execution Stage 1 - Central

28.6 Km
20 Stations
10 Operational Elements
1 Depot
3 HV Substations

Execution Stage 2 - Branches

North

28 Km
20 Stations
8 Operational Elements
1 Depot
1 HV Substations

South

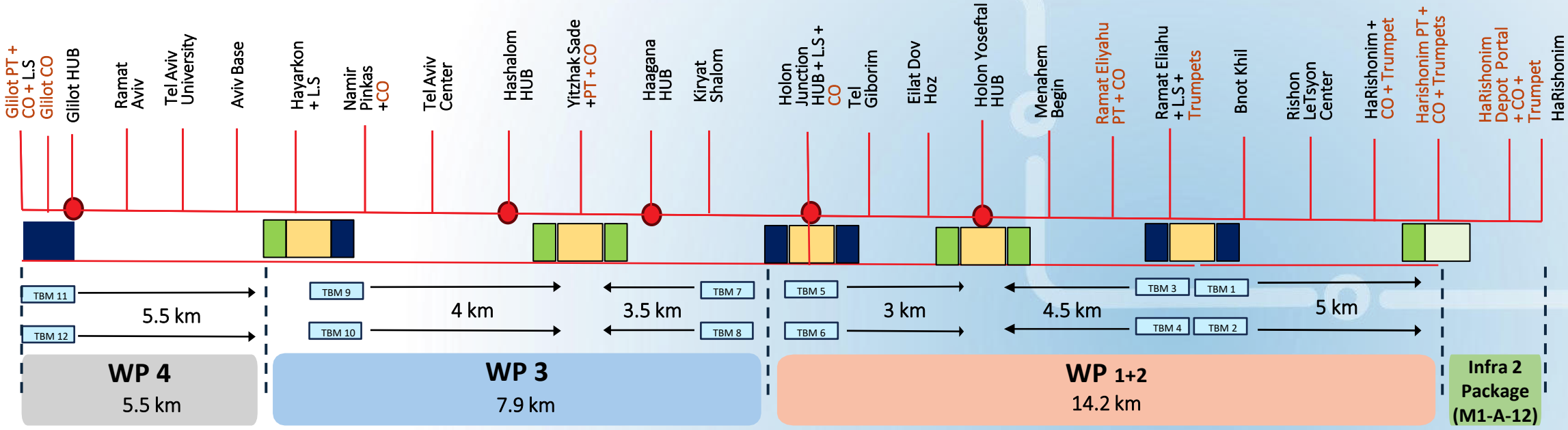
29 Km
22 Stations
7 Operational Elements



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Line M1 - Stage 1 Work Packages

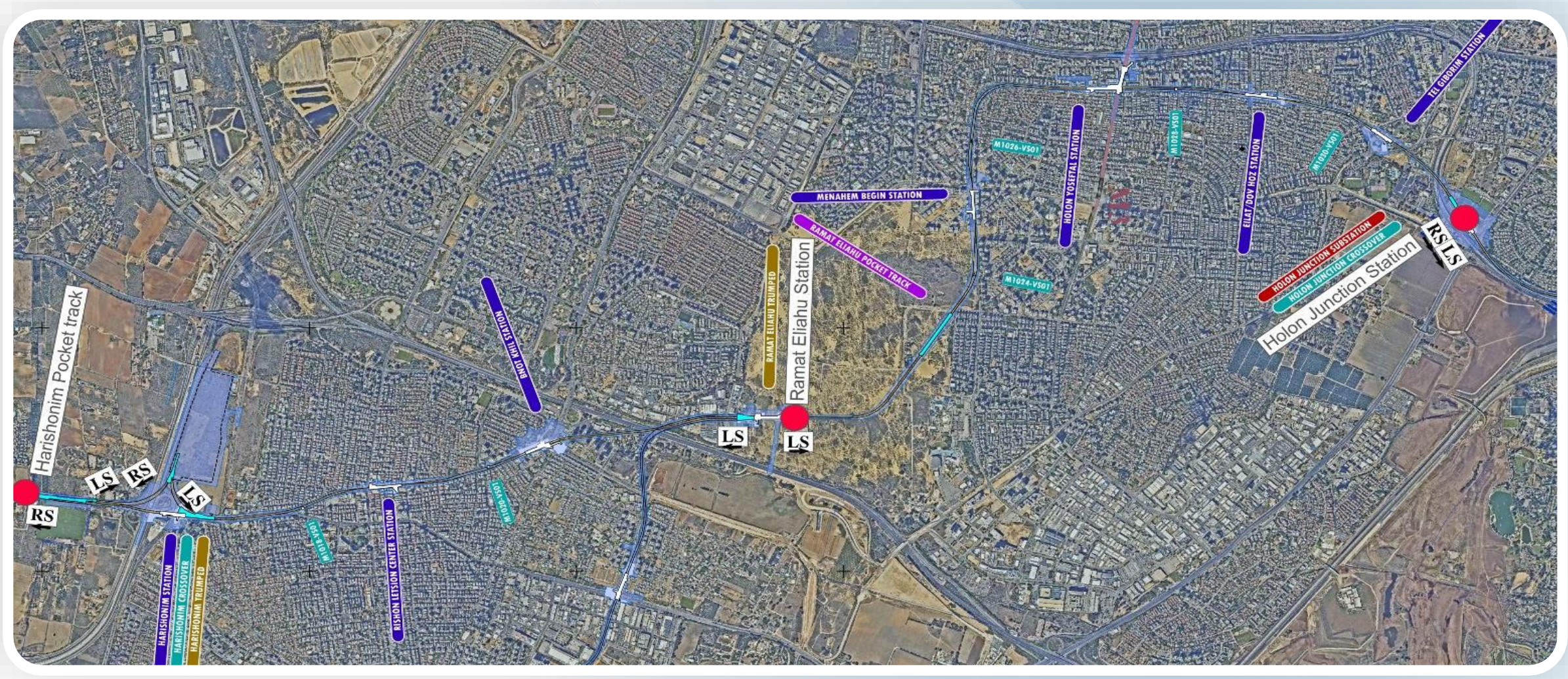


Work Packages	No. Stations	No. of Elements
Package 1 + 2	9	6
Package 3	7	2
Package 4	4	2
Total	**20**	**10**

Launching Shaft
Retrieval Shaft
Hub
Operational Element
CO&&PT &Terminus
TBM drive
TBM
Station with shaft

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Line M1 - Sub-Stage Implementation Map



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Line M1 - Stations Configurations Summary (WP1+2)

		Stations Dimension [Length/Width/Depth]	Top of Uppermost Rail	# Entrances	# Levels	Station Type
1	Harishonim	415/27/24	22.05	3	2 Level	2-Level + Operational Element
2	Rishon Letzion Centre	240/23/38-42	26.5	2	4 Level	4-Level Narrow – High Ridership
3	Bnot Khil	200/27/34	8.65	3	3 Level	3-Level
4	Ramat Eliyahu	350/27/21-25	22.0	3	2 Level	2-Level + Operational Element
5	Menachem Begin	244/23/36-28	8.58	2	4 Level	4-Level Narrow
6	Holon Yoseftal	270/27/27	-0.36	5	4 Level	4-Level Interchange Hub with M3 crossing below
7	Dov Hoz	240/22/37-41.5	2.97	2	4 Level	4-Level Narrow
8	Tel Giborim	186/27/27-39	-4.9	2	4 Level	4-Level (3 levels + 1 level due to hill park above)
9	Holon Junction	360/27/30	-10.23	2	3 Level	3-Level Hub + Operational Element

* For stacked stations, T.O.R. refers to the elevation of the top of the uppermost rail

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(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

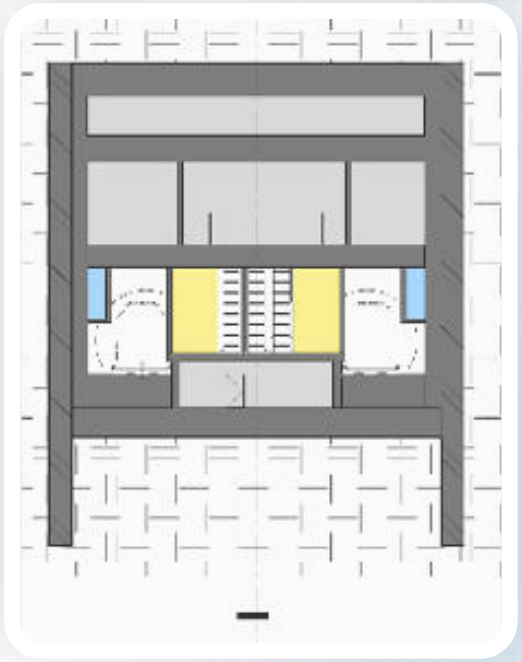
Line M1 - List of stations and elements of (WP1+2)

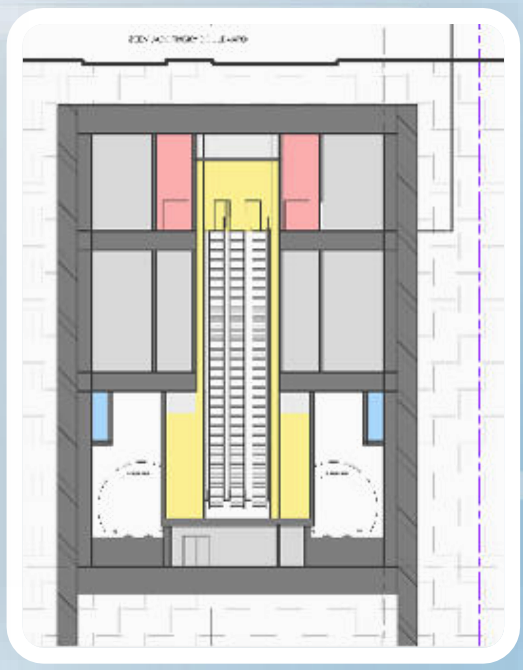
Length-WP1+2 [KM]	Number of Stations and Operational Elements	#	
14.2 km	6 Operational Elements 6 Escape Shafts 9 Stations 2 Launching Shafts	1	HaRishonim Pocket Track
		2	HaRishonim Station & CO & Trumpet
		3	Rishon LeTsiyon Center South Esc. Shaft
		4	Rishon LeTsiyon Center Station
		5	Rishon LeTsiyon Center North Esc. Shaft
		6	Bnot Khil Station
		7	Ramat Eliahu Station &Trumpet & Launching Shaft
		8	Harishonim Portal & CO & Trumpet
		9	Ramat Eliyahu Pocket Track
		10	Menachem Begin East Esc. Shaft
		11	Menahem Begin Station
		12	Menachem Begin West Esc. Shaft
		13	Holon Yoseftal Station
		14	Eilat Dov Hoz South Esc. Shaft
		15	Eilat Dov Hoz Station
		16	Eilat Dov Hoz North Esc. Shaft
		17	Tel Giborim Station
		18	Holon Junction Station+ Crossover & Launching Shaft

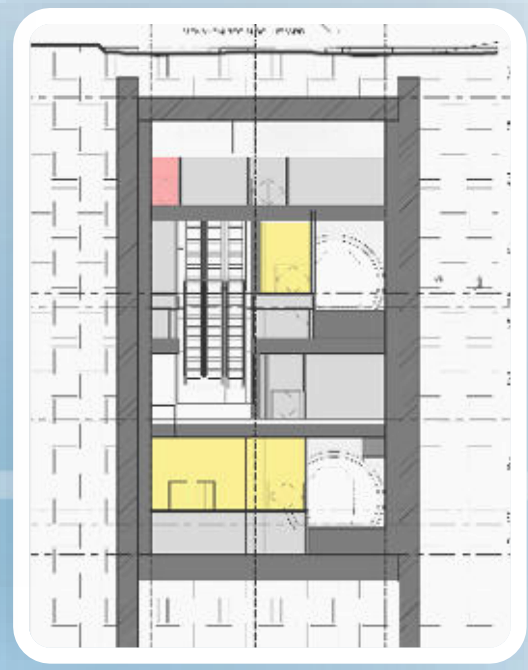
Metro NTA

(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Line M1 - Station Typologies







Station Typology	2 Level + CO	3 Level	Narrow
Typical Dimensions	≈ 27 Width ≈ 200 Length ≈ 16 Height	≈27 Width ≈ 200 Length ≈ 23 Height	≈23 Width ≈ 250 Length ≈ 35 Height

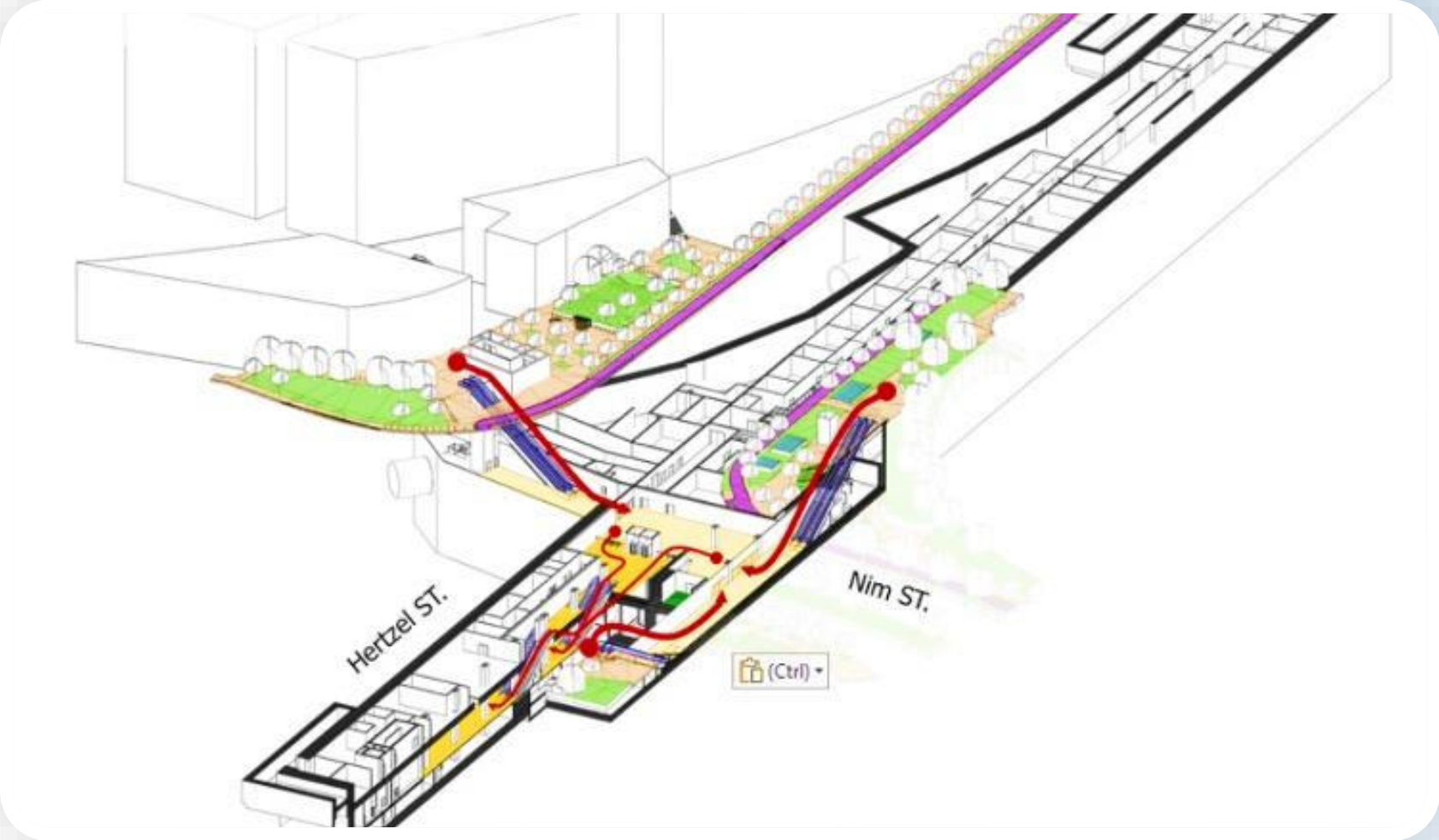
Metro NTA

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Line M1 - 2 Level Station

Advance Level of maturity of the Design

- Harishonim Station

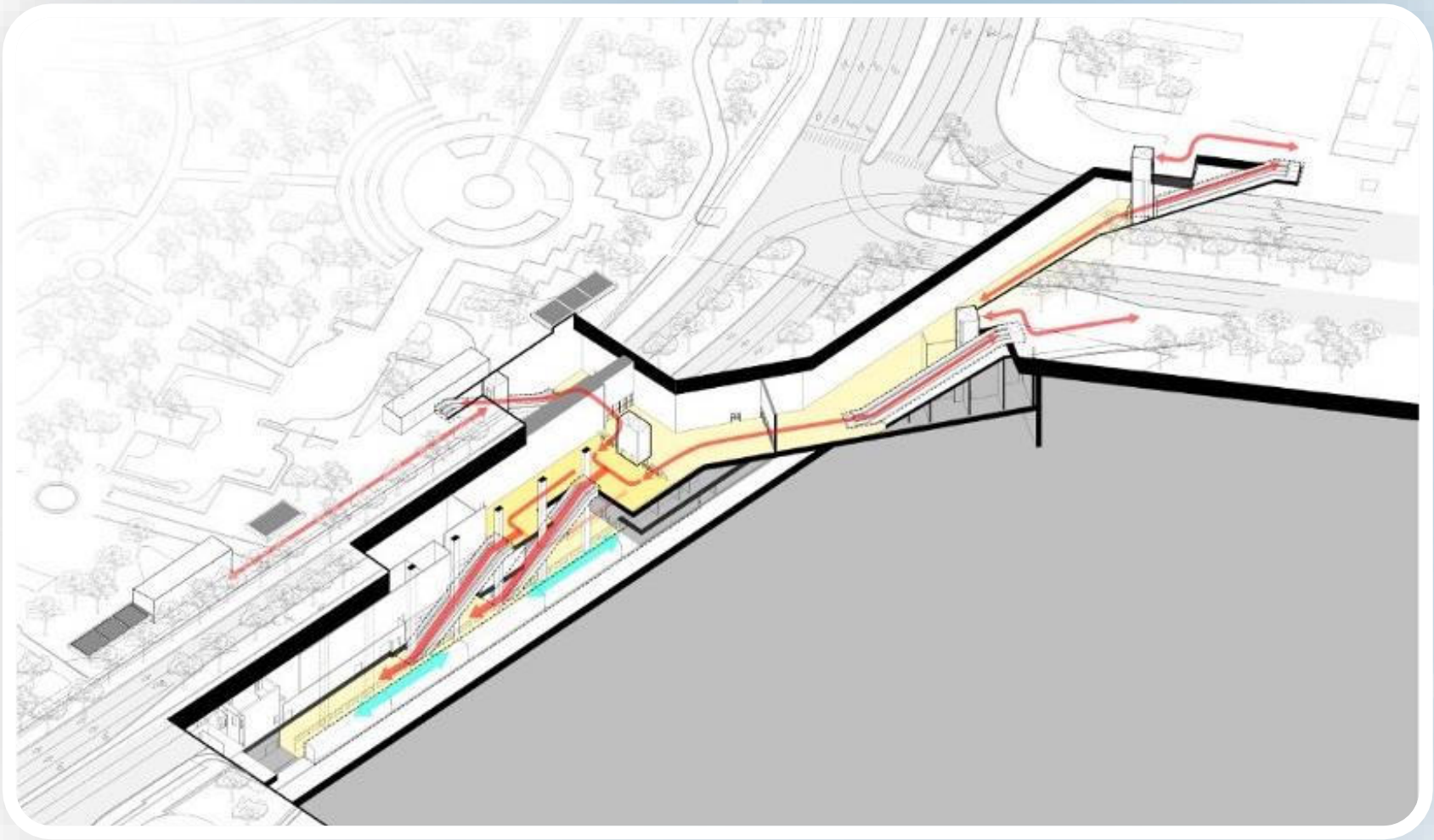


(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Line M1 - Typical 3 Level Station

Advance Level of maturity of the Design

- Bnot Khil Station

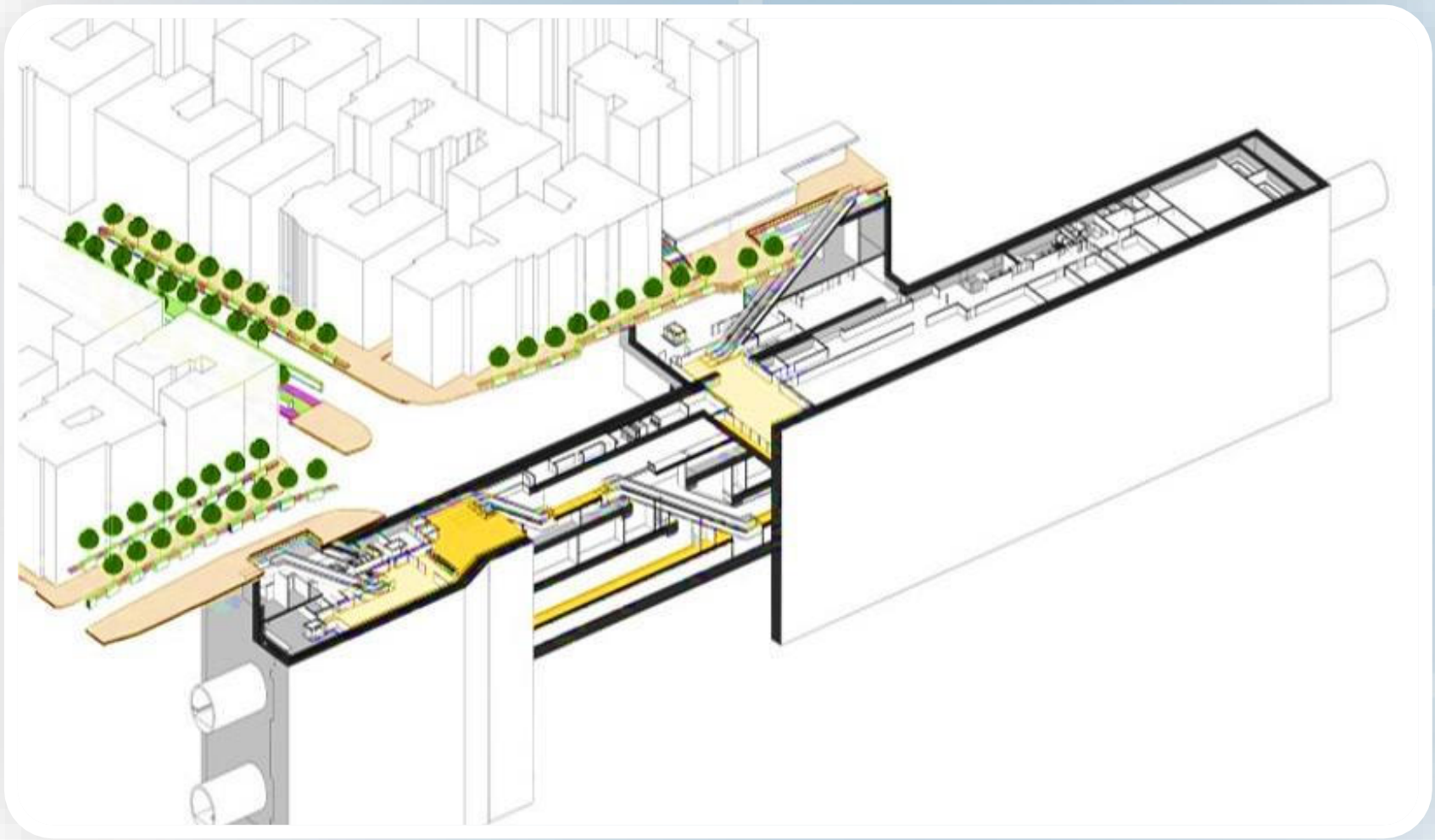


(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Line M1 - Typical Narrow Station

Advance Level of maturity of the Design

- Eilat Dov Hoz Station Stacked Tunnel

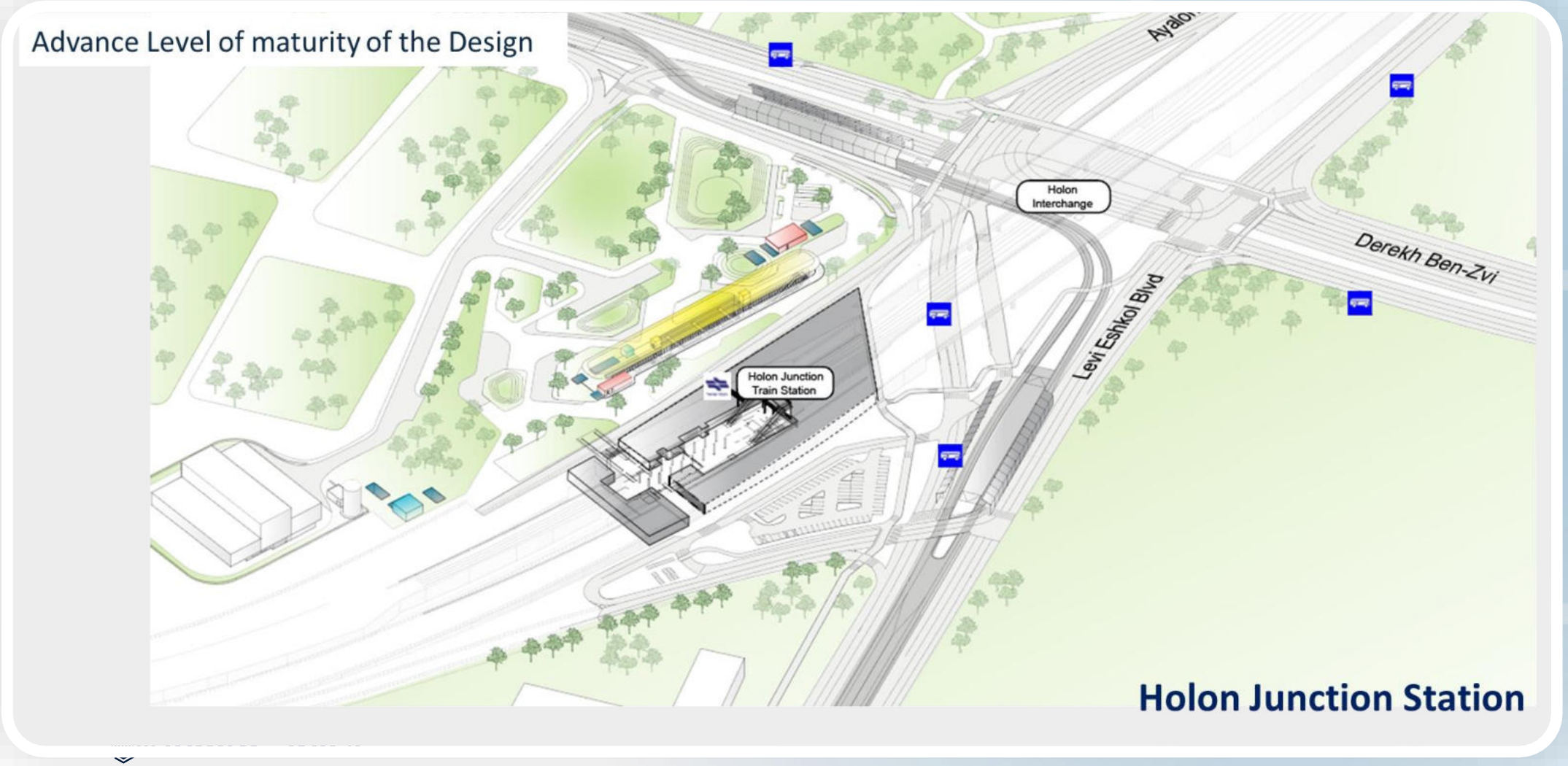


Metro NTA

(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Line M1 - 3 Level HUB Station

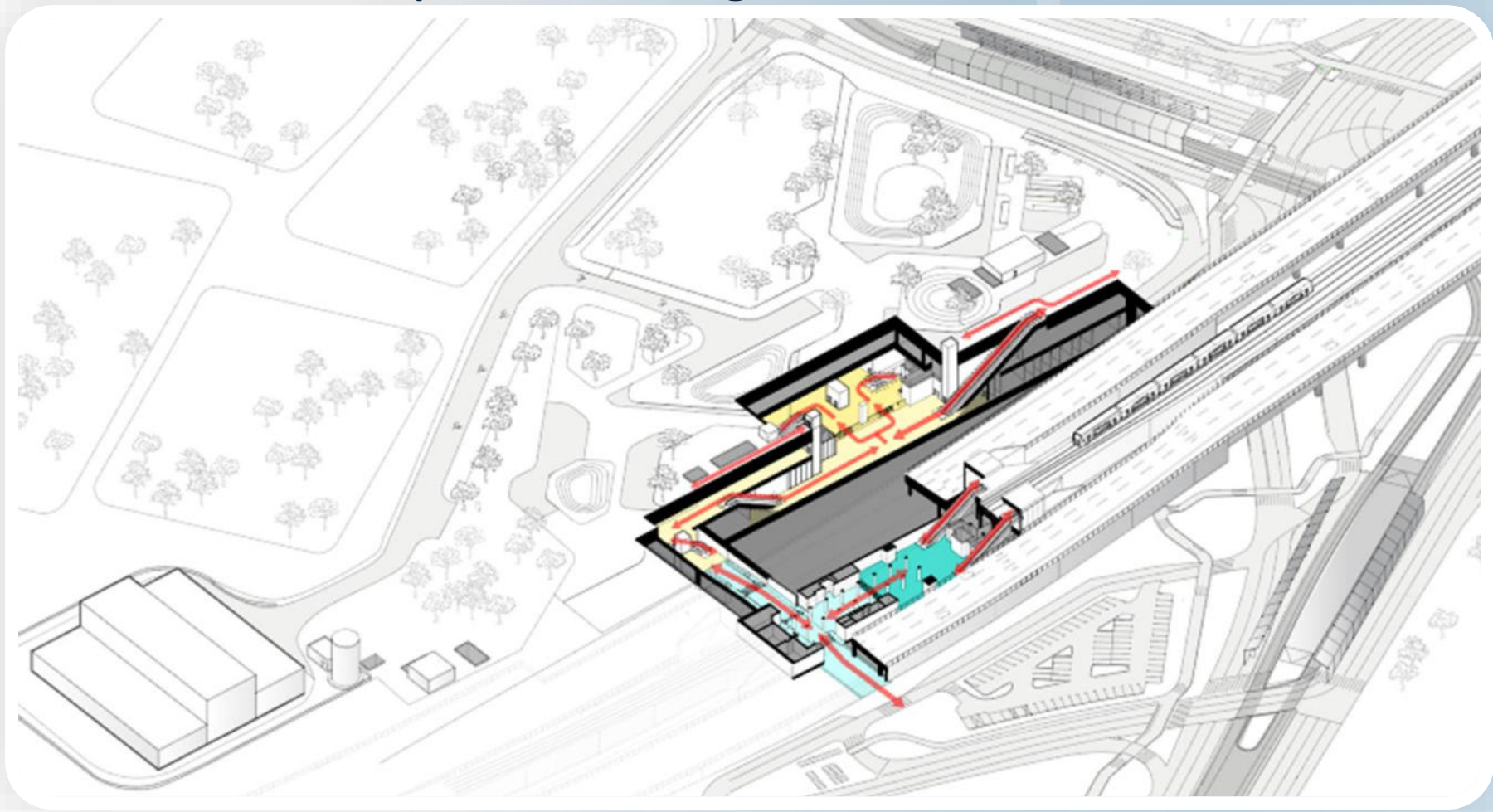
Advance Level of maturity of the Design



(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Line M1 - 3 Level HUB Station

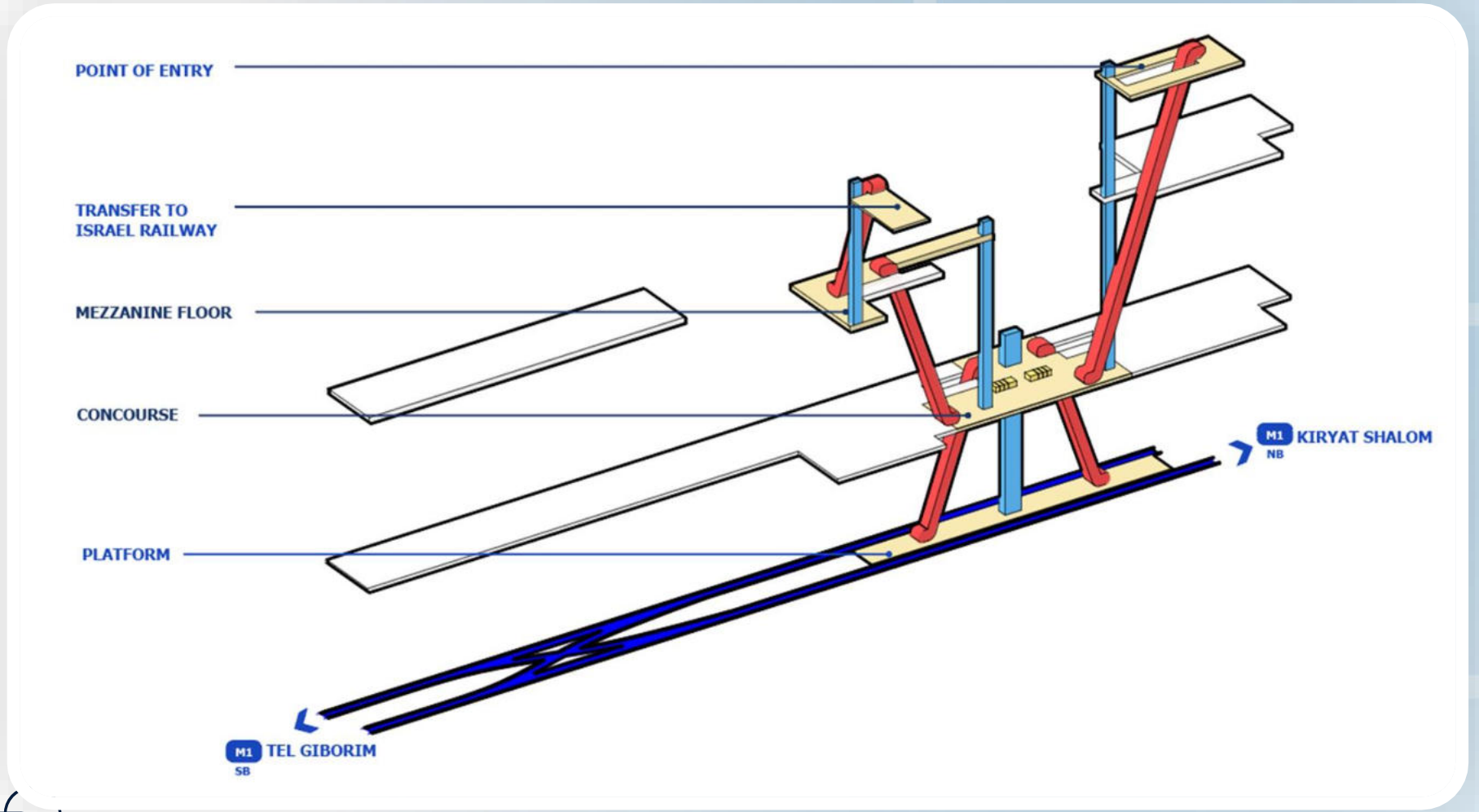
Advance Level of maturity of the Design



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Line M1 - 3 Level HUB Station

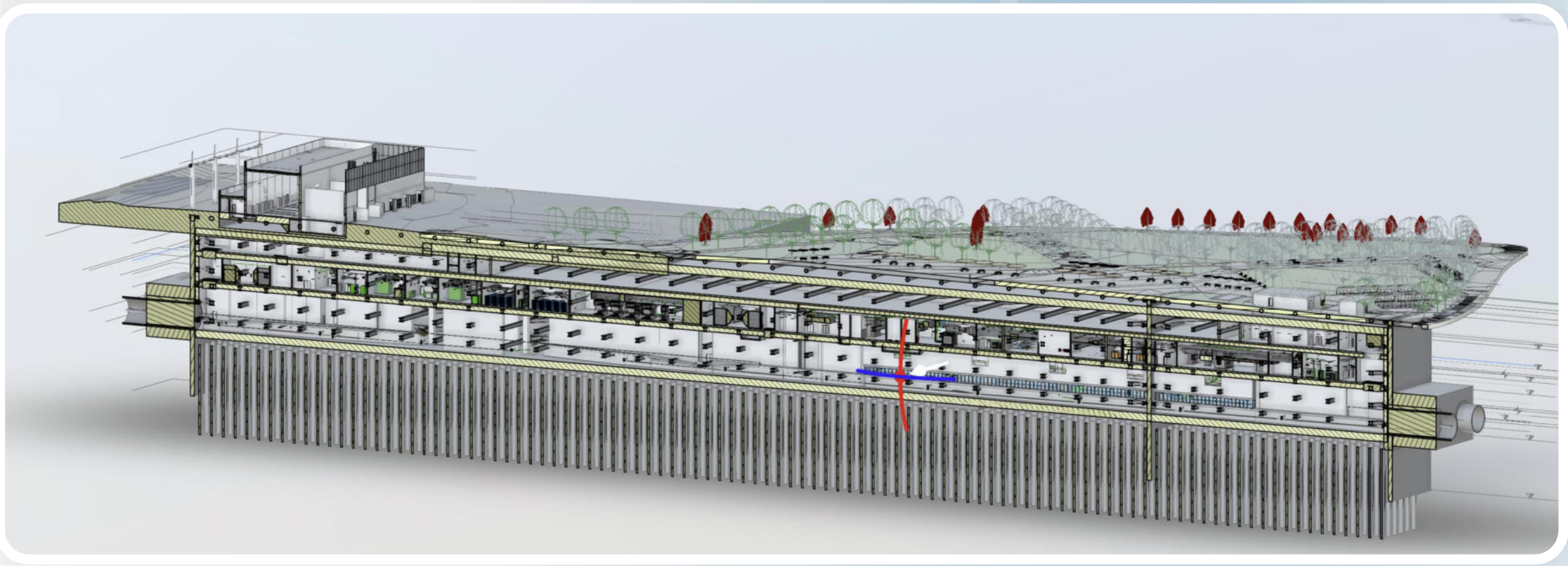
Advance Level of maturity of the Design



(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Line M1 - 3 Level HUB Station

Advance Level of maturity of the Design



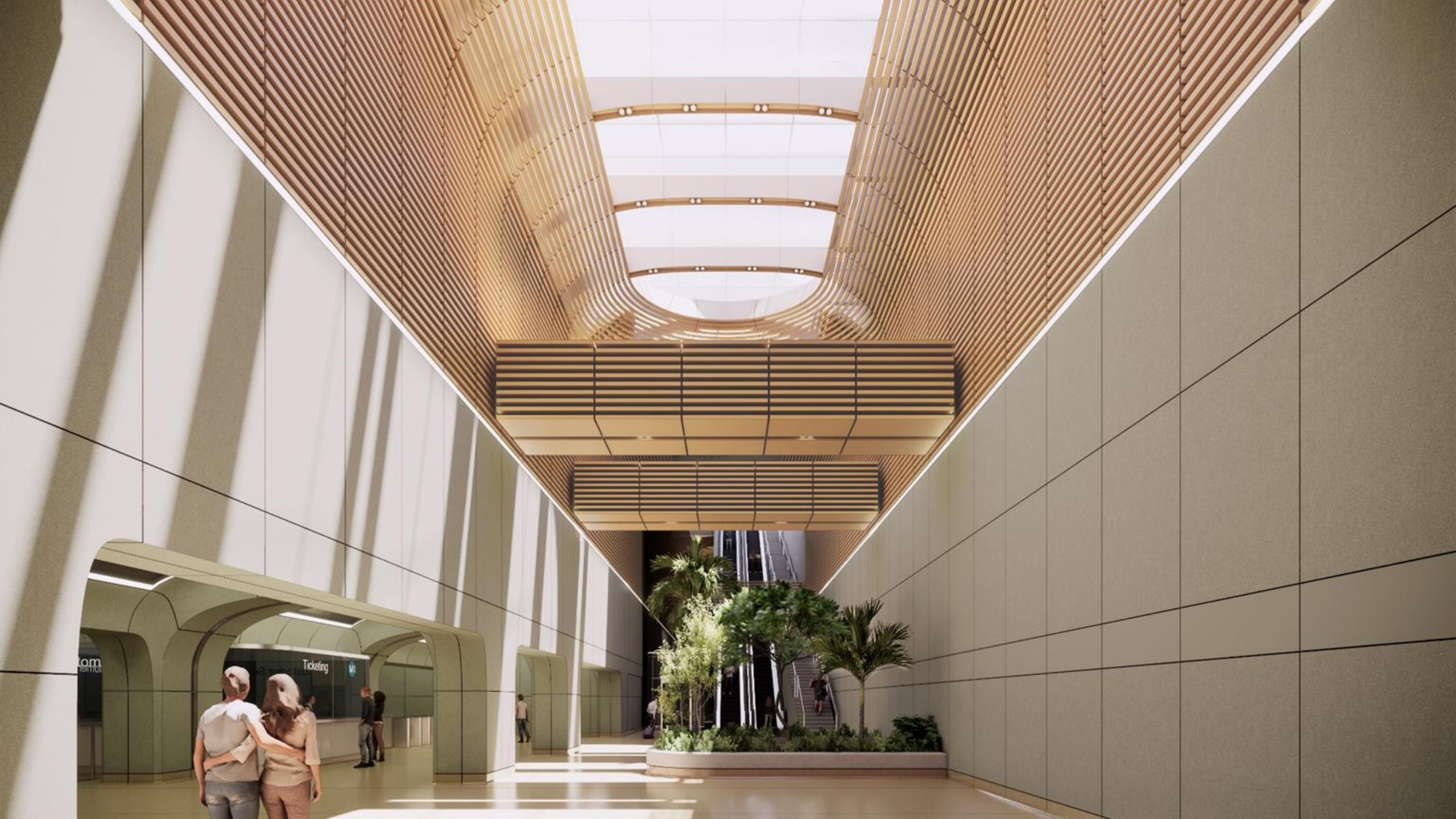
Metro NTA

(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Entrance portal




רציפים
Platforms
أرصفة

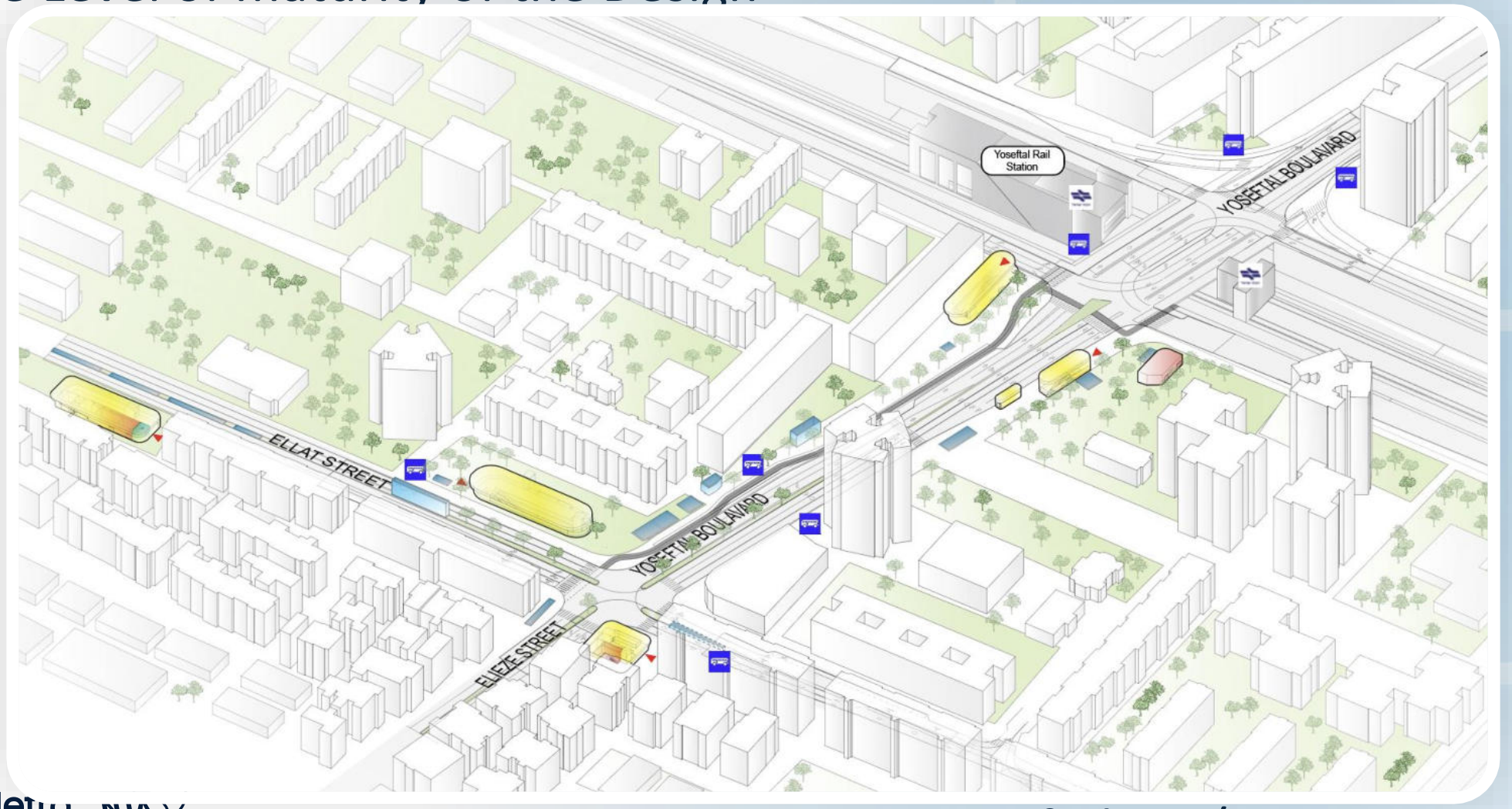

Ticketing

Concourse Aternate



Line M1 - Interchange Station

Advance Level of maturity of the Design

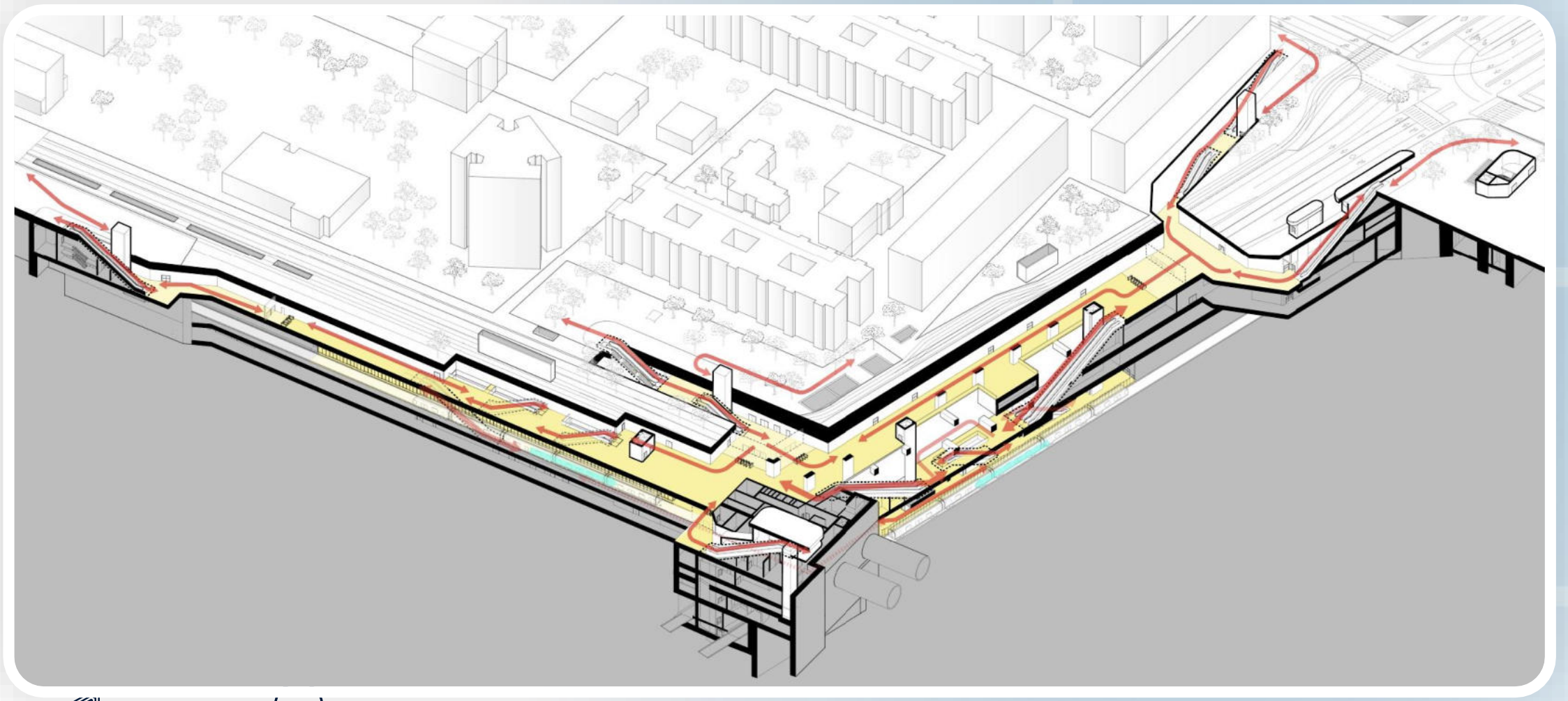


Yoseftal M1/M3 Station

(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Line M1 - Interchange Station

Advance Level of maturity of the Design



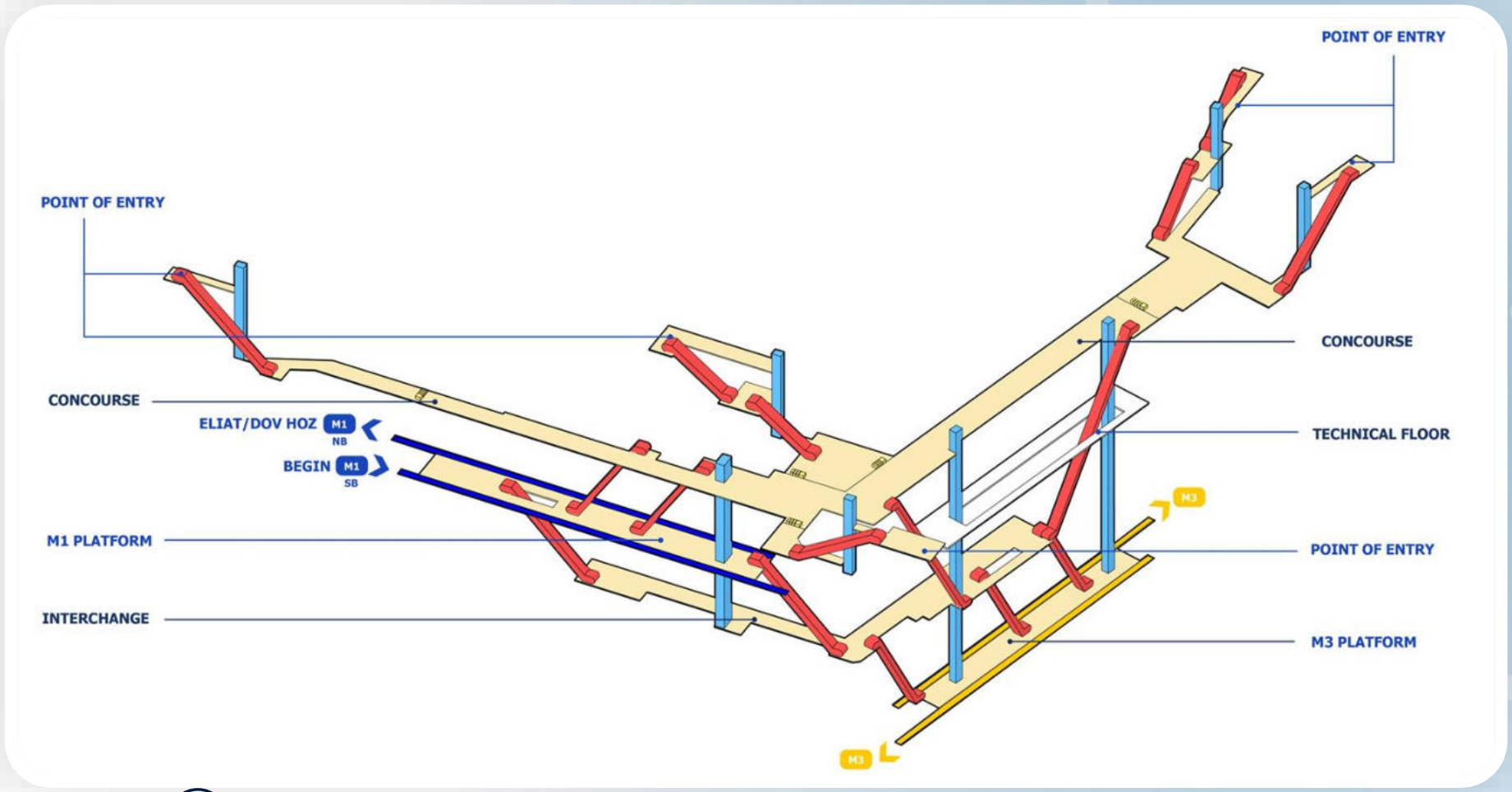
Metro NTA

Yoseftal M1/M3 Station

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Line M1 - Interchange Station

Advance Level of maturity of the Design



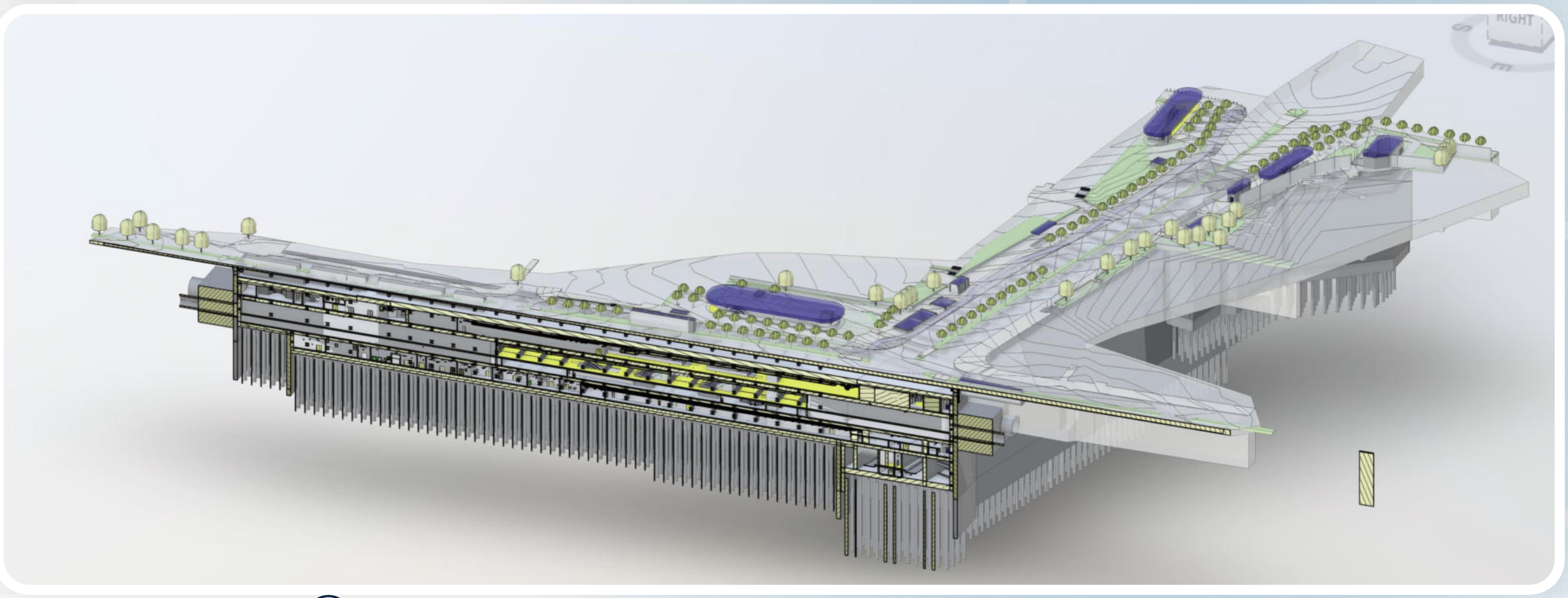
Metro NTA

Yoseftal M1/M3 Station

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Line M1 - Interchange Station

Advance Level of maturity of the Design



Metro NTA

Yoseftal M1/M3 Station

(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Entrance Design



M3 Concourse



M3 Concourse



M3 Triple Height Space



M3 Interchange Concourse



M3 Interchange Concourse



Line M1 - Typical Operational Elements

Track Geometry & Layout

- Connected via turnouts from both main tracks
- Designed for low-speed movements
- Compact geometry suitable for underground constraints
- Typically center pocket configuration
- Pocket Tracks and Turnouts: Switch 1:9, radius 190 m, velocity in siding 40 km/h.

Scissor Crossover

- Superior performance during degraded operating conditions
- Enables Temporary Single-Track (TST) operation when one track is out of service
- Allows bidirectional train movement on a single track
- Maintains partial service instead of full line shutdown
- Reduces:
  - Train turnbacks
  - Line closures
  - Station evacuations



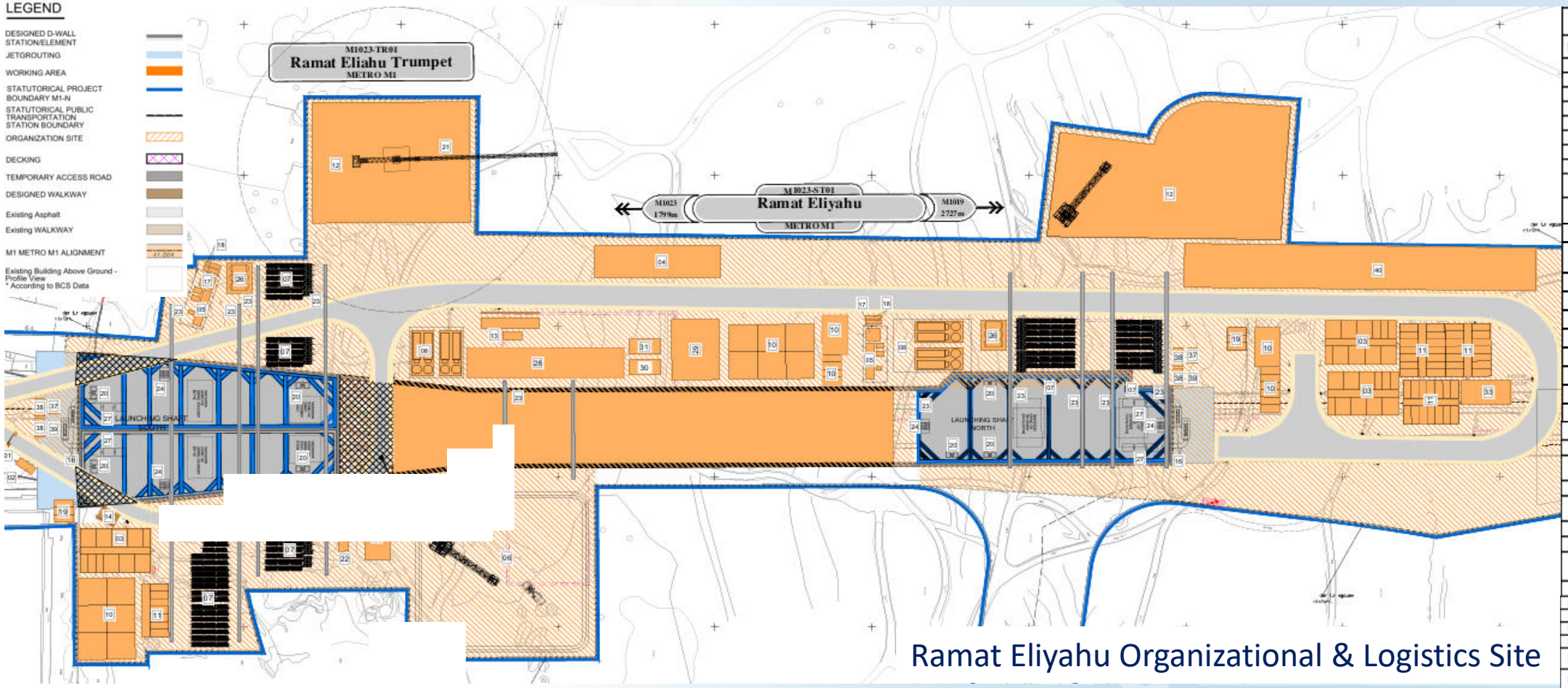
HaRishonim Pocket Track & Cross Over

Main Line Crossover:
Switch 1:9, radius 300 m, velocity in siding 50 km/h.
~ 200[M] length

Metro NTA

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Line M1 - Typical Organizational & Logistics Site



Ramat Eliyahu Organizational & Logistics Site

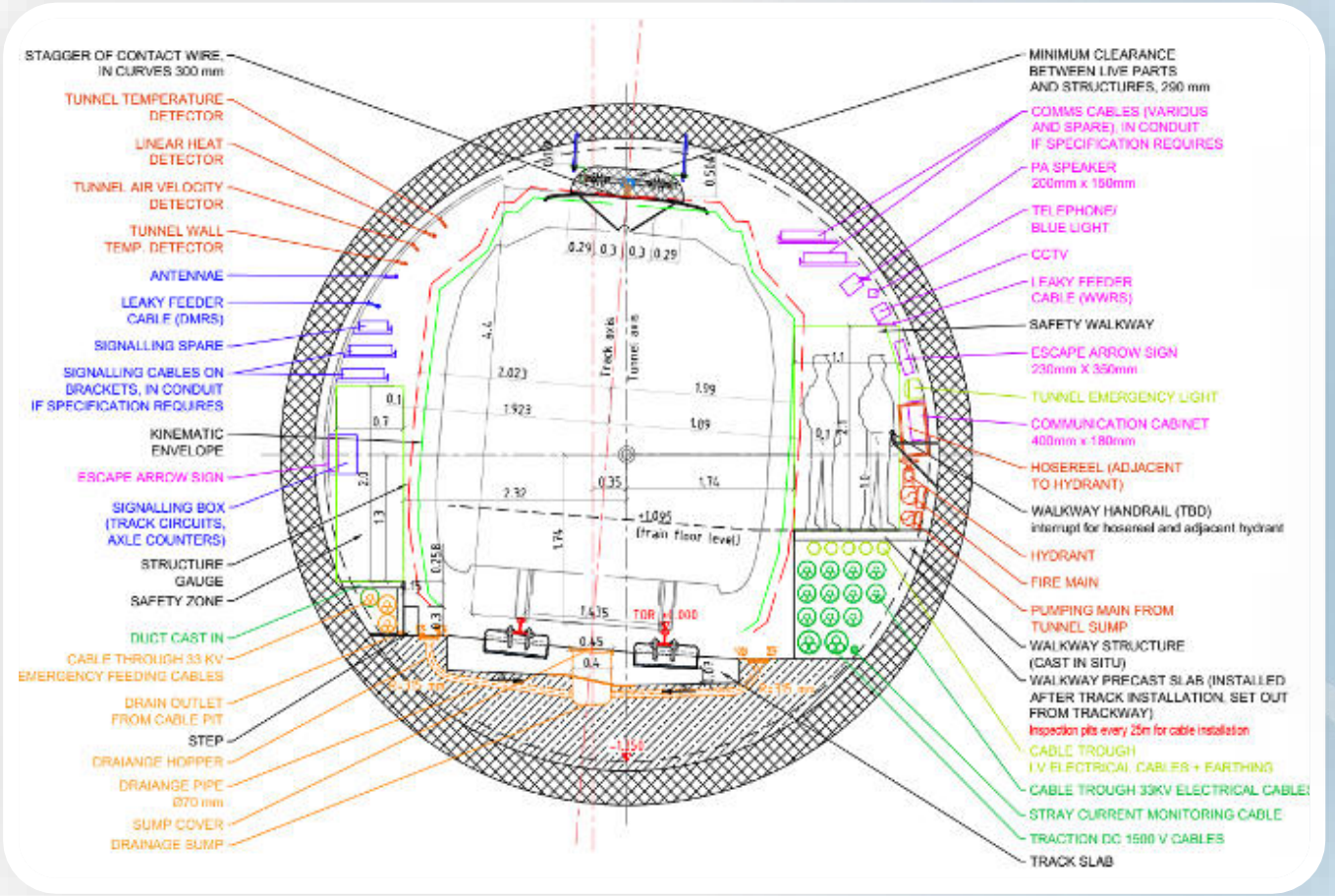
Ramat EliahuStation Site Organization Chart		
No	Site Facility	Remark
1	Gate	
2	Gatekeeper Container	
3	Office Building	2 Storey
4	Car Parking	
5	Power Station	
6	Muck Pit	
7	Segment Storage yard	-
8	Backfill Grout Plant	
9	-	-
10	Workshop Service Area, Equipment, Storage	
11	Sanitary Container	
12	Laydown Area	Not Applicable
13	Weight Bridge	
14	Wheelwash Station	
15	-	-
16	Axial Fan	-
17	Transformer	
18	Generator	
19	First Aid / Medical Lock	
20	Elevator	-
21	Tower Crane	-
22	Fuel tanks	-
23	Gantry Crane	-
24	Stair Tower	-
25	Air Compressor	
26	Water Tank	-
27	Muck skip segment car	-
28	D-Wall Reinforcement Cage Assembly Area	-
29	Slurry Plant	-
30	Decantiling System	-
31	Waste bentonite slurry pit	-
32	Muck drying Bed	-
33	Safe Assembly Area	-
34	Jet Grouting Rig	
35	Jet Grouting Mixing Unit	
36	Bentonite Storage	When non cohesive soils are Encountered
37	Hazardous Wastage Room	
38	Additive Foam +Polymer Tank-1 & Tank-2	
39	Additive Foam +Polymer Feeder Tank	
40	TBM Backup Gantry Setup	

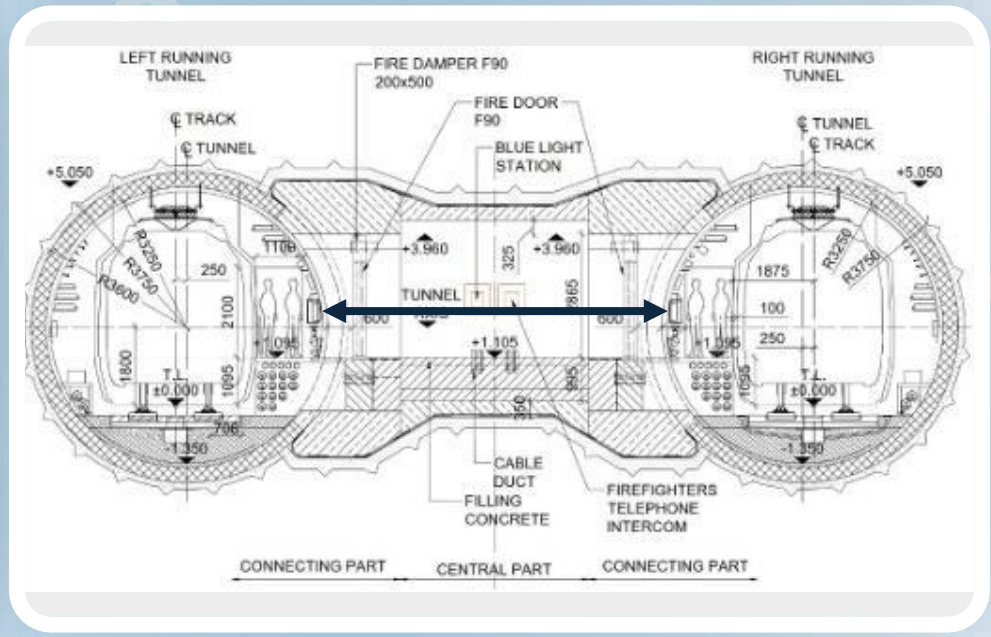
Total Site Area ~ 37,000 [m²] | WP1+2 - 12 logistics sites

Metro NTA

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Line M1 - Tunneling Cross Section + Cross Passages



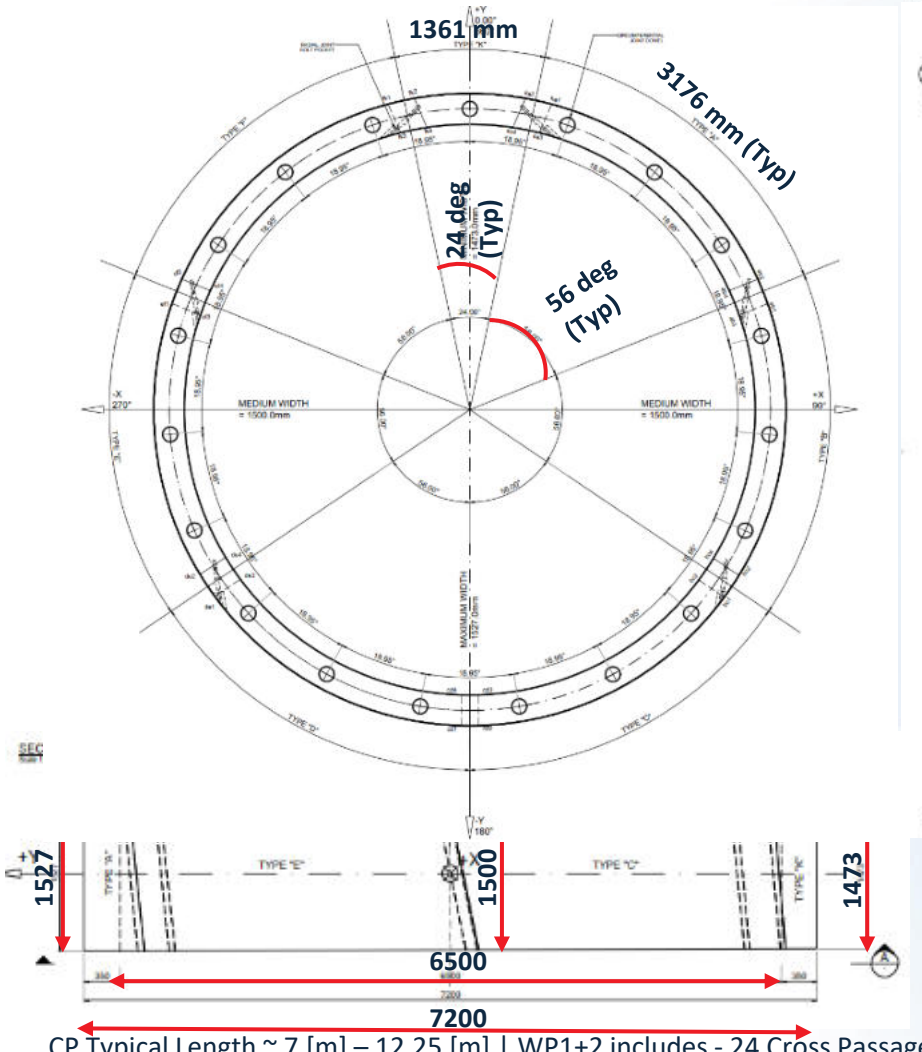


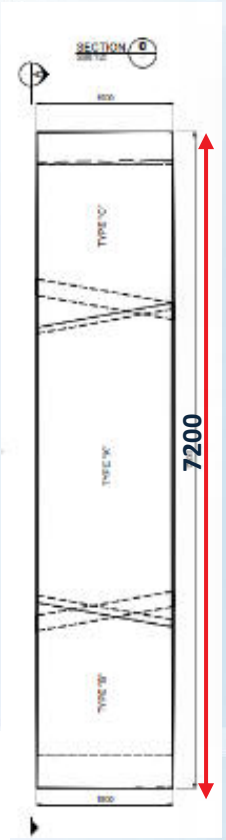
CP Typical Length ~ 7 [m] – 12.25 [m] | WP1+2 includes - 24 Cross Passages | CP (Construction Method) - NATM

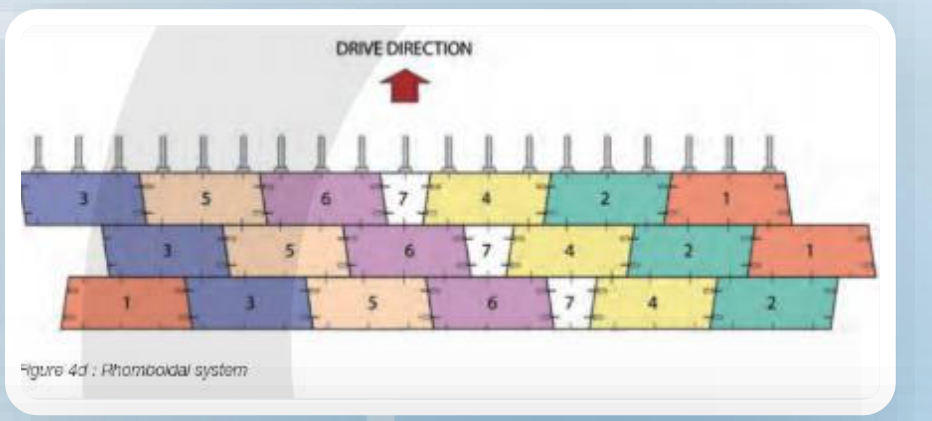
Metro NTA

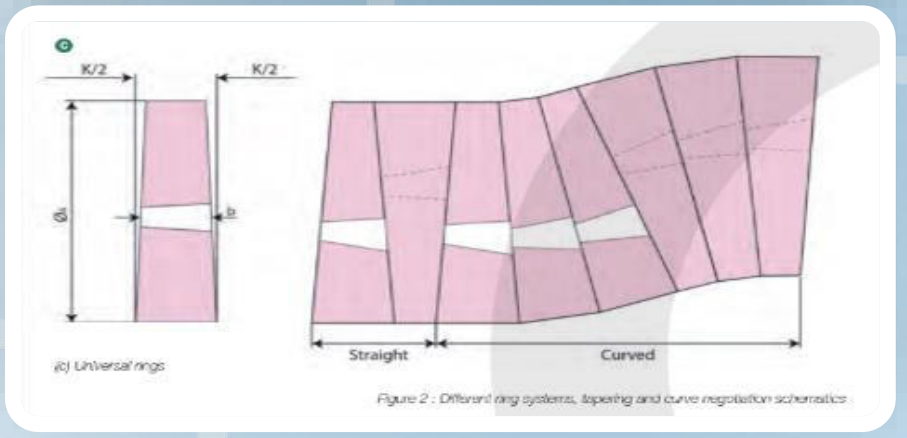
(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Line M1 - General TBM Tunnel Configuration & Geometry









Normal segment 74 kg/m3
Heavy segment 118 kg/m3

CP Typical Length ~ 7 [m] – 12.25 [m] | WP1+2 includes - 24 Cross Passages | CP (Construction Method) - NATM

Universal ring assembly

- 10-12 TBMs
- ~ 168,000 Segments
- ~ 28,000 Rings

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Line M1

HaRishonim Depot



(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

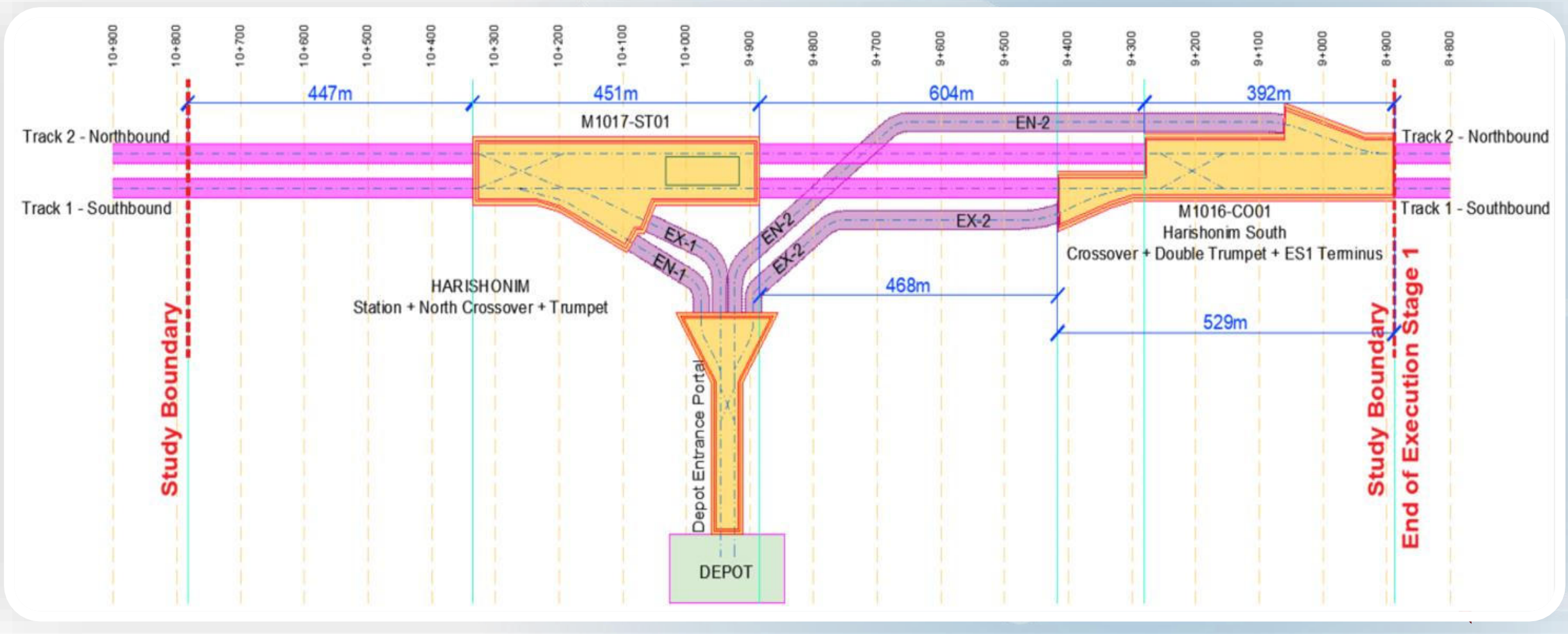
Line M1

HaRishonim Depot

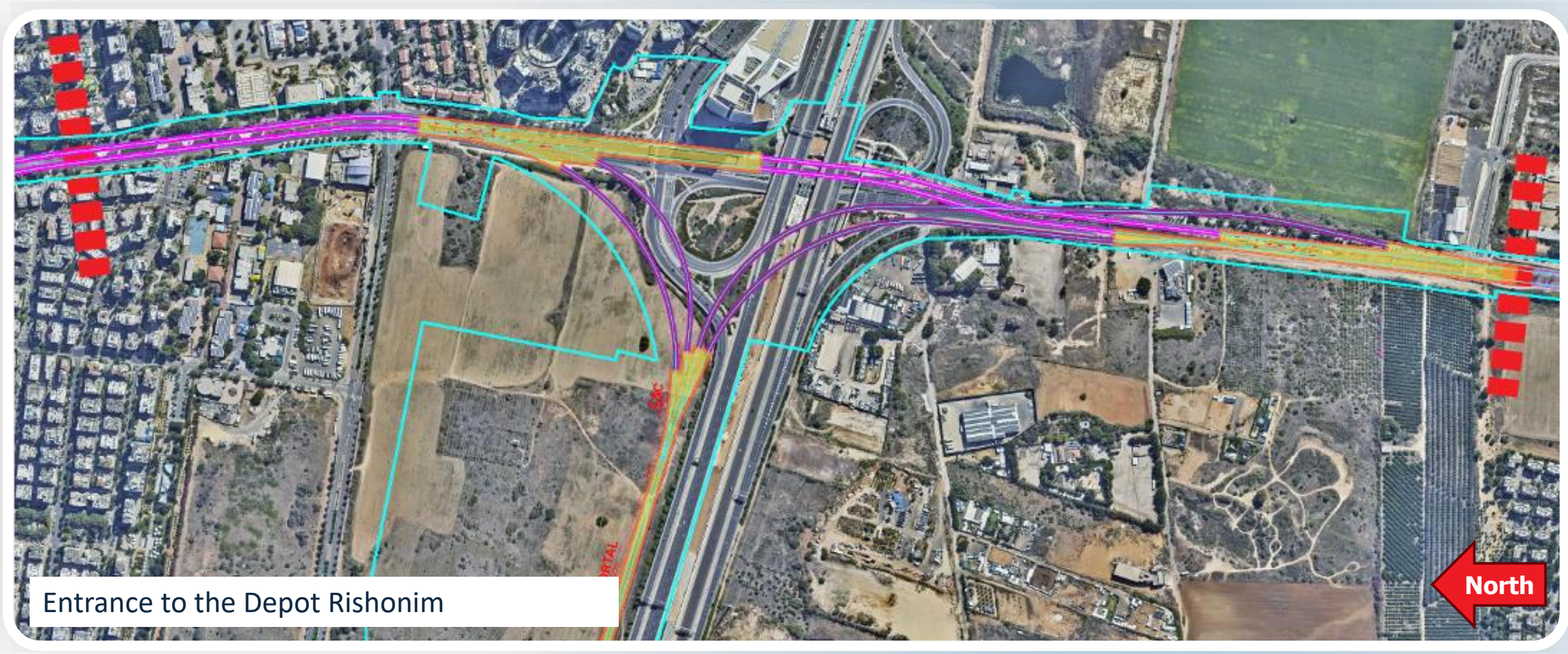


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Line M1


10+900
10+800
10+700
10+600
10+500
10+400
10+300
10+200
10+100
10+000
9+900
9+800
9+700
9+600
9+500
9+400
9+300
9+200
9+100
9+000
8+900
8+800
447m
451m
604m
392m
M1017-ST01
EN-2
Track 2 - Northbound
Track 1 - Southbound
EX-1
EN-1
EN-2
EX-2
EX-2
M1016-CO01
Harishonim South
Crossover + Double Trumpet + ES1 Terminus
HARISHONIM
Station + North Crossover + Trumpet
468m
529m
Study Boundary
Depot Entrance Portal
DEPOT
Study Boundary
End of Execution Stage 1

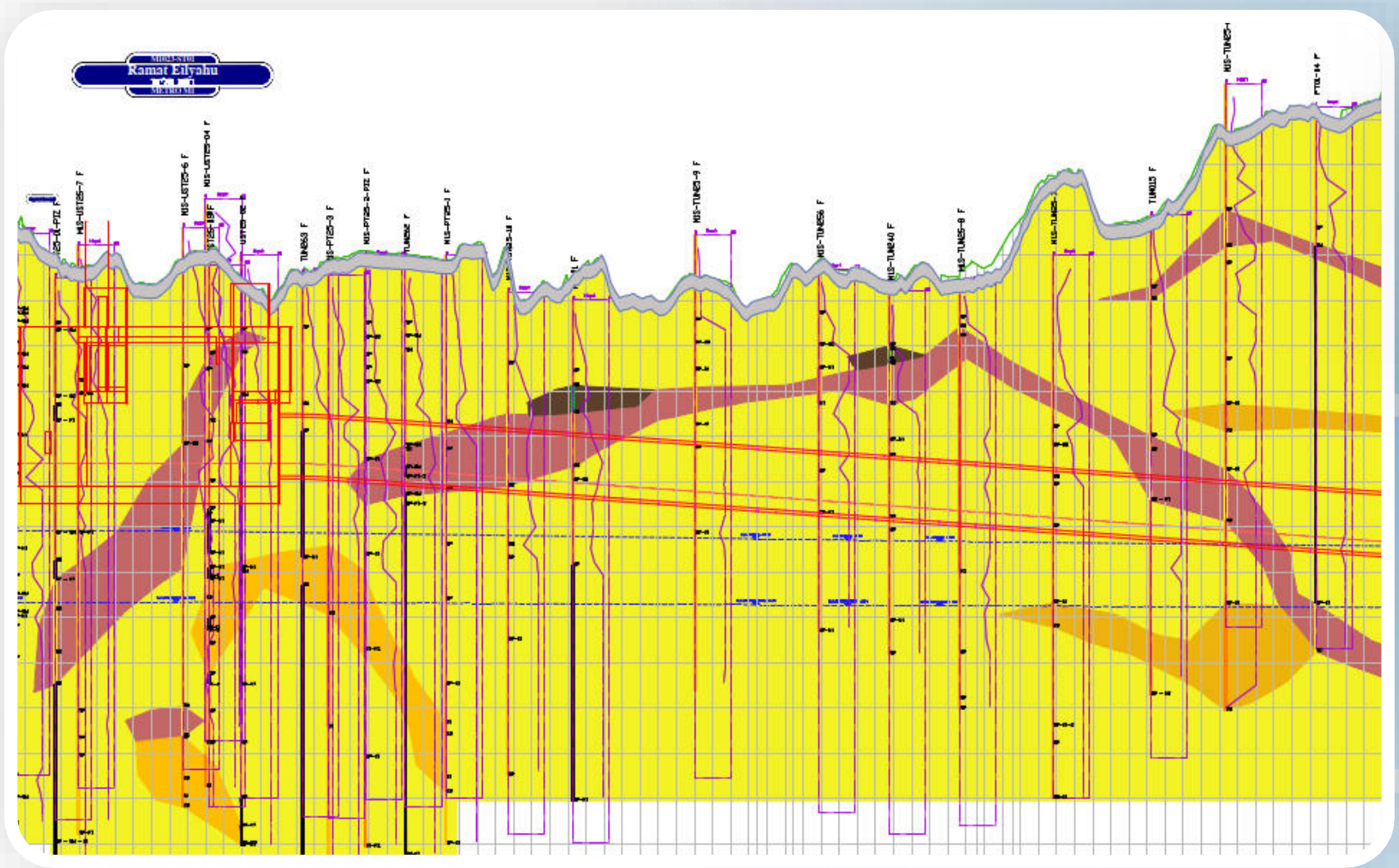
Line M1



Entrance to the Depot Rishonim

Metro NTA

Line M1 - Geotechnical Conditions



Legend

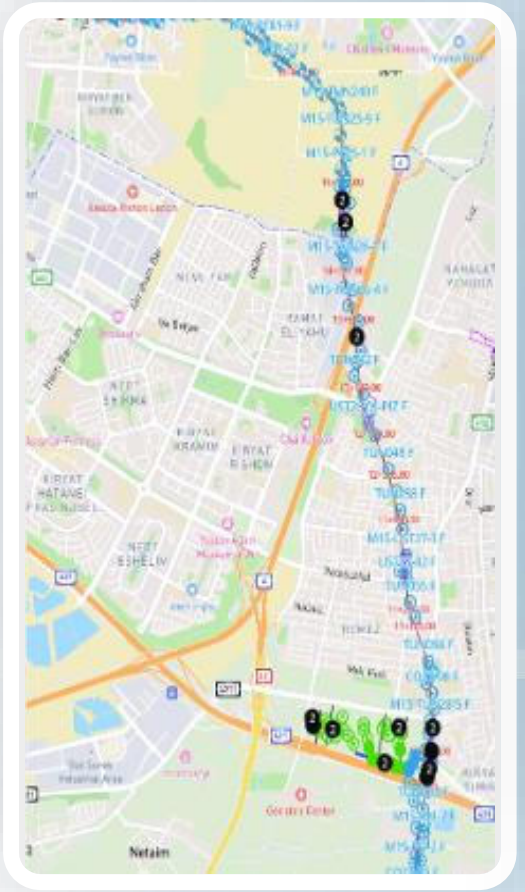
Stratigraphy	Lithology (USGS)	
FILL-TOP SOIL	FILL-TOP SOIL	
CLAY	CH	ML
	CL	
	OH	
	OL	
	PT	
	CL-ML	
HAMRA	SC	SC-K1
	SC-SM	K1-SC
	SM	
	SP-SC	
SAND - LOOSE KURKAR	GP-GM	SP-K1
	SP	SP/SP - k1
	SP-SM	K1
	SP+K1	SC-K1
	K2	SM-SP
KURKAR	K3	
	K4	

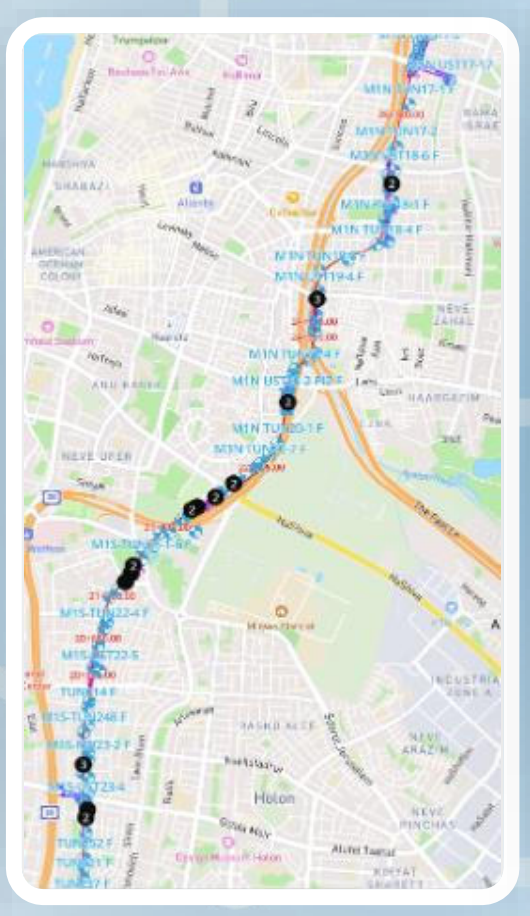
Metro NTA

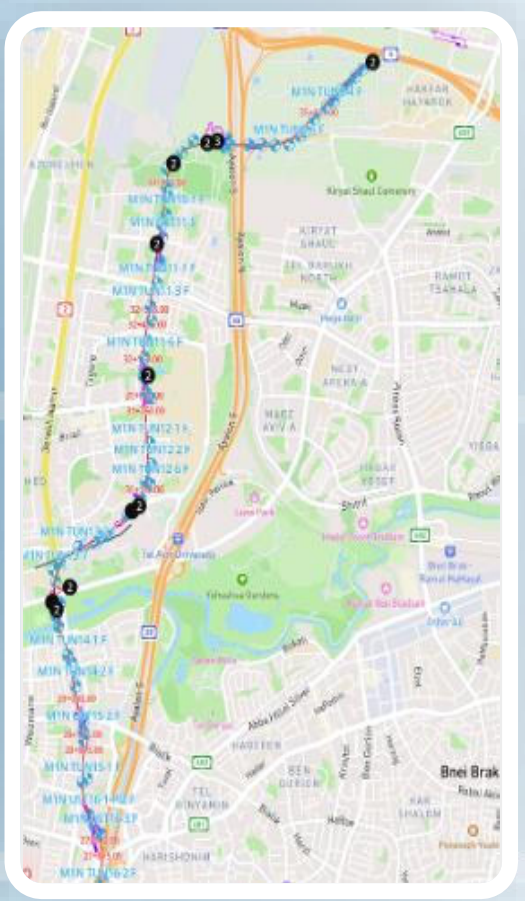
(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Line M1 - Ground Survey - Boreholes status

	No. of Boreholes
Typical Station	3
Typical Tunnel Section (Between Stations)	4







Legend:

Blue: borehole placement and ID

Red: alignment with chainage

Green: Depot boreholes

GI – Boreholes status 11.01.2026

Total of 244 boreholes planned WP1+2, 100% completed

Metro NTA

(*) All inputs shall remain indicative and non-binding, and shall not be interpreted as defining design solutions, construction methods, or risk allocation.

Thank You & Shalom



Metro NTA

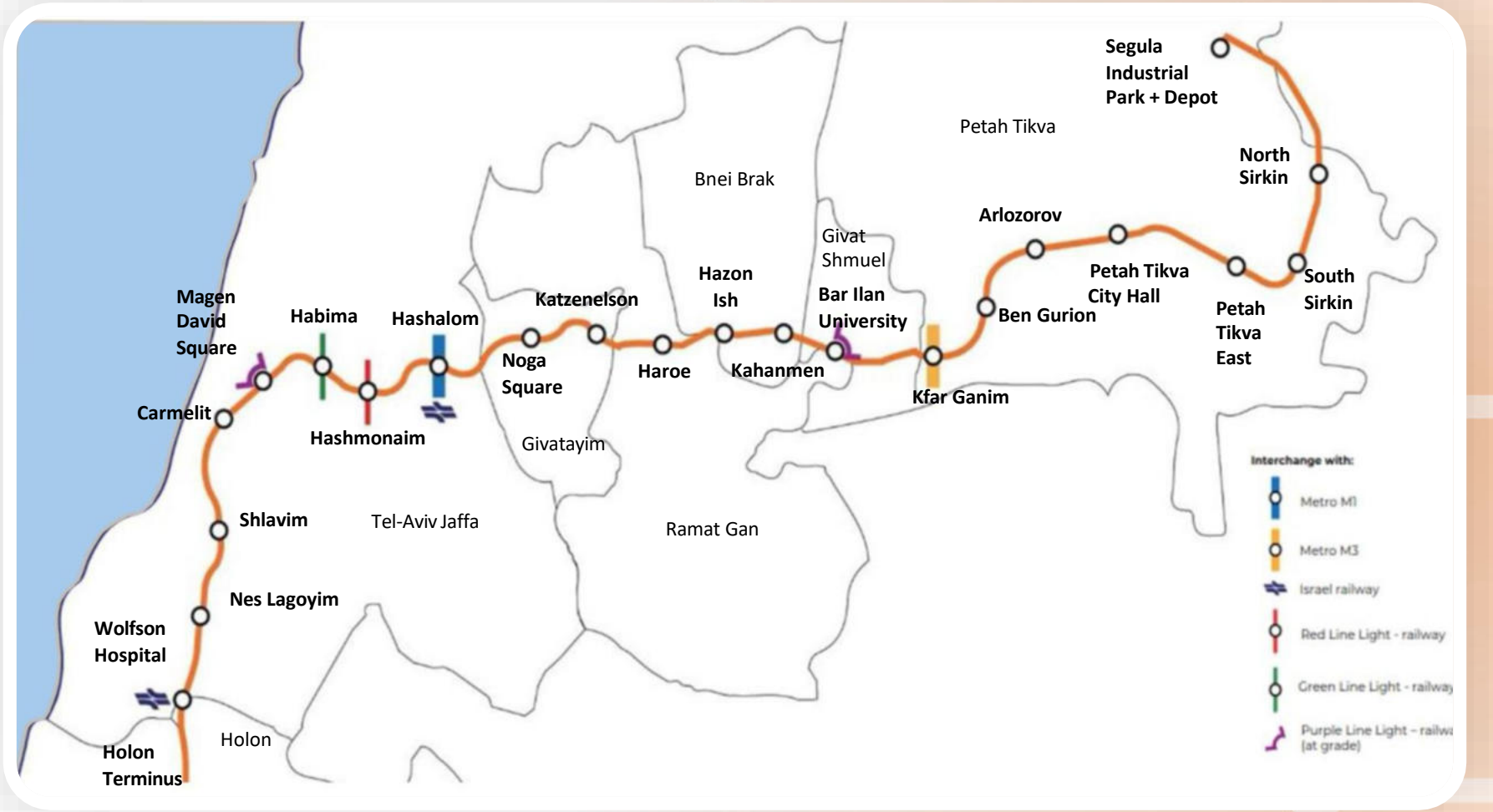
Line M2



Gilad Katz
Procurement and
Contract Manager M2

Metro NTA

Overview



26 Km Length

22 Stations

7 Municipalities

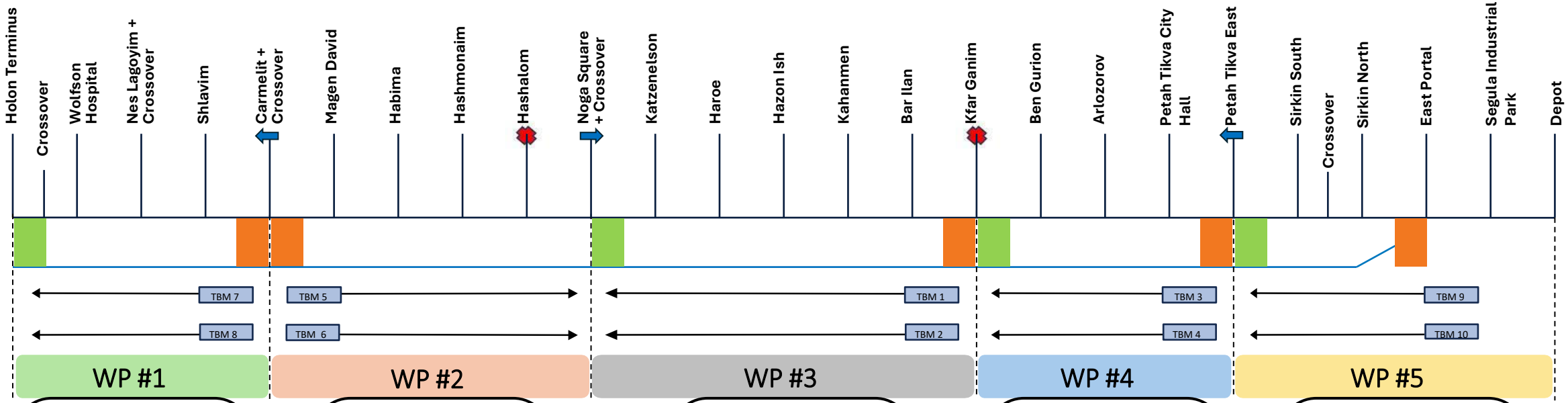
1 Depot

2 Interchange Stations

6 Operational elements

Metro NTA

Infra #1 - Work Package



~4.8km Twin Tunnel
4 x Stations (C&C)
2 x Crossovers (C&C)
1 x Crossover (Mined)
1 x Terminus

~4.5km Twin Tunnel
2 x Stations (C&C)
1 x Station (Hybrid)

~5.1km Twin Tunnel
5 x Stations (Mined)
1 x Crossover (Mined)
1 x Station (C&C)

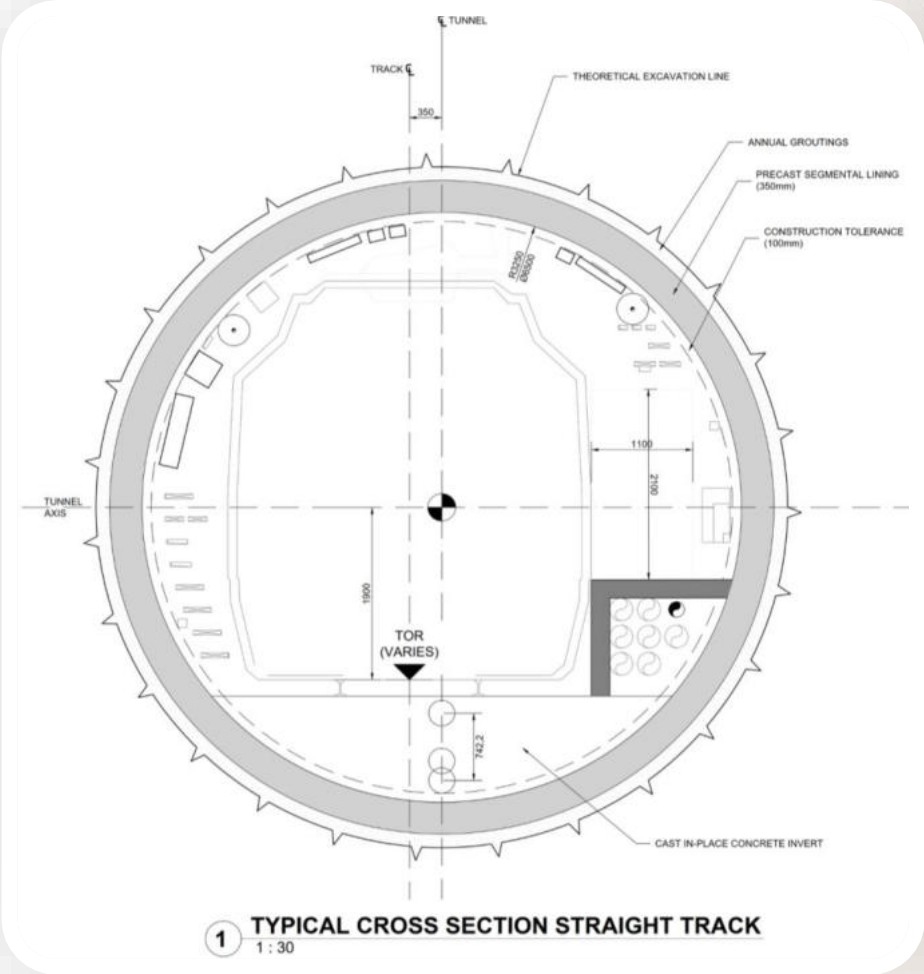
~4.8 km Twin Tunnel
2 x Stations (Mined)
2 x Stations (C&C)

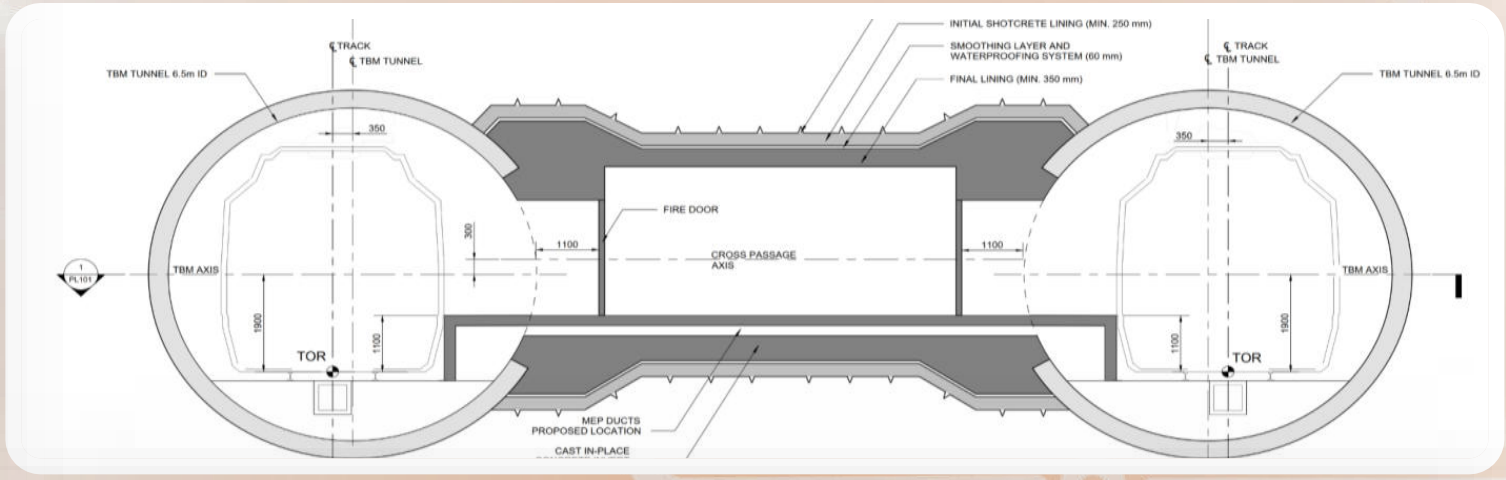
~2.8km Twin Tunnel
~1.3km At Grade
2 Stations (C&C)
1 Stations (At Grade)
1 Crossover (C&C)
Depot Portal + Bridges

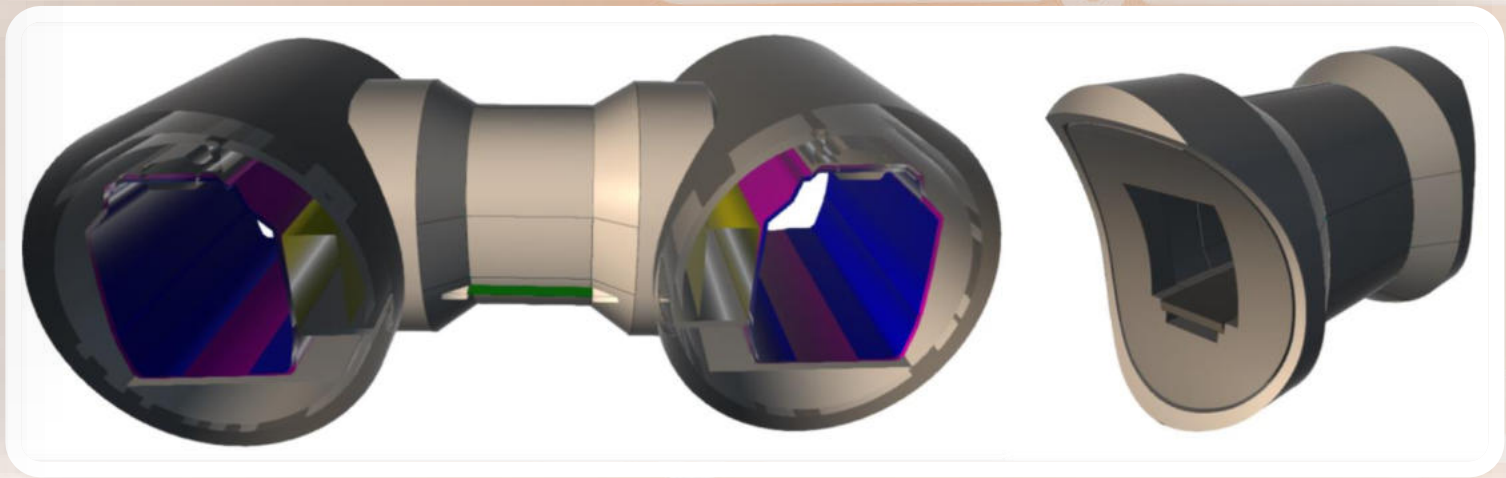
Launch Site
TBM Reception
TBM drive
TBM
Hub (by others)
Assignment WP

Metro NTA

Tunnelling Cross Section + Typical Cross Passage





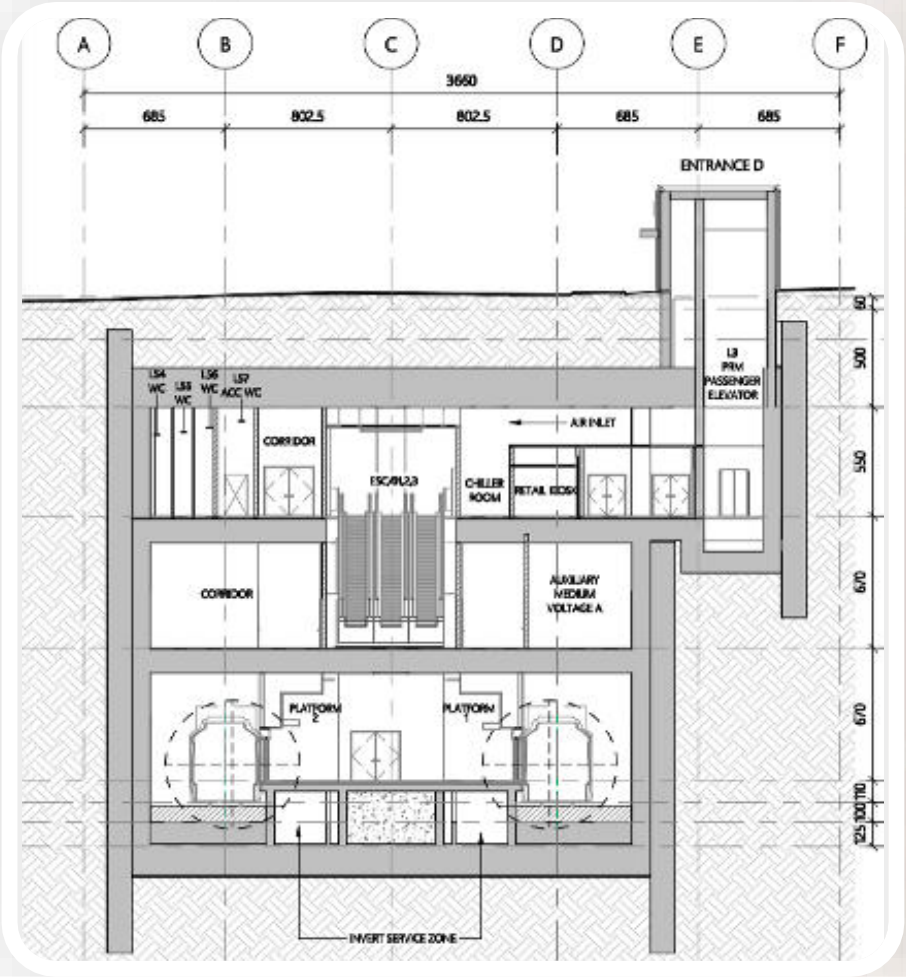


Tunnelling internal diameter = 6.5 m

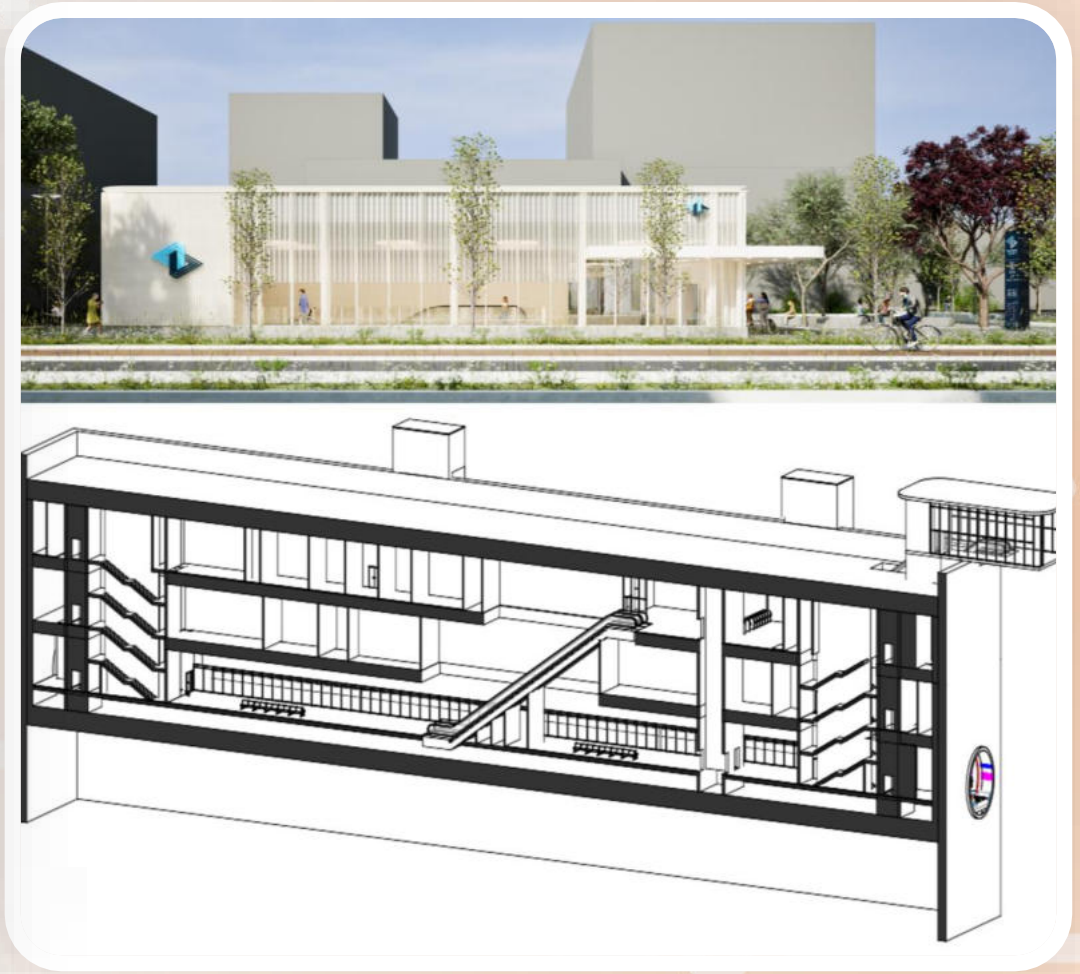
CP Average Length ~ 7 m-12 m | Construction Method – NATM

Metro NTA

Cut & Cover Stations



Typical 3 Level Cut & Cover Station



11 x C&C Stations

9 x 3-Level Stations

2 x 4-Level Stations

Depth: ~25-28m

Length: ~170m

Width: ~23m

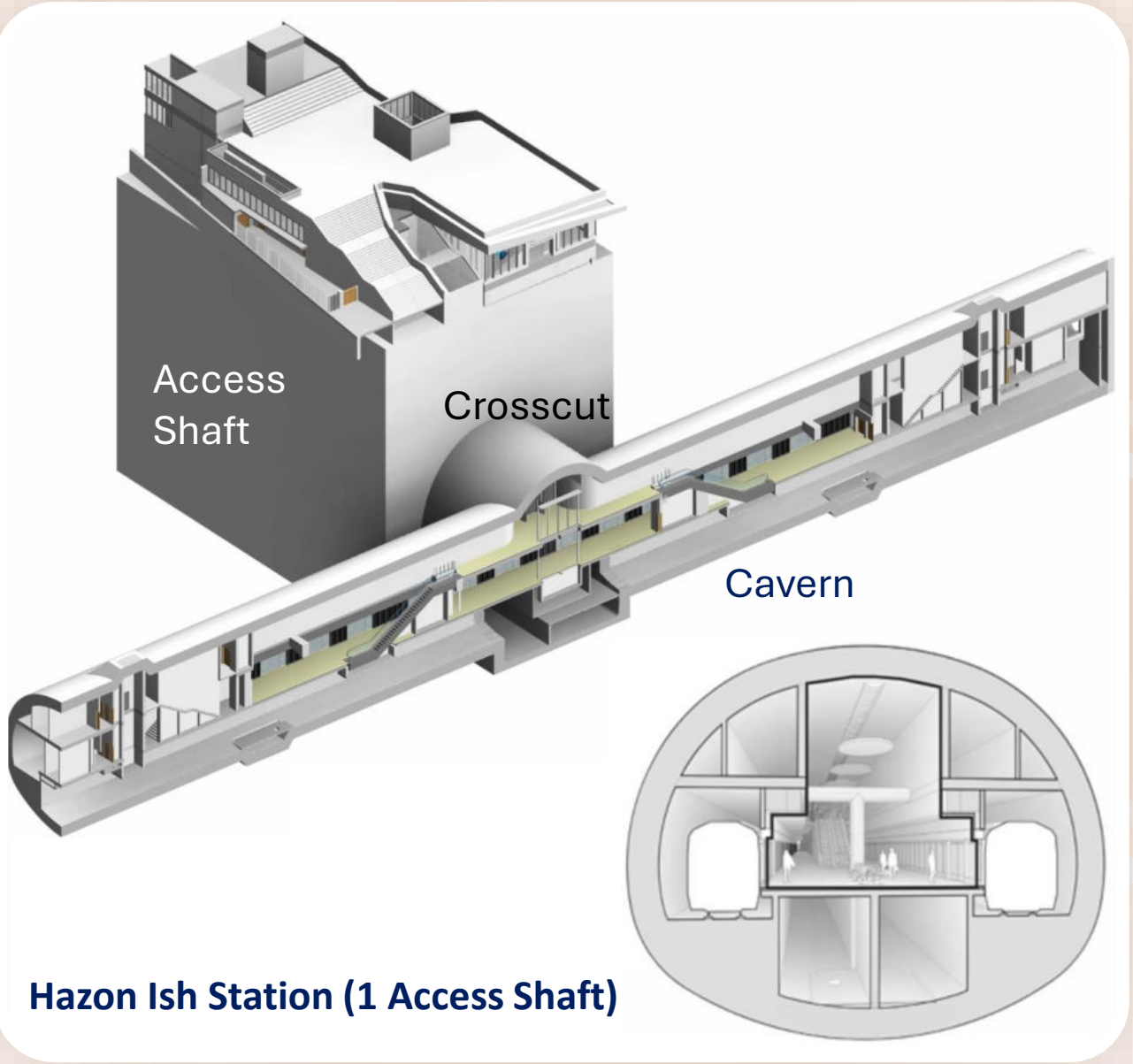
Conventional Tunnelling Stations (Mined / NATM)

Station Caverns:

- 7 x 2 Level Caverns
- 1 x Hybrid (Habima)
- Depth ~40m

Cavern Dimensions:

- Length ~ 140-180m
- Width ~ 23m
- Height ~ 18 m



Hazon Ish Station (1 Access Shaft)

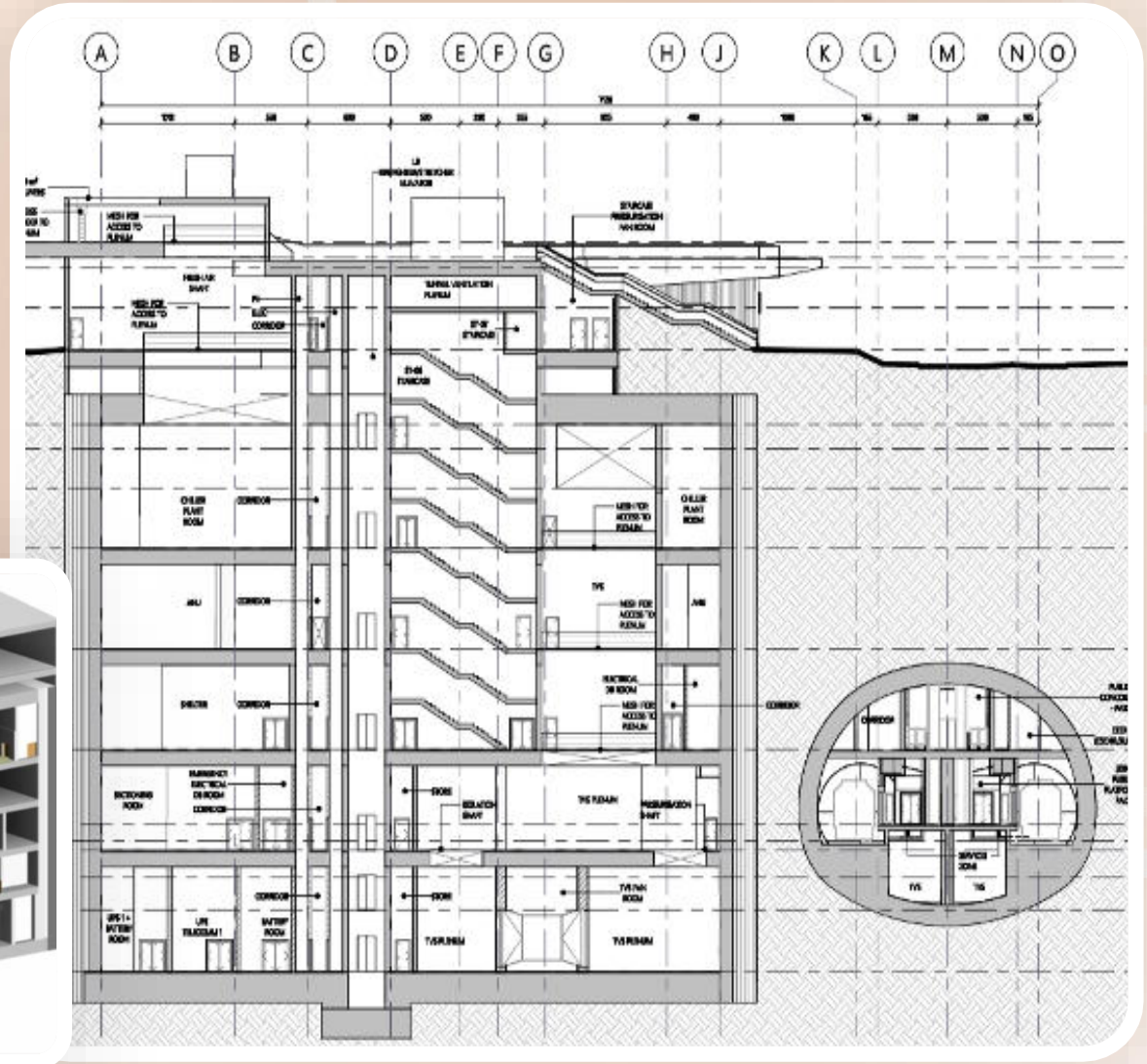
Access Shafts (Conventional Tunnelling Stations)

Access Shafts:

- 2 Stations with Single Access Shafts
- 5 Stations with Double Access Shafts
- 6-7 levels
- Depth: ~40 m

Dimensions:

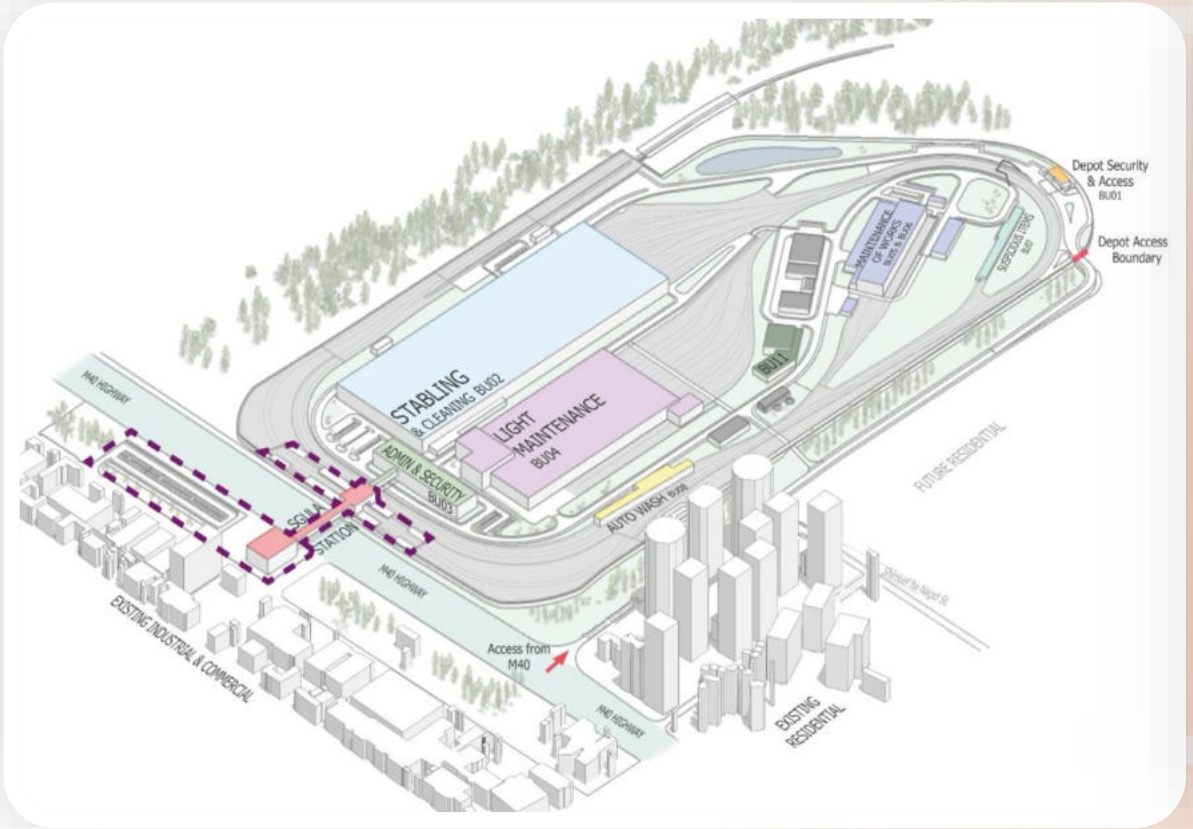
- Vary depending on location
- Typically 40m x 20m

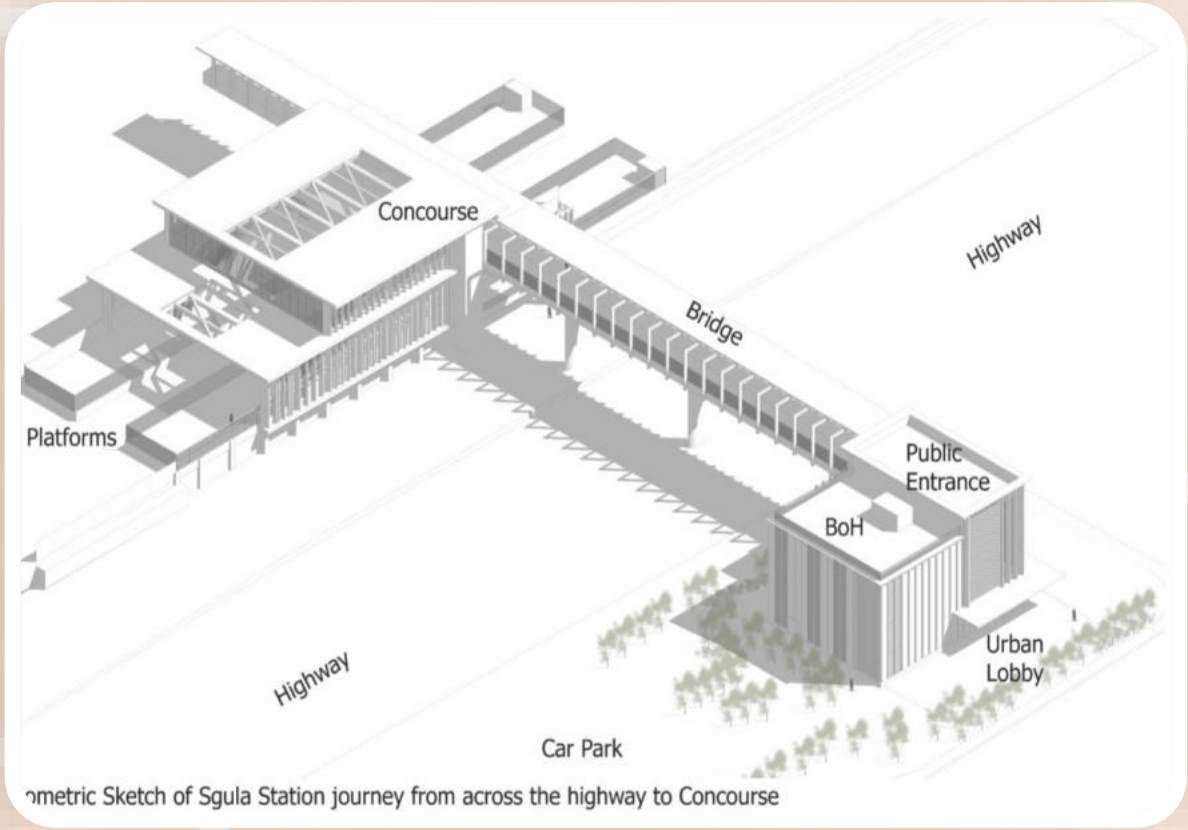




Metro NTA

At Grade Station (Segula Industrial Park)



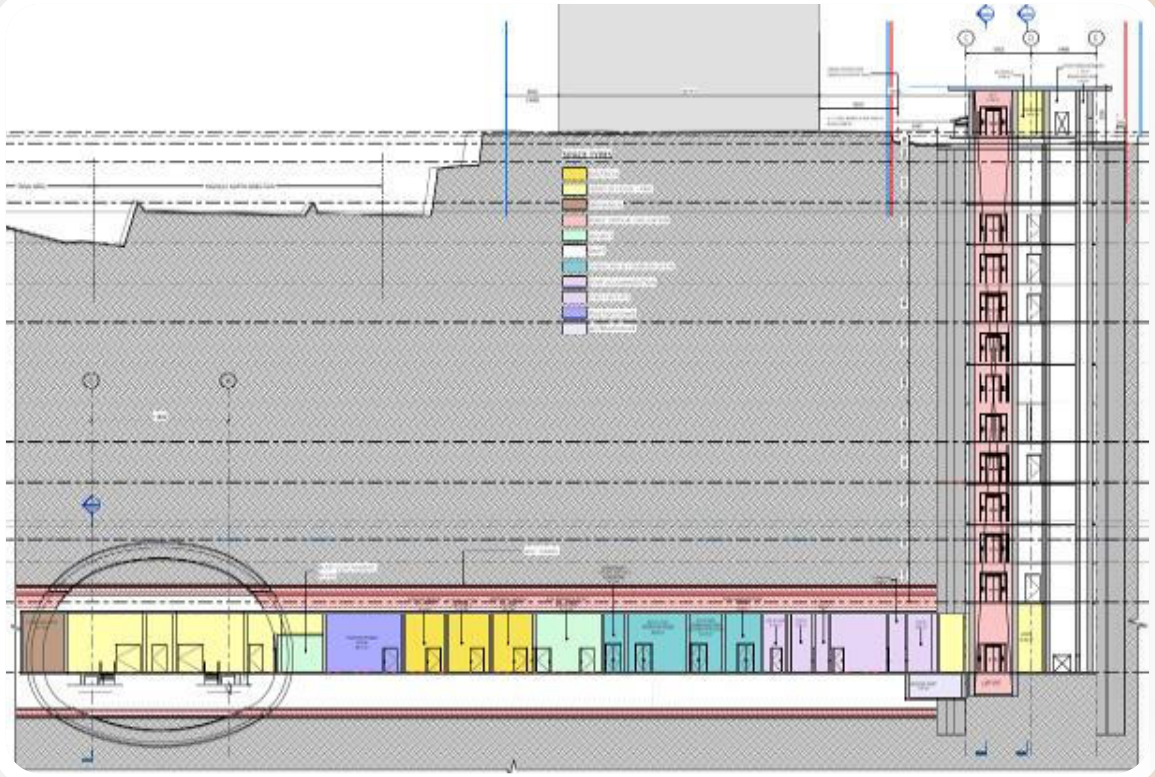


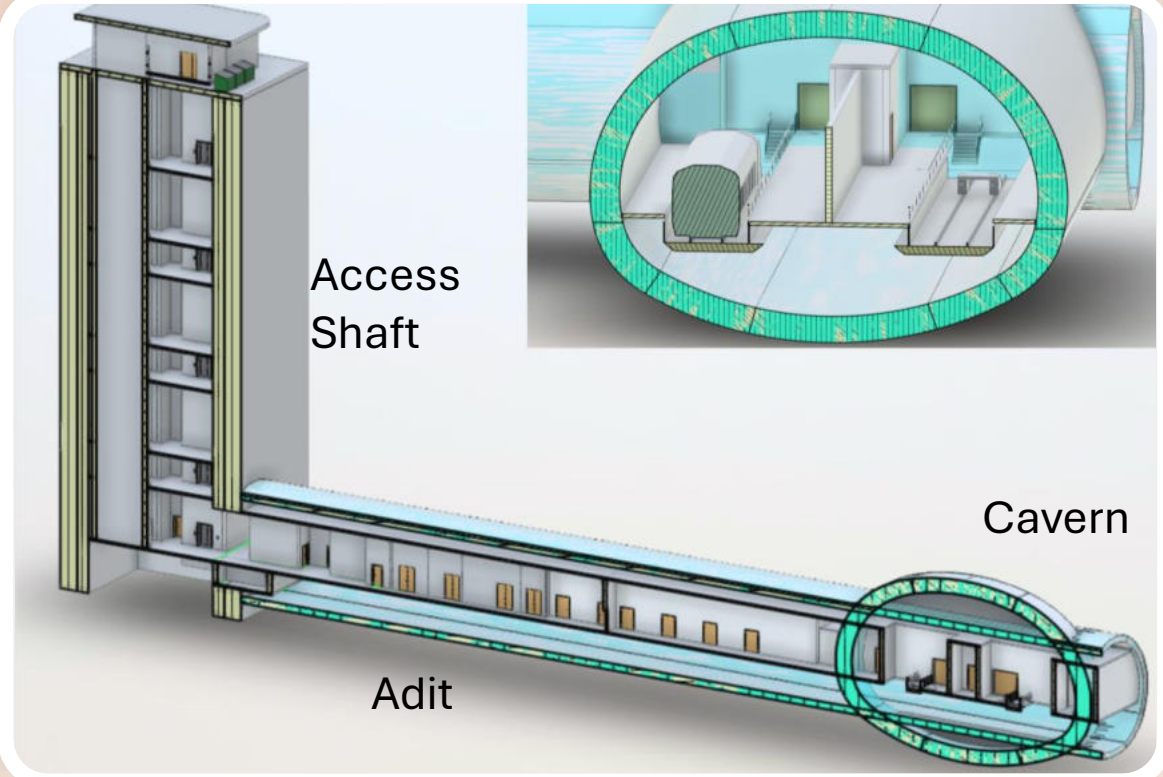
ometric Sketch of Sgula Station journey from across the highway to Concourse

1 x At Grade Station | Pedestrian Bridge

Holon Terminus

- 1 x Access Shaft
- Depth of Shaft: ~50m
- Adit Tunnel: ~80-90m
- Length of Cavern: ~30m
- Height ~ 18 m
- Width of Cavern: ~23m





Metro NTA

Ground Investigation

Boreholes:
280 completed to date (out of 357)

Piezometers:
42 installed to date (out of 71)

Pumping tests:
2 completed to date (out of 18)

Remaining to be completed prior to release of tender

To the extent required, Contractor to complete any additional boreholes / tests for Detailed Design

Guideline frequency of Boreholes per structure

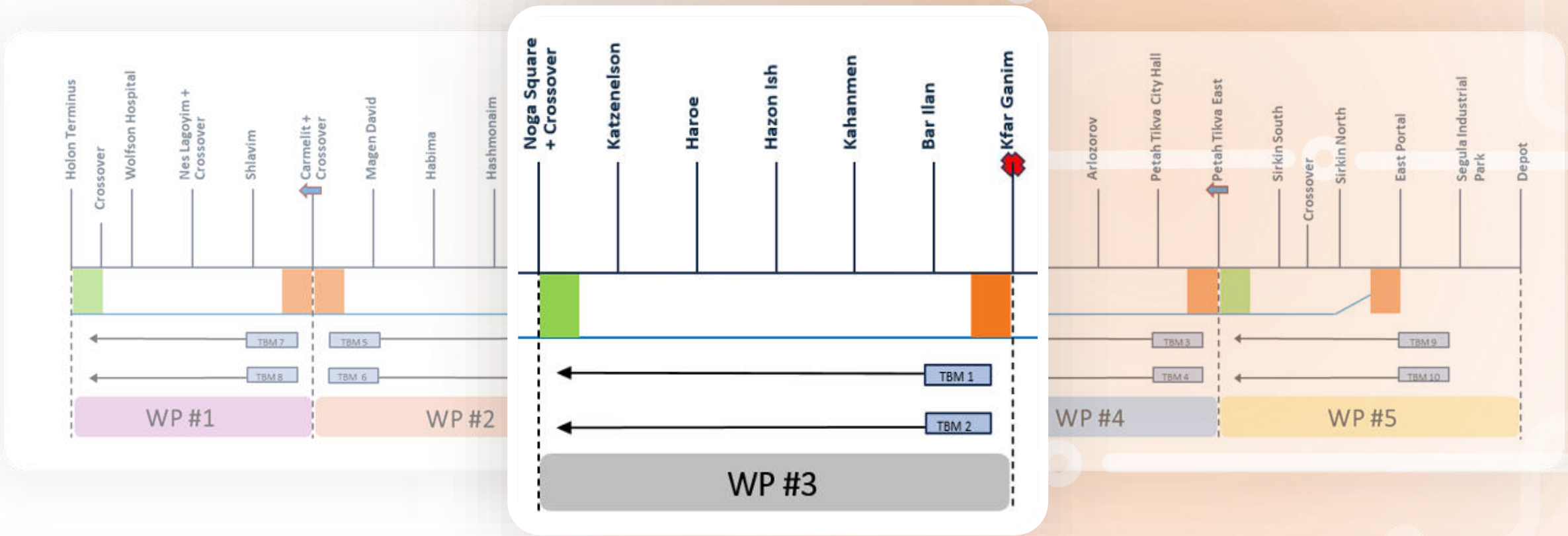
Structure	Quantity
Cut & Cover	3 BH
Mined	5 BH
Cross Passages	1 BH
TBM Tunnel	1 BH per 300 m

Guideline frequency of piezometers per structure

Structure	Quantity
Station / Crossover	1 per submerged element
TBM Tunnel	1 per 1 km in submerged sections

Infra #1 - Work Package #3

- ~5.1km twin tunnels (2 x TBMs)
- 5 x Mined / NATM Stations
- 1 x Mined / NATM Crossover
- 1 x Cut & Cover Station
- Launching Shaft (by others)



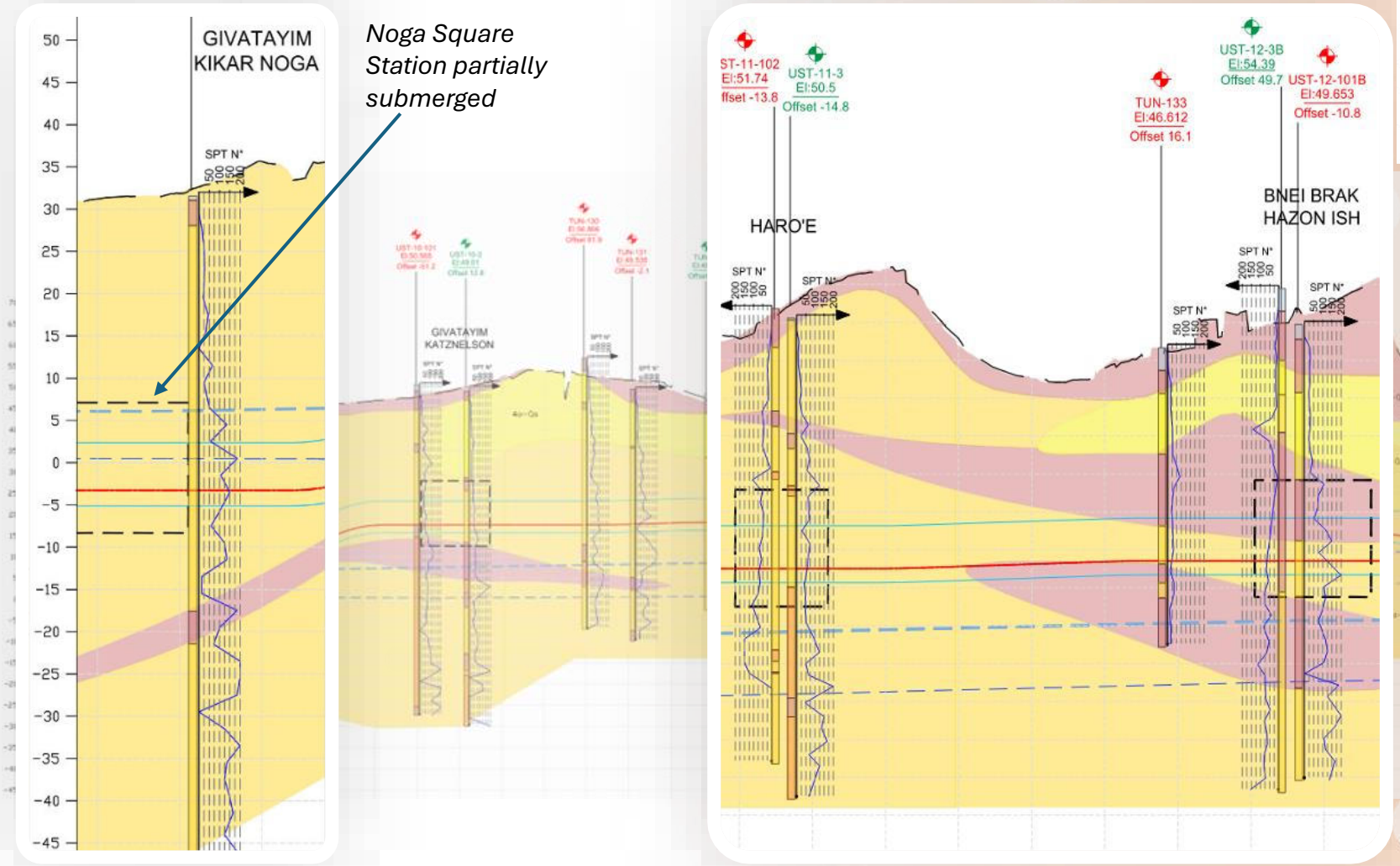
Metro NTA

Work Package #3



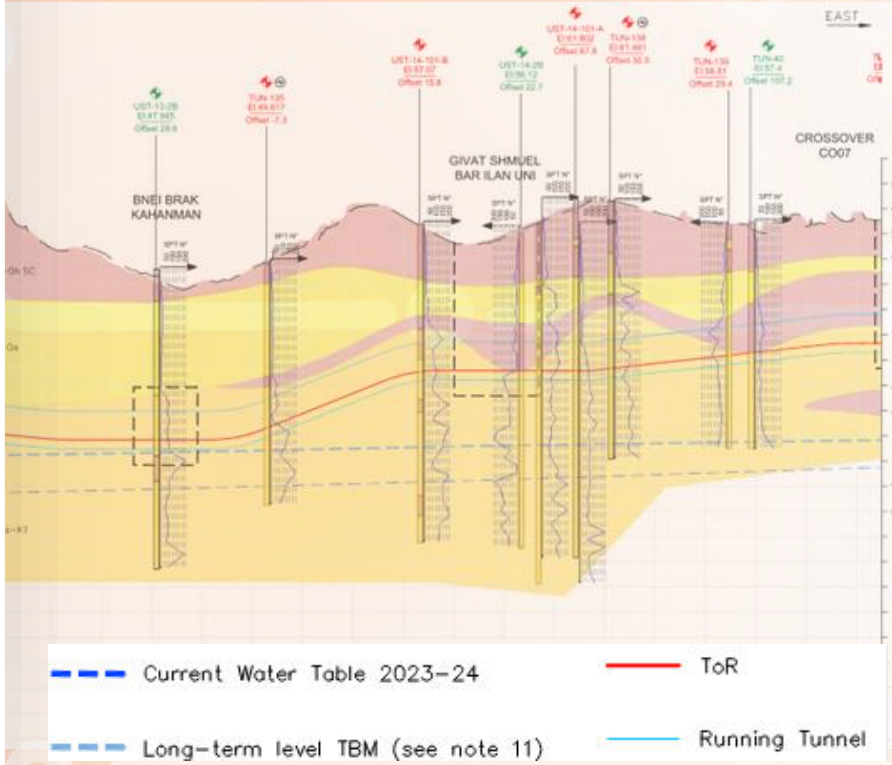
Metro NTA

WP #3 - Geotechnical Conditions



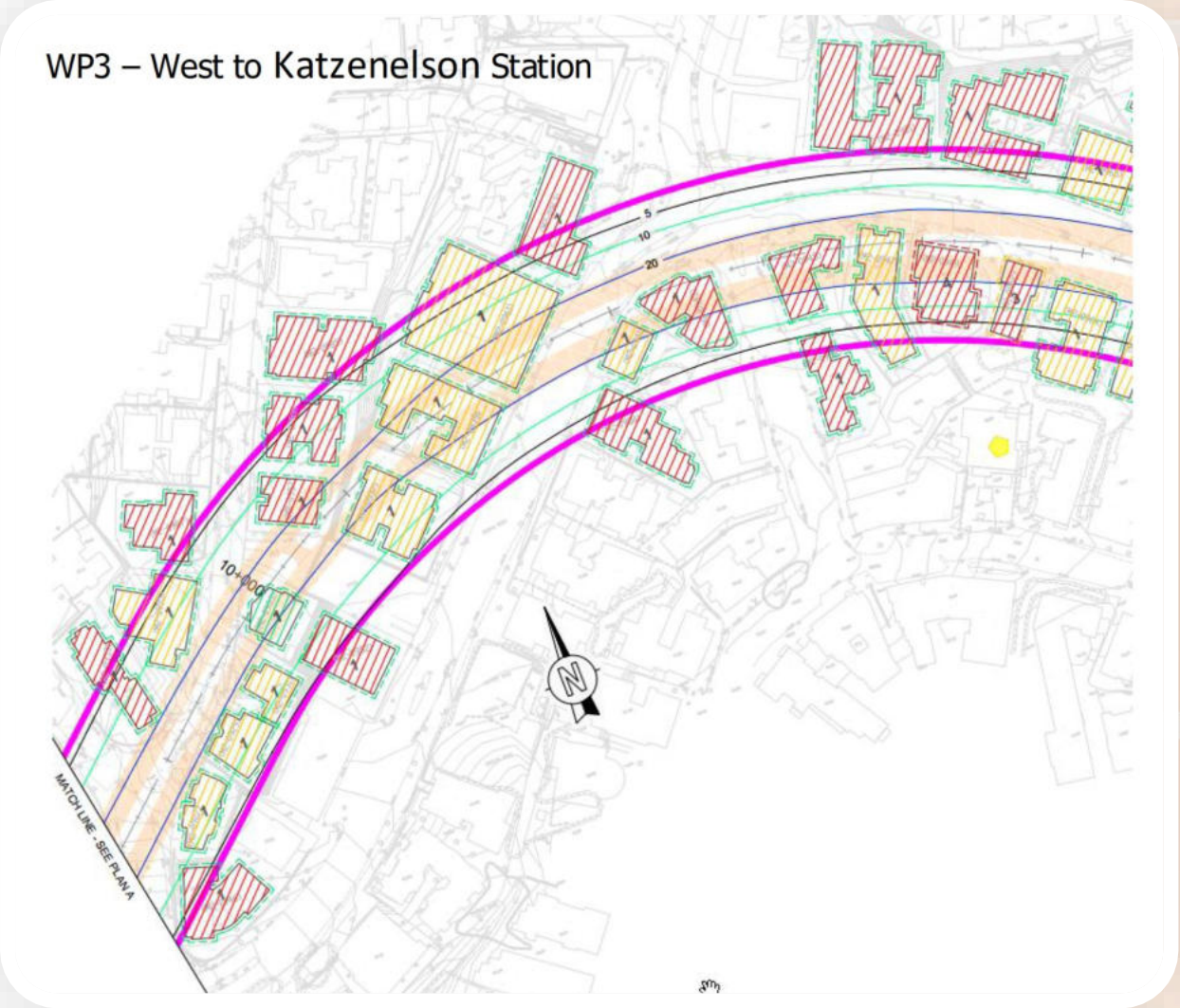
Noga Square Station partially submerged

Geological Classification		Geotechnical Classification – Used in the Profile			
		Geo-Group		USCS / Rock Classification	Description
Hamra / (Qh) Palaeosol		3	a	Predominantly SC to SM-SC with occasional SP-SC	Clayey sand paleosol deposits
			b	Predominantly CL with occasional CL-CH	Silty clay paleosol deposits
Dune Sand (Qs)	Aeolian Deposits	4	a – Qs	Predominantly K1, SP, SP-SM with some SP-SC, SP-K1, CL+SP	Dune Sand – Kurkar K1 (generally uncemented)
K1 (Qk)			a – K1		
K2 (Qk)			b	Predominantly K2 and K3 with some K2-K3, SP-K3 and K2+SC	Kurkar K2 – Kurkar K3 (generally moderately cemented)
K3 (Qk)					
K4 (Qk)			c	Predominantly K4	Kurkar K4 (generally well cemented)



- Predominately 3a-Qh SC (Hamra), 4a-K1 (Kurkar) and 4a-Qs (Dune Sand)
- Majority of Work Package above ground water table

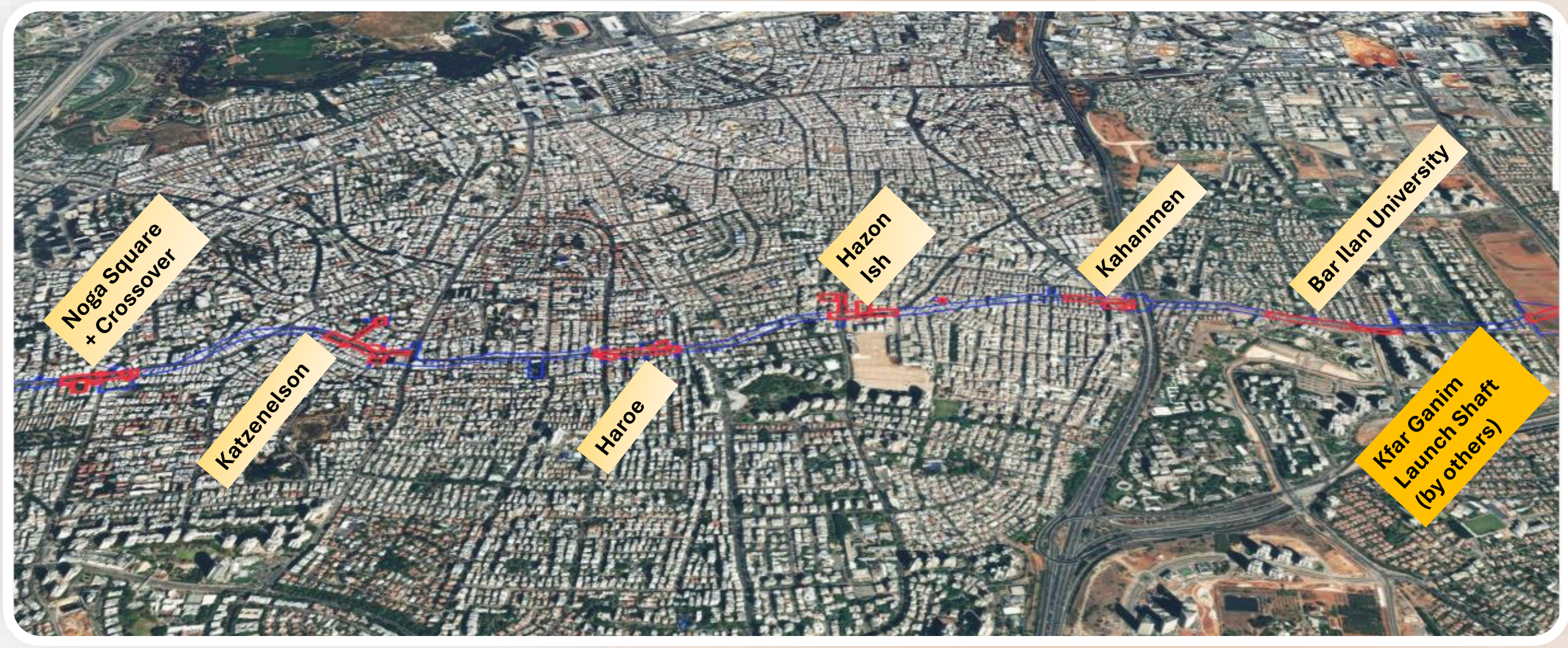
WP #3 - Building Conditions Survey (BCS)



Work Package # 3	No. of Buildings	Status
Tunnels	300	Work in Progress
Bar Ilan	24	Work in Progress
Katzenelson	72	Work in Progress
Haroe	82	Work in Progress
Crossover	57	Complete
Noga Square	54	Complete
Kahanmen	24	Complete
Hazon Ish	28	Complete

Metro NTA

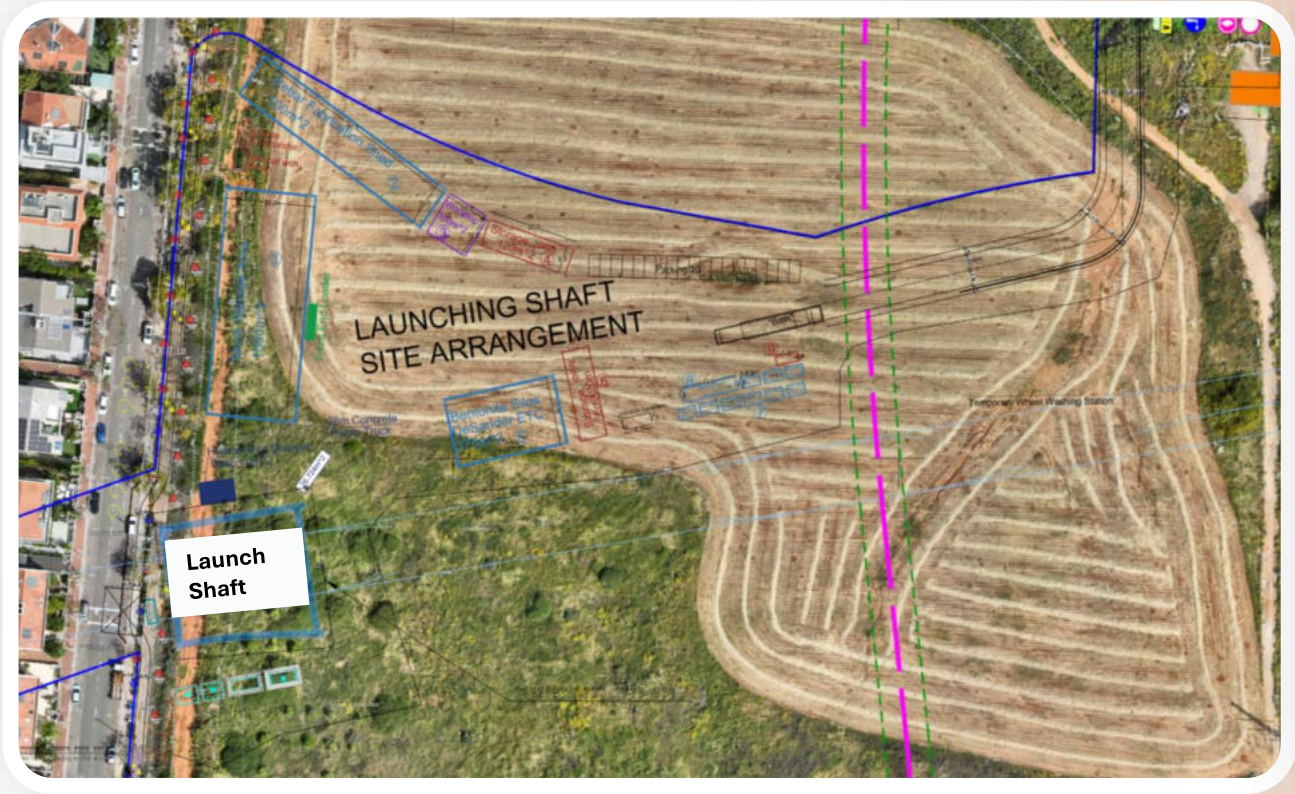
Work Package #3

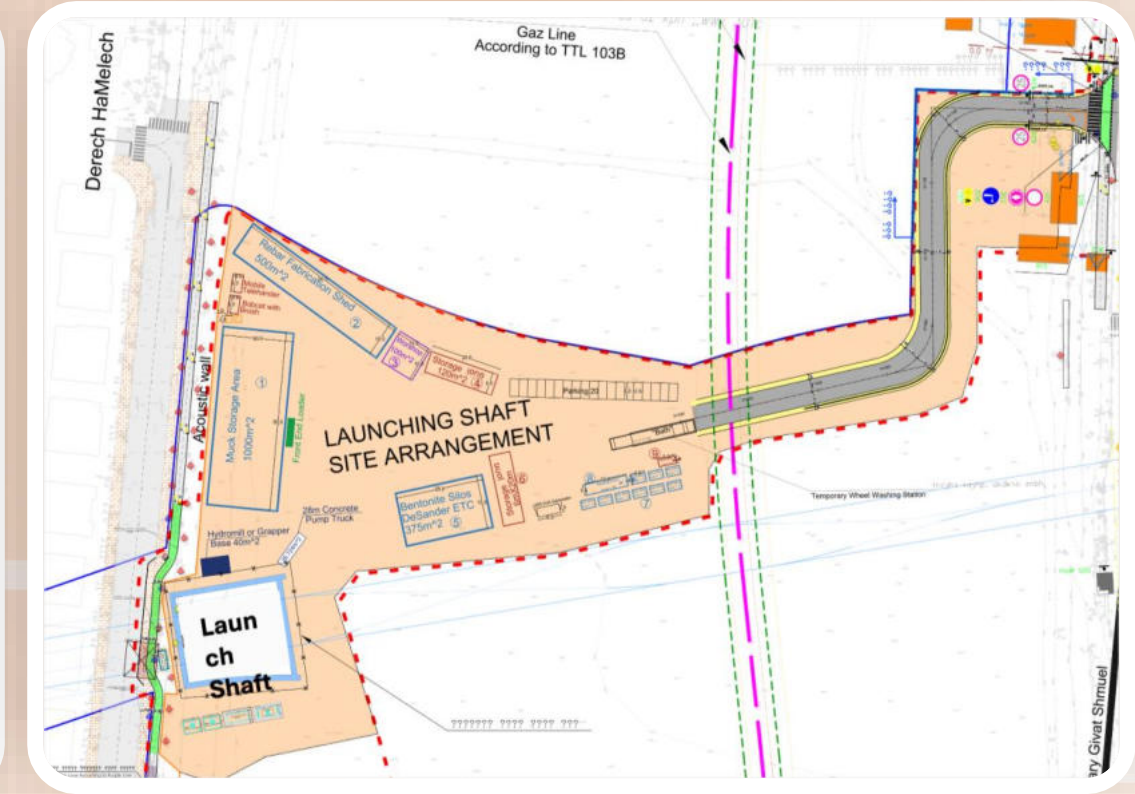


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WP #3 - Kfar Ganim Mobilisation Site

- Site ~18,000 m^2
- Launching Shaft (by Advanced Works)





Work Package #3



Metro NTA

WP #3 - Bar Ilan Station

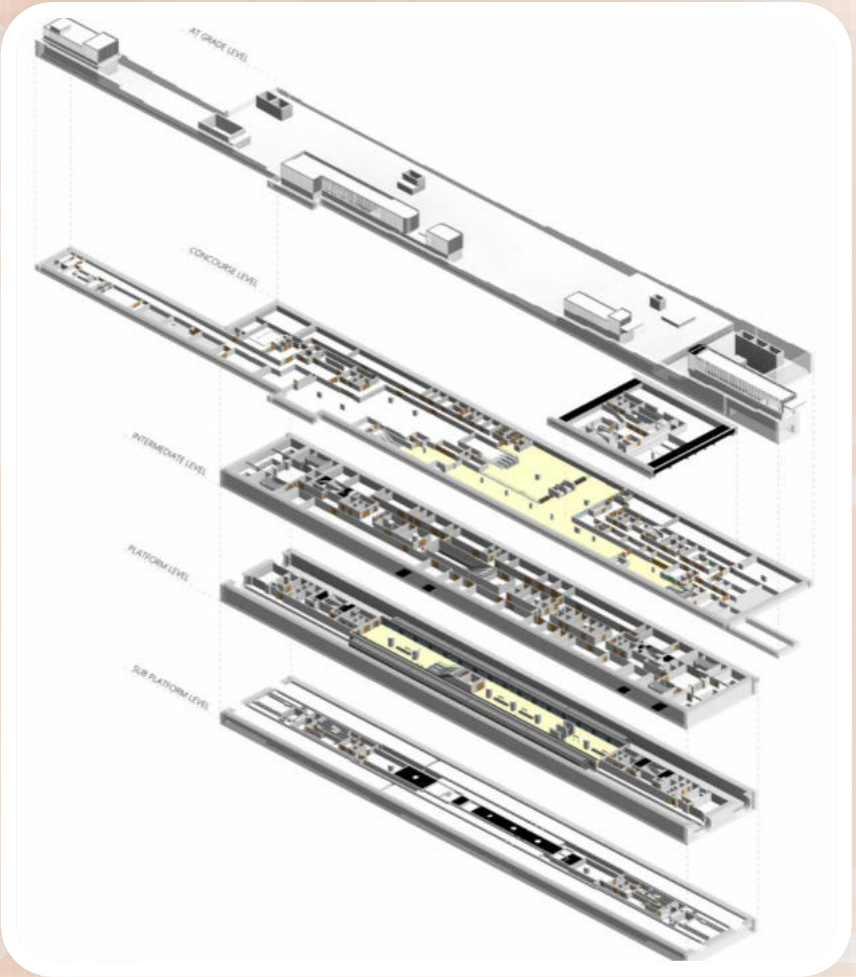
- Cut & Cover Station
- 3 Level Station Shafts
- ~25 m Depth
- ~180m Length
- 2 Entrances



WP #3 - Bar Ilan Station

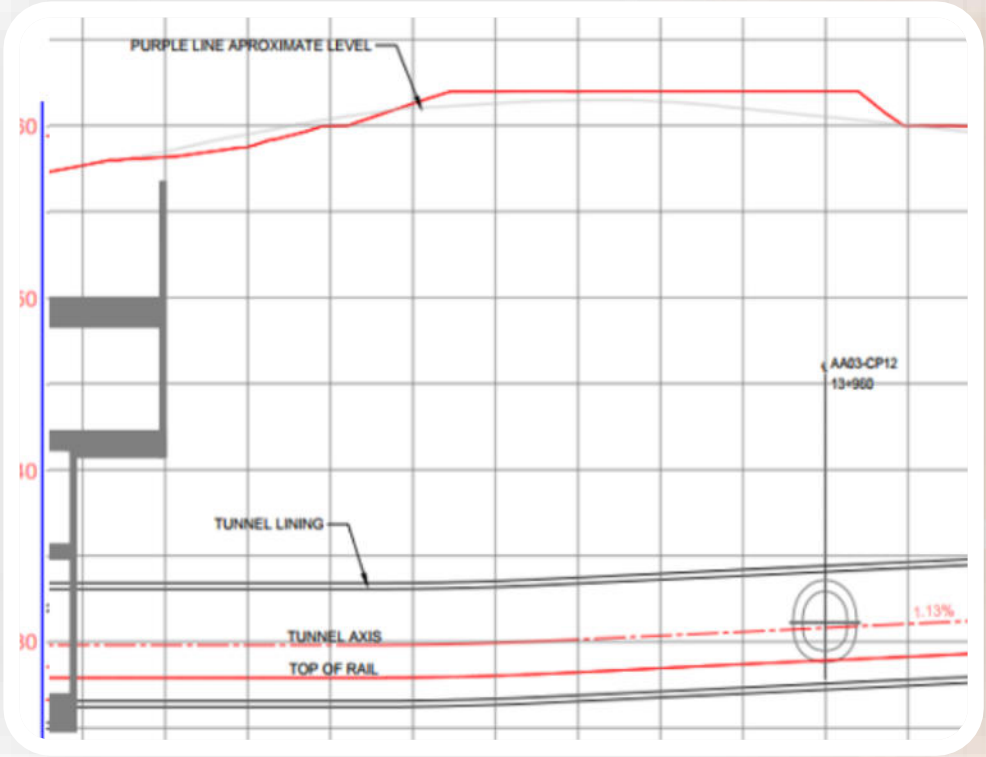






WP #3 - Assets and Structures

- M2 tunnels pass ~23m below At-Grade rail tracks of purple line.
- Nearest station Bar Ilan





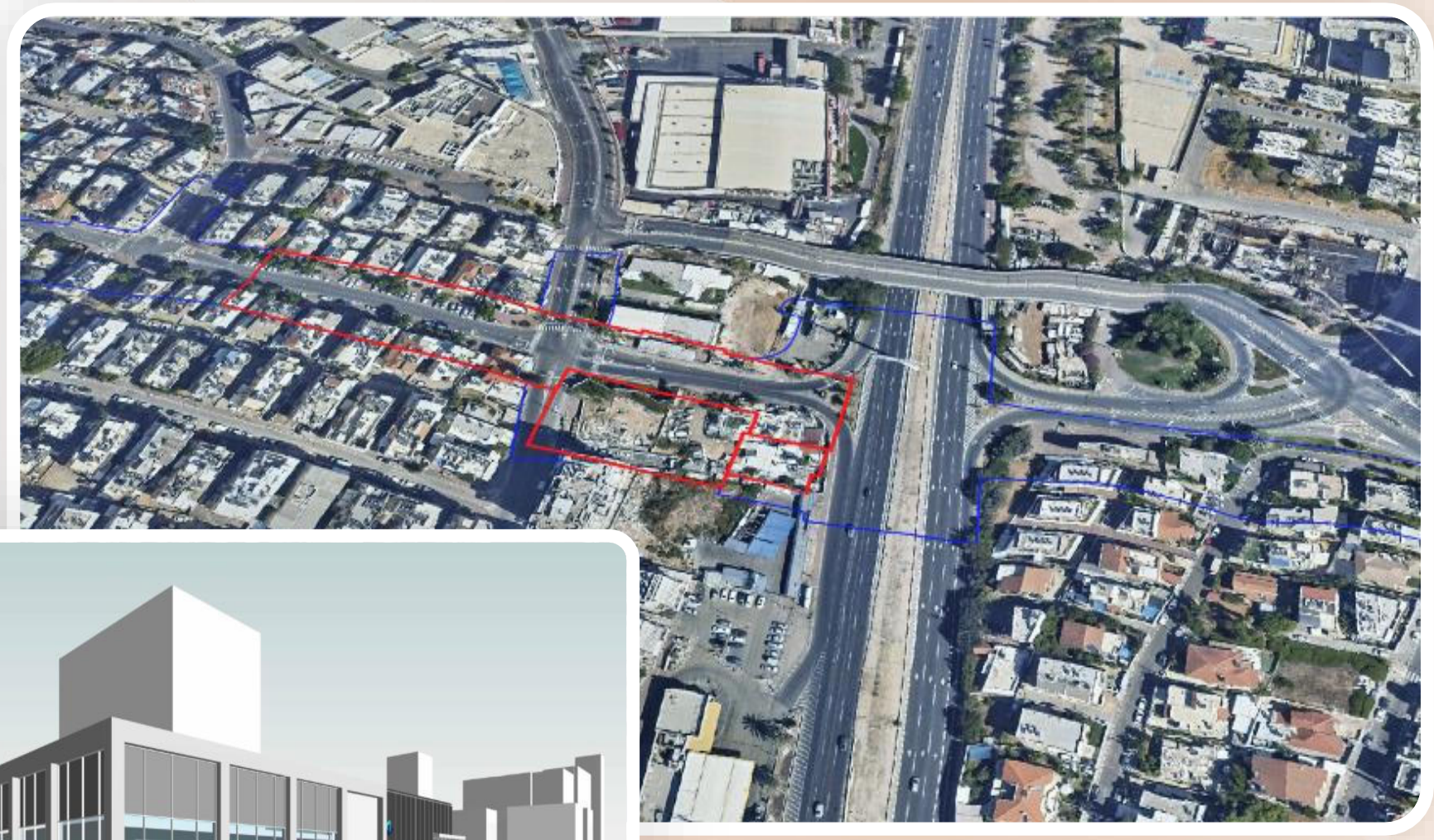
Work Package #3



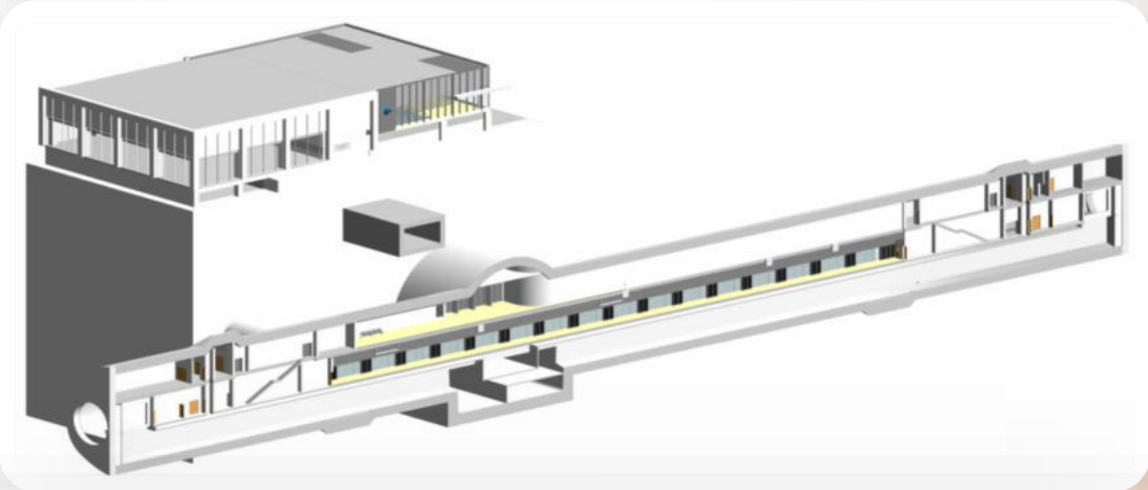
Metro NTA

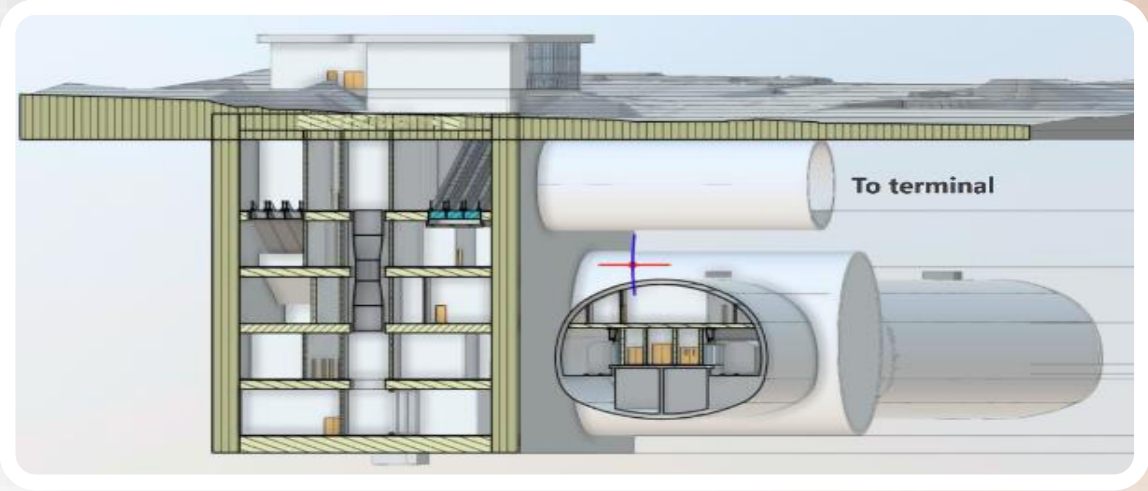
WP #3 - Kahanmen Station

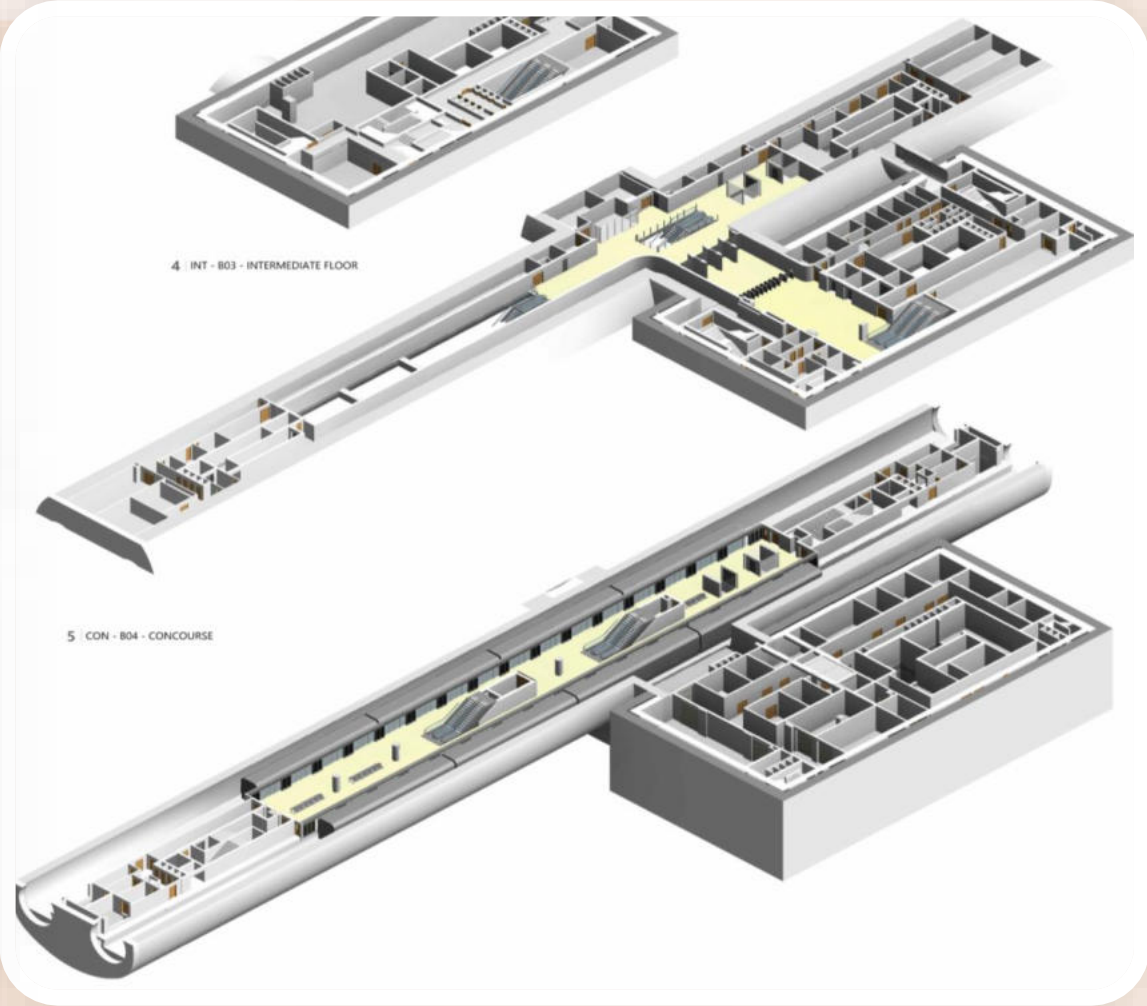
- Mined / NATM Station
- 1 Access Shaft
- 1 Entrance
- Shaft: ~44 m Depth
- Cavern: ~38 m Depth
- Cavern: ~140m Length



WP #3 - Kahanmen Station

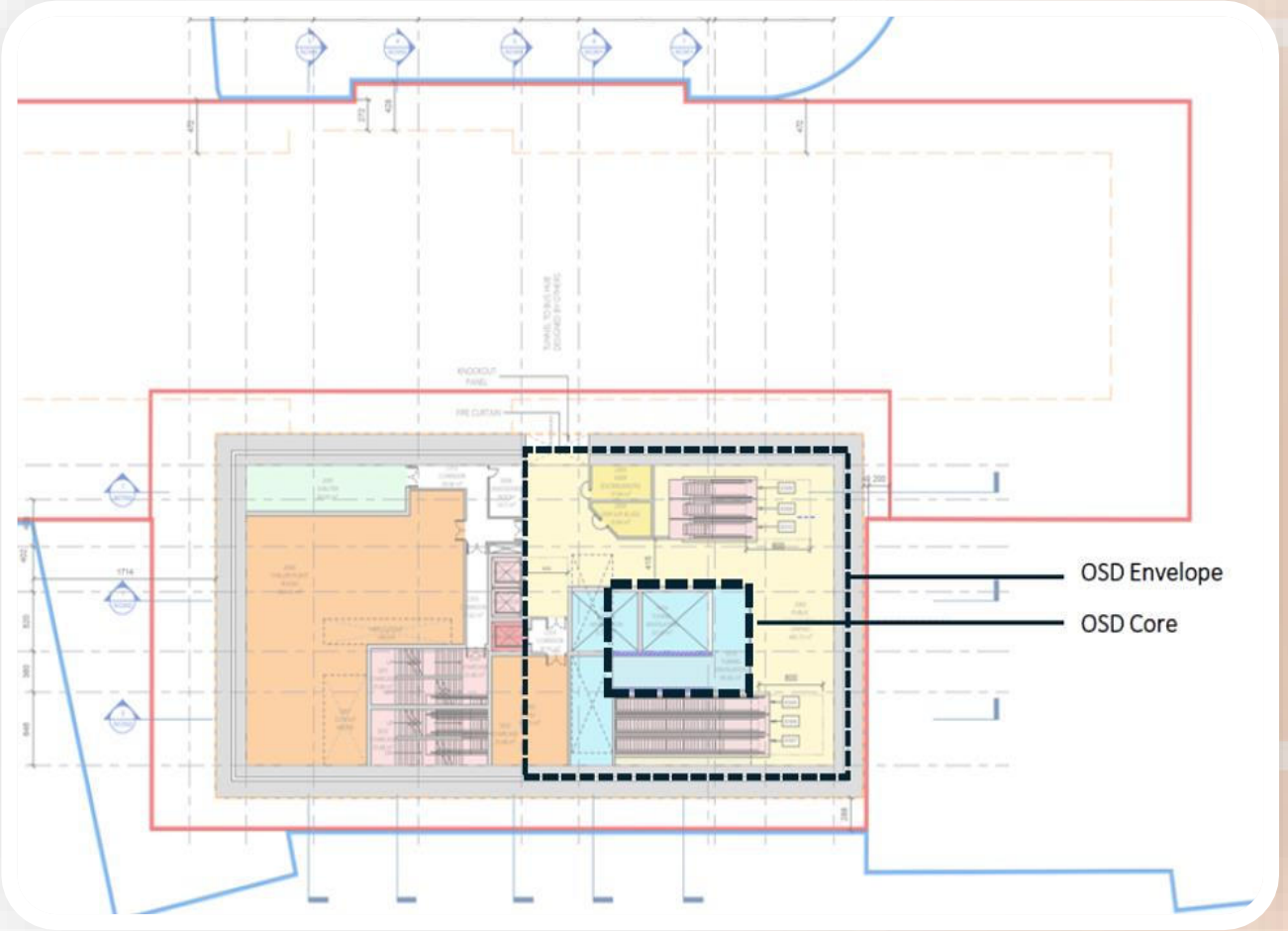






Metro NTA

WP #3 - Oversite Development

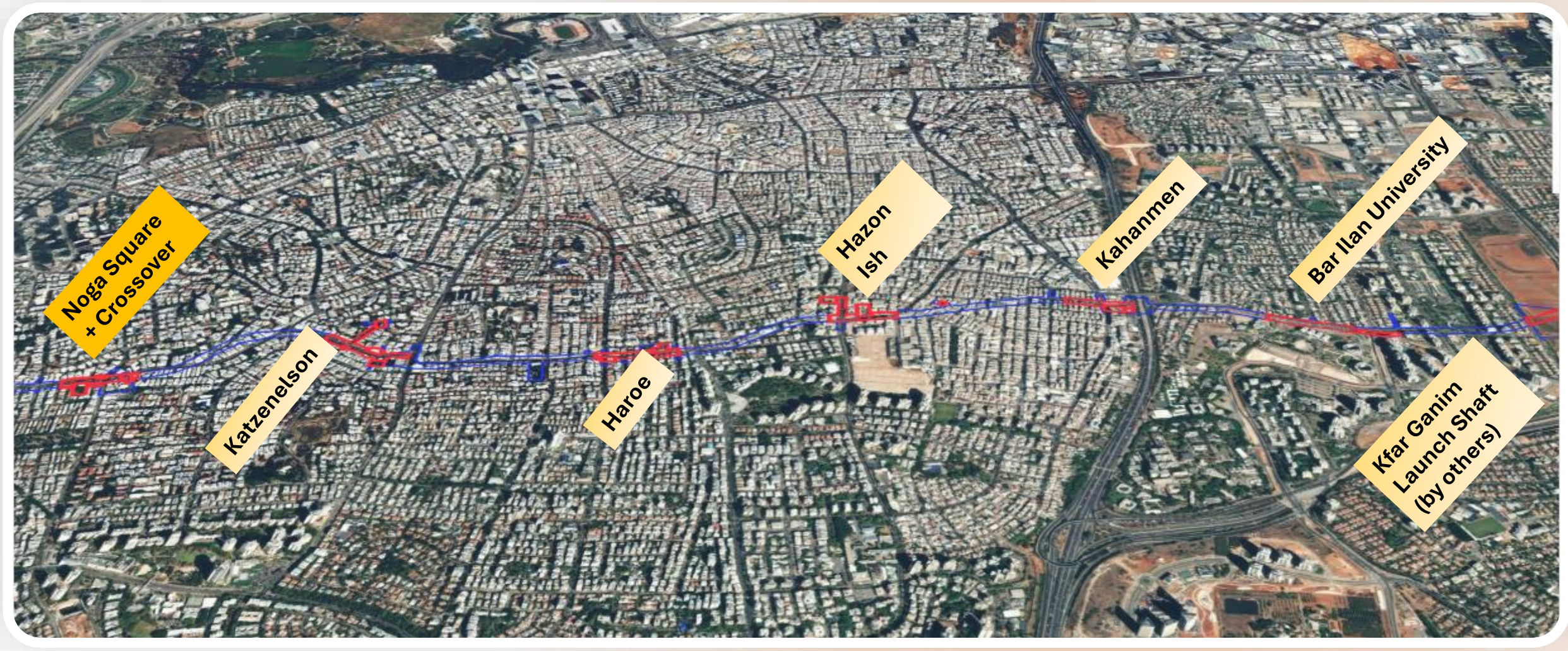




12 level residential development above Kahanmen Station

Metro NTA

Work Package #3



Metro NTA

WP #3 - Noga Square Station & Crossover

- Mined/NATM Station & Crossover
- 2 Access Shafts (6-7 levels)
- 2 Entrances
- Shaft: ~42 m Depth
- Cavern: ~40 m Depth
- Cavern: ~340m Length

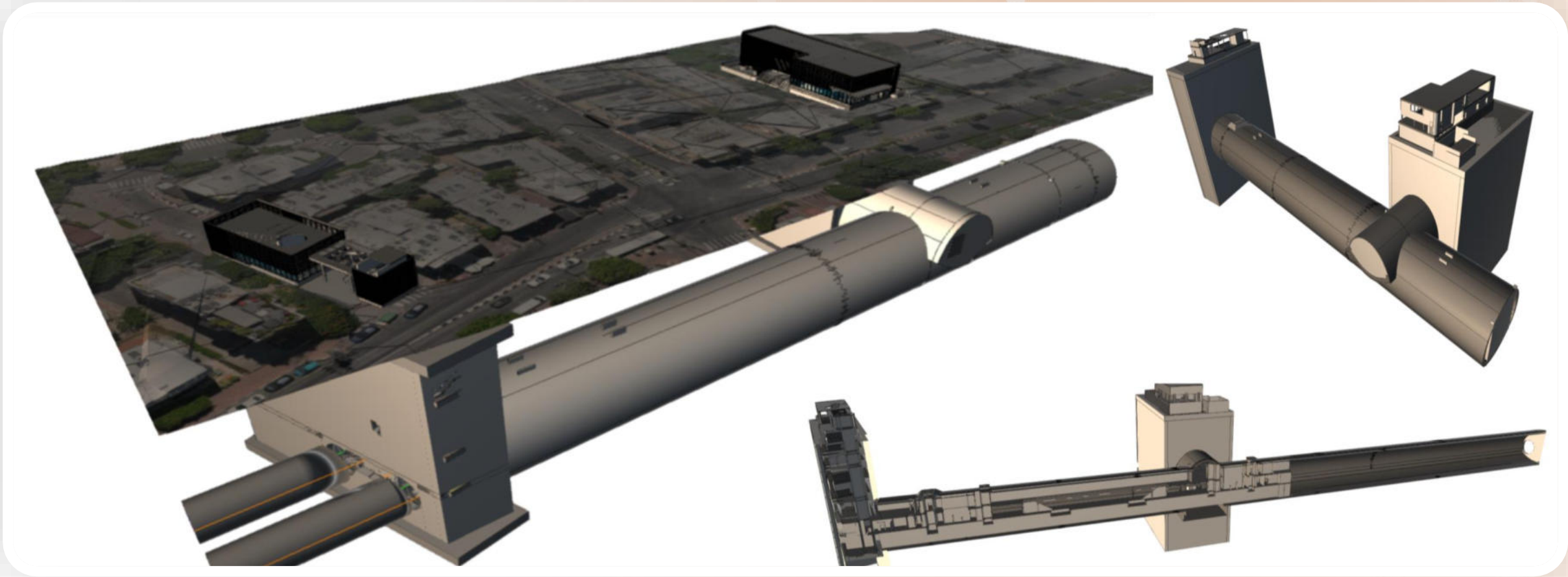
(Station & Crossover)



Metro NTA

WP #3 - Noga Square Station & Crossover

- Mined Station & Crossover
- 2 x Access Shafts



Thank You & Shalom



Metro NTA

Line M3



Ira Davelman
Line Director - M3

Metro NTA

Line M3 - Overview

13
Municipalities

39
Kms

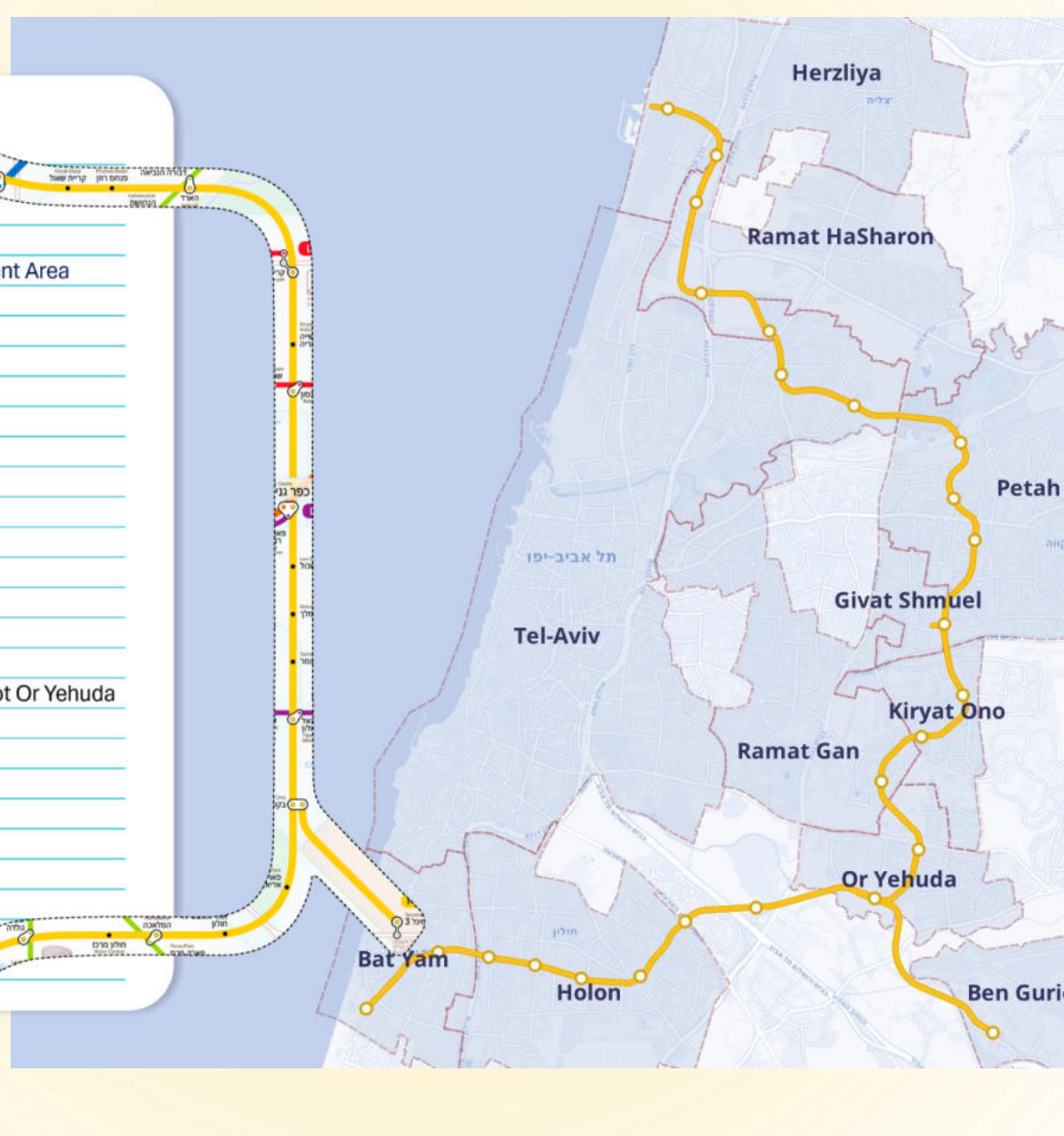
25
Stations

480,000
Daily Passengers

Municipalities
Herzliya
Ramat HaSharon
Tel Aviv
Petach Tikva
Givat Shmuel
Kiryat Ono
Ramat Gan
Or Yehuda
Hemed
Mikve Israel
Azor
Holon
Bat Yam

Stations

- Ben Gurion Branch
- Herzliya Terminus
- Herzliya E.A
- Ramat HaSharon Employment Area
- Glilot
- Kiryat Shaul
- Pinchas Rosen
- Ramat Hachayal - Ha'arad
- Kiryat Arye Train Station
- Kiryat Arye Industrial Area
- Beilinson Hospital
- Kfar Ganim
- Levi Eshkol
- Shlomo HaMelech
- Tel Hashomer Hospital
- Yigal Alon
- Bik'at Ono
- Depot Interchange and Depot Or Yehuda
- Ariel Sharon Park
- Holon Industrial Area
- HaMelacha
- Holon Center
- Golda Meir
- Holon Yoseftal
- Bat Yam Yoseftal
- Hakomemiyut
- Terminus Bat Yam



Metro NTA

Line M3 - Execution Stage A

24
Kms

16
Stations

10
Operational elements

1 **Depot**
2 **HV SS**

Metro NTA

Stations

- Ben Gurion Branch
- Herzliya Terminus
- Herzliya E.A
- Ramat HaSharon Employment Area
- Glilot
- Kiryat Shaul
- Pinchas Rosen
- Ramat Hachayal - Ha'arad
- Kiryat Arye Train Station
- Kiryat Arye Industrial Area
- Beilinson Hospital
- Kfar Ganim
- Levi Eshkol
- Shlomo HaMelech
- Tel Hashomer Hospital
- Yigal Alon
- Bik'at Ono
- Depot Interchange and Depot Or Yehuda
- Ariel Sharon Park
- Holon Industrial Area
- HaMelacha
- Holon Center
- Golda Meir
- Holon Yoseftal
- Bat Yam Yoseftal
- Hakomemiyut
- Terminus Bat Yam



Line M3 - Execution Stage B

11+5
Kms

7+1
Stations

5
Operational elements

Stations

- Ben Gurion Branch
- Herzliya Terminus
- Herzliya E.A
- Ramat HaSharon Employment Area
- Glilot
- Kiryat Shaul
- Pinchas Rosen
- Ramat Hachayal - Ha'arad
- Kiryat Arye Train Station
- Kiryat Arye Industrial Area
- Beilinson Hospital
- Kfar Ganim
- Levi Eshkol
- Shlomo HaMelech
- Tel Hashomer Hospital
- Yigal Alon
- Bik'at Ono
- Depot Interchange and Depot Or Yehuda
- Ariel Sharon Park
- Holon Industrial Area
- HaMelacha
- Holon Center
- Golda Meir
- Holon Yoseftal
- Bat Yam Yoseftal
- Hakomemiyut
- Terminus Bat Yam



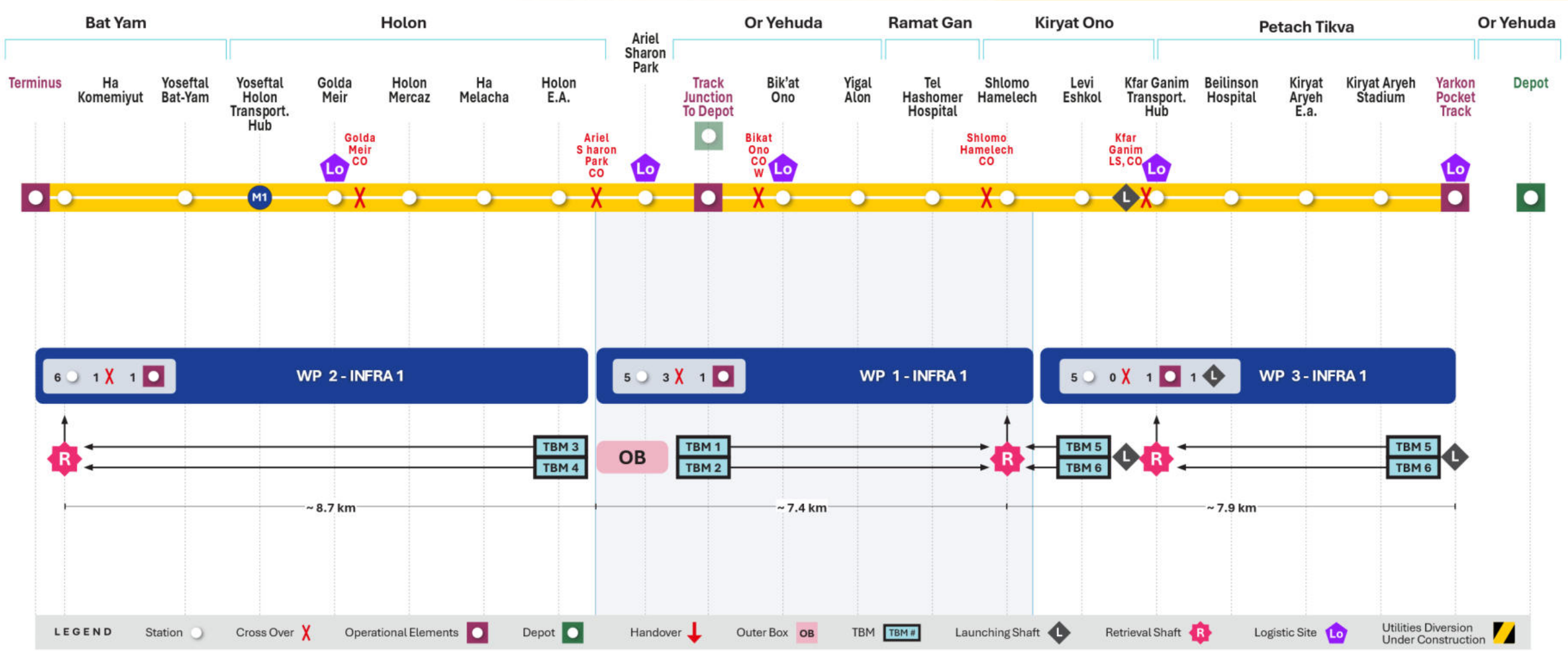
Metro NTA

Line M3

WP1 INFRA 1

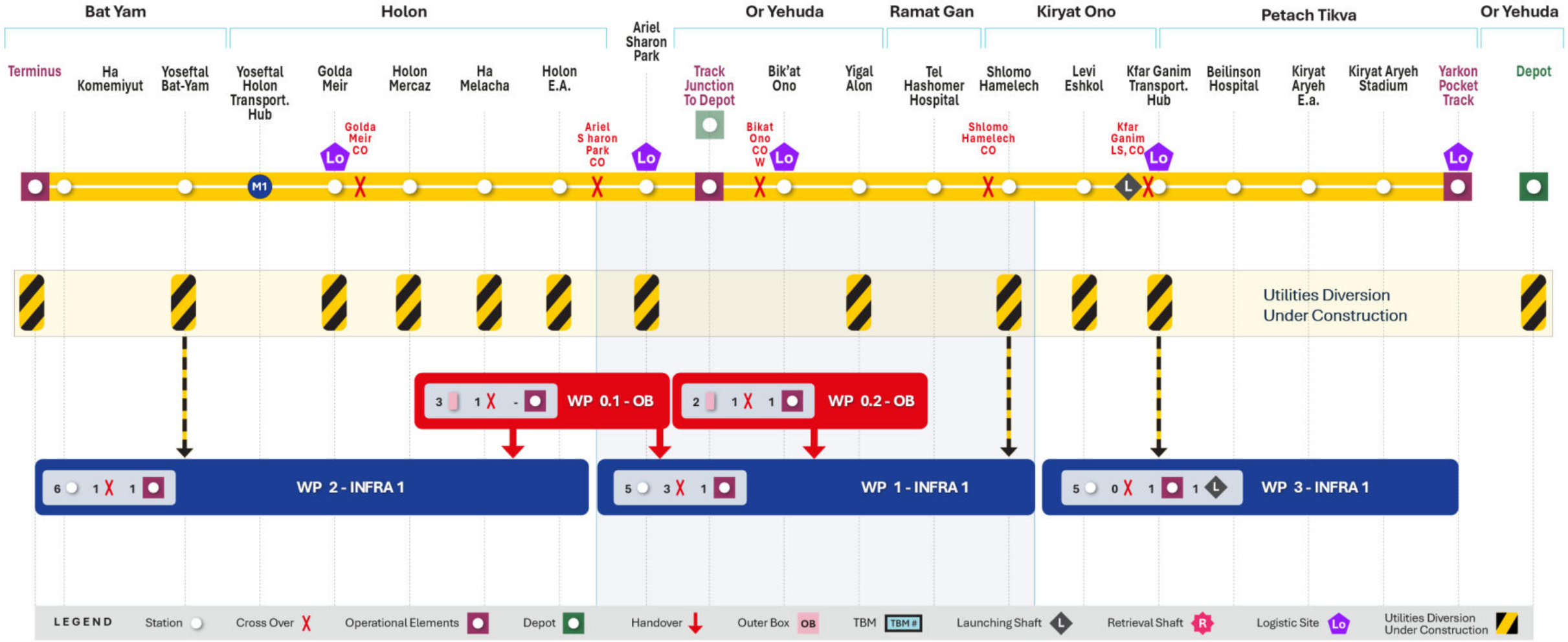
Delivery Strategy

Line M3 – Delivery Strategy



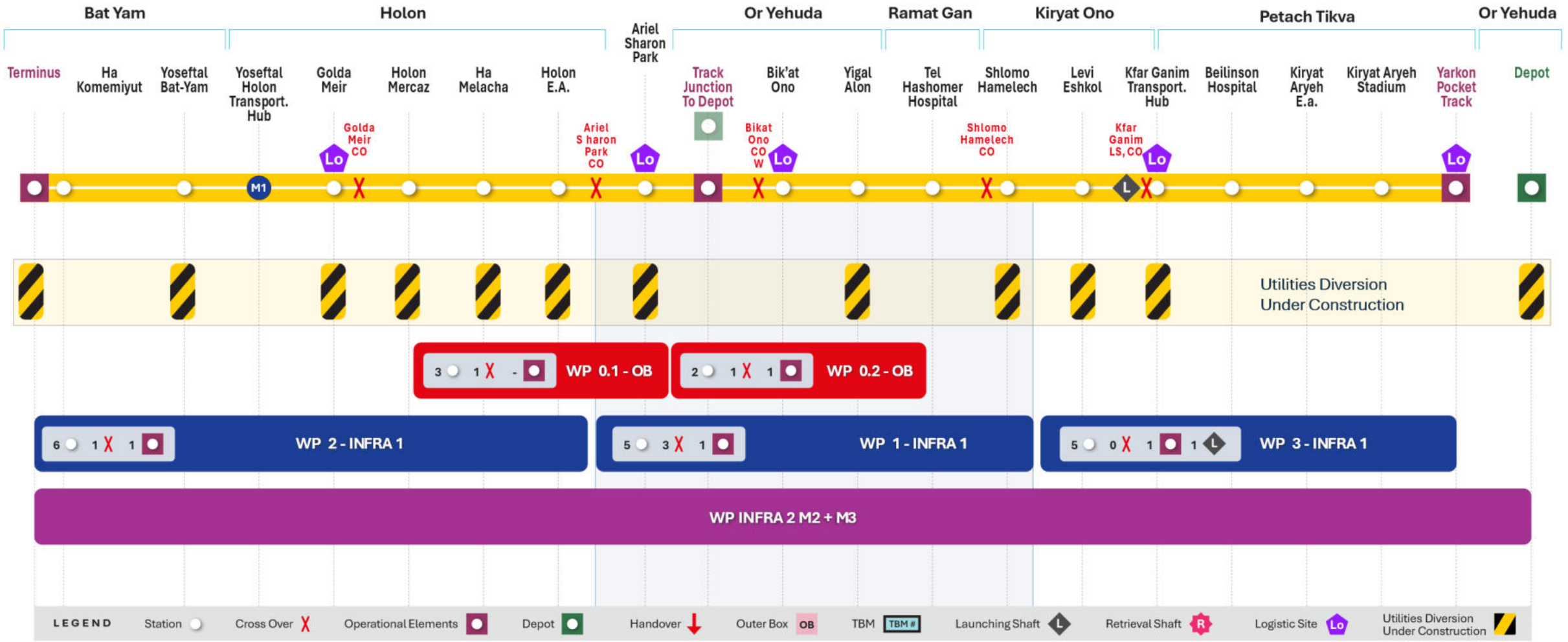
Metro NTA

Line M3 - Station-Box-First Delivery Strategy



Metro NTA

Line M3 - Delivery Strategy - Completion to INFRA2

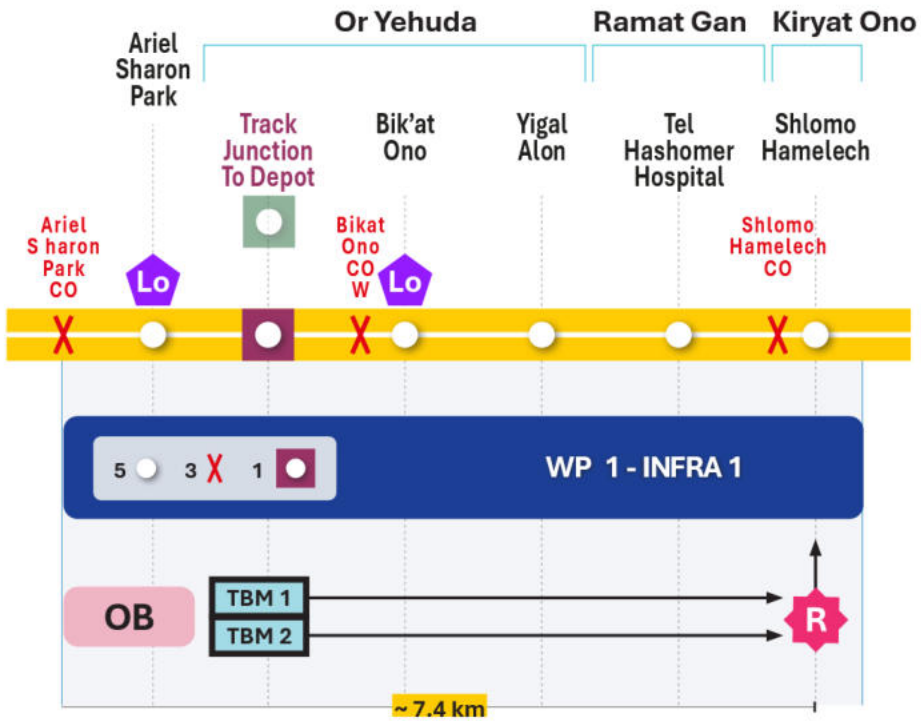


Metro NTA

WP1 INFRA 1

Story Board

Line M3



WP1 INFRA 1

Total Tunnel Length:
7.4 KM

Tunnel Length:
5.6Km (excluding station lengths)

Stations:
5 (from which 3 stations have an existing outer box)

Crossover:
3 (from which 2 crossovers have an existing outer box)

Track Junction:
1 (existing outer box)

Cross passages @ 250 m Approx

The description of the Infra 1 Work Packages, including their scope and content, is indicative only and does not constitute a final or complete definition of the Works. The detailed scope of each Work Package shall be as defined in the Tender Documents to be issued by NTA.

Metro NTA

Line M3 WP1 - Municipalities

A landmark environmental restoration zone, transforming a former landfill into a metropolitan park serving the entire region



Ariel Sharon Park, Israel, 2014 | MathKnight | wikimedia.org

ARIEL SHARON PARK

A metropolitan centre of ~170,000 and a key leading business district, driven by the economic power of dense urban planning.



View Of Ramat Gan Diamond Exchange District | Someone35 | wikimedia.org

RAMAT GAN

A strategically located city of ~40,000 residents near Ben-Gurion Airport, whose growth is tied to its transportation connectivity



Or Yehuda, Israel. Aerial photograph | Shaishar | wikimedia.org

OR YEHUDA

A ~46,000-resident municipality undergoing major urban renewal, embracing the shift toward higher-density metropolitan living.



Kiryat Ono, Israel. | Salonmor | wikimedia.org

KIRYAT ONO

Metro NTA

Line M3 WP1 - Stations



Ariel Sharon Park

A landmark environmental restoration area, transforming a former landfill into a metropolitan park.



Track Junction

A strategic infrastructure node that supports network continuity and emphasizes coordinated transit planning.



Bik'at Ono

A ~46,000-resident community undergoing urban renewal, embracing the shift toward higher-density metropolitan living.

Yigal Alon

Positioned at the city entrance in a low-density urban area near major traffic routes, affecting few residences and slated for significant future redevelopment



Tel Hashomer Hospital

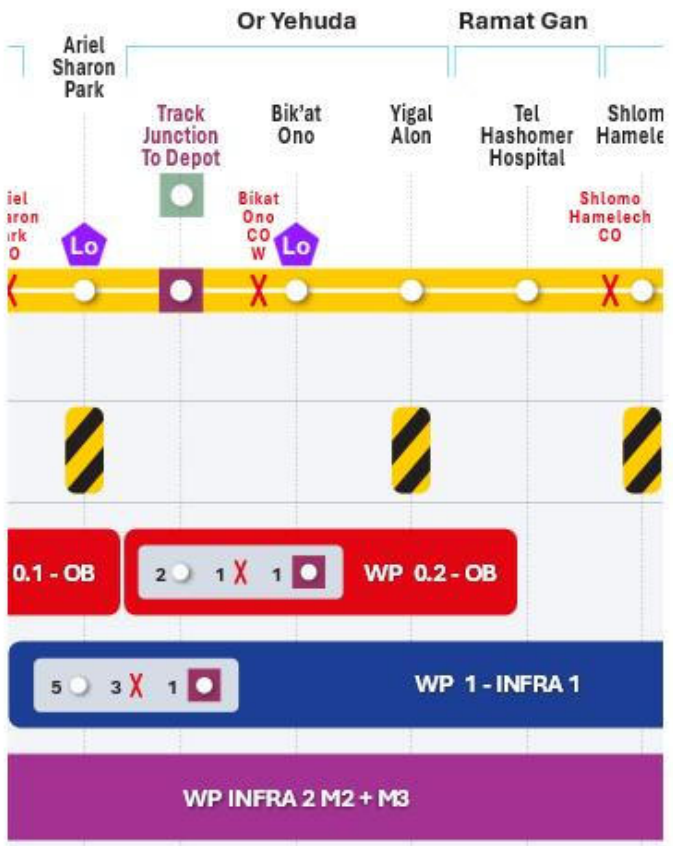


A major medical campus that serves as a central treatment and research center in the region, treating over a million patients annually and functioning as a critical national healthcare hub.

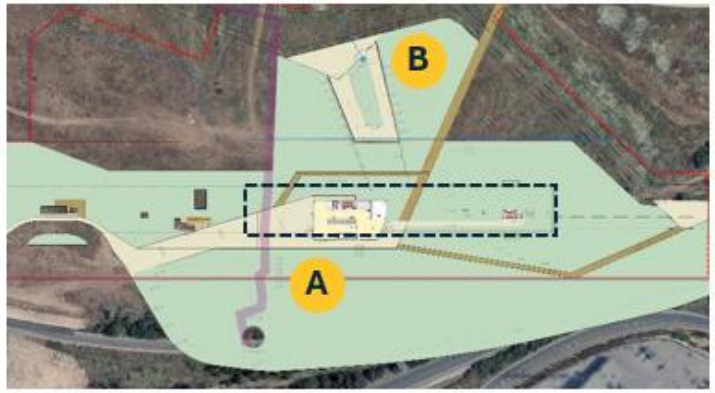
Shlomo Hamelech



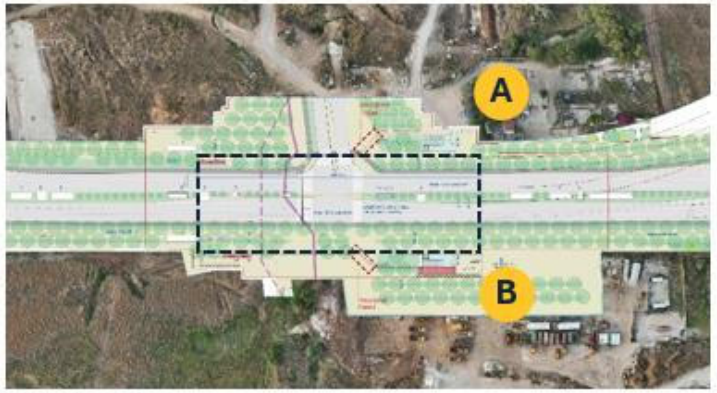
A gateway location to Kiryat Ono where infrastructure development aligns with ongoing neighborhood renewal and growth.



Line M3 WP1 - Stations - At Grade Level



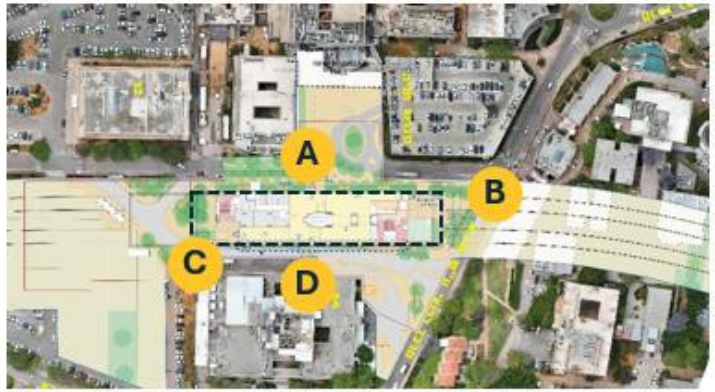
ARIEL SHARON PARK
X 2 Entrances: 1 pavilion and 1 direct to Concourse



BIKAT ONO
X2 Entrances



YIGAL ALON
X3 Entrances



TEL HA'SHOMER HOSPITAL
Grade Concourse

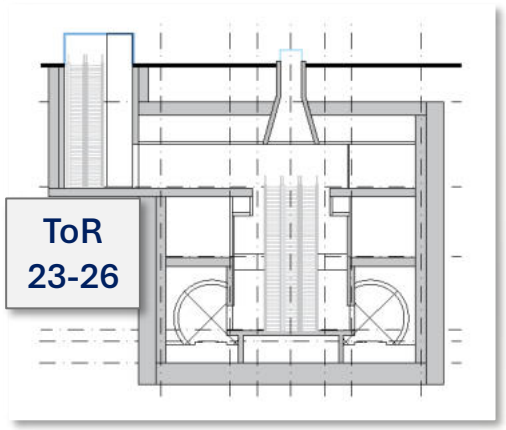


SHLOMO HAMELECH
X3 Entrances

Metro NTA

Line M3 - Station Typologies

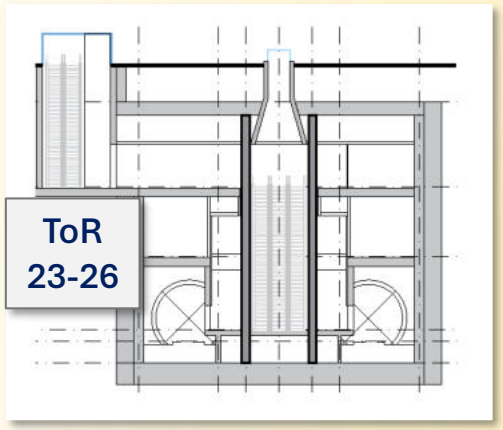
B



Total
28.9

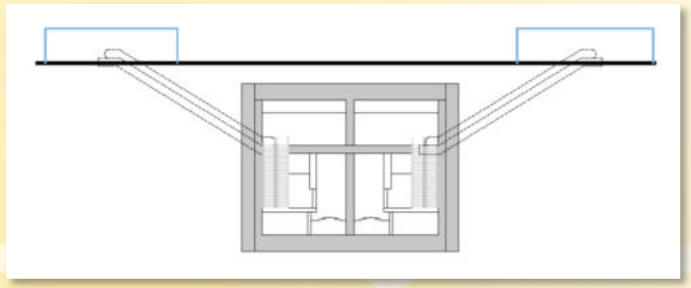
3 levels

Bc



Total
30.9

3 levels + columns



Grade Concourse
Tel Ha'Shomer St.

&

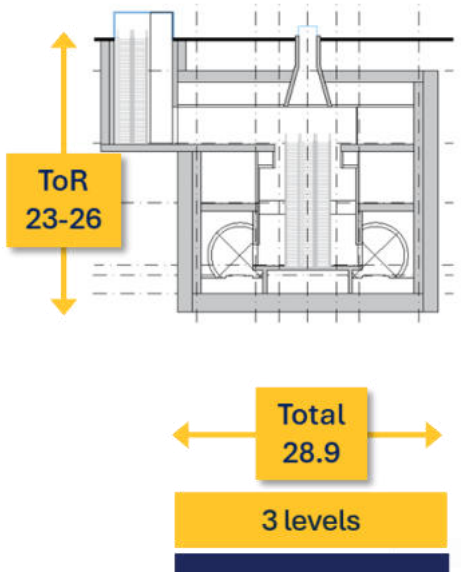
Transfer
Bikat Ono St.

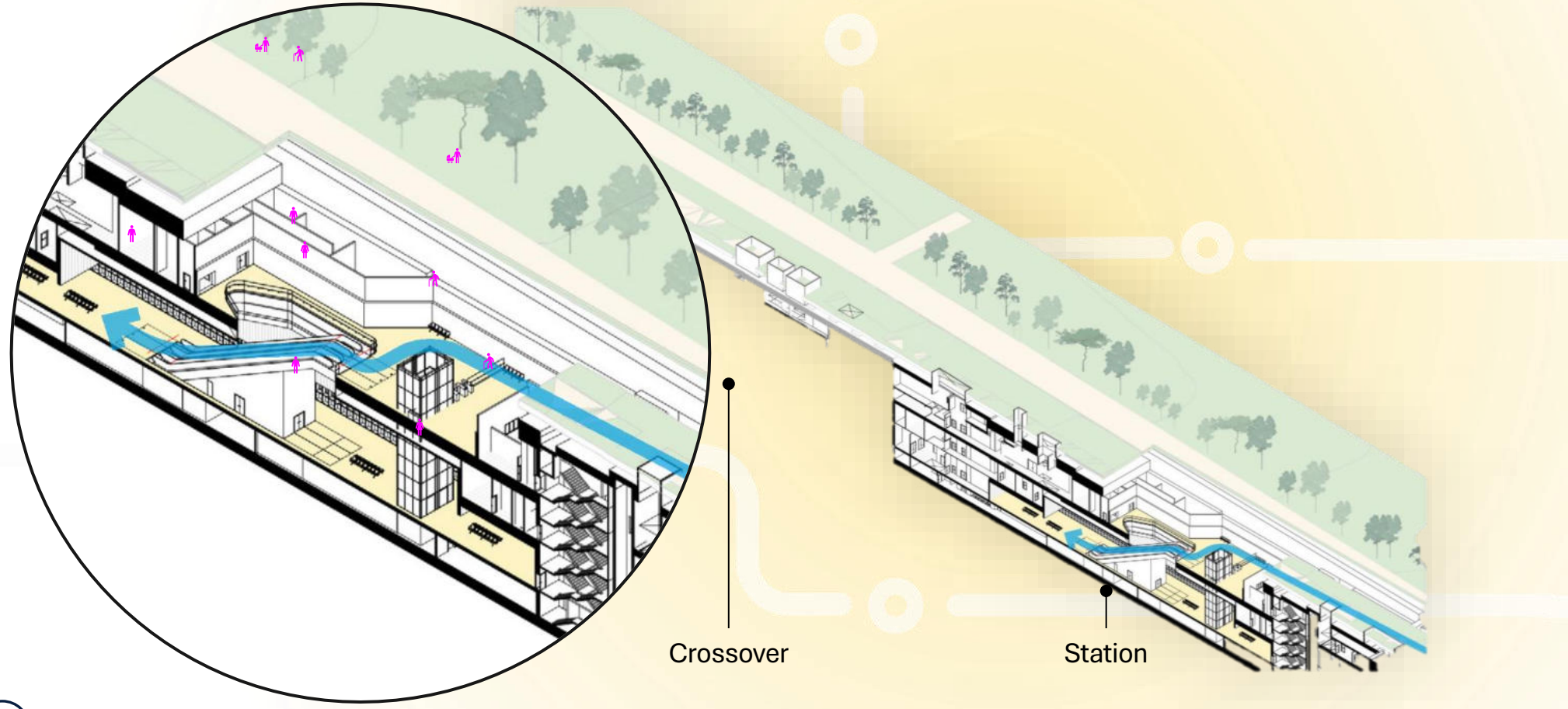
Custom

Metro NTA

Line M3 - Station Layout - Type B

- Shlomo Hamelech Station & Operational Element
- **Type B**

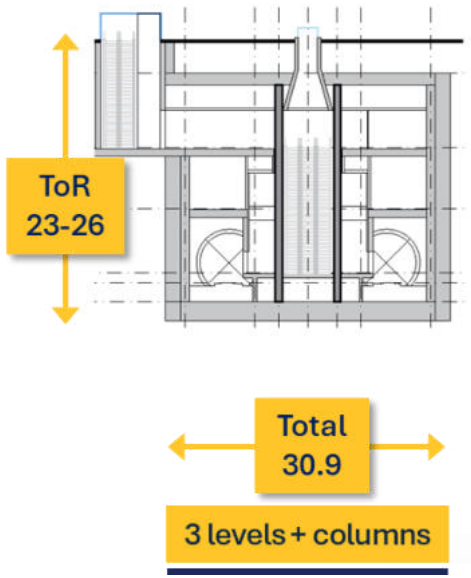


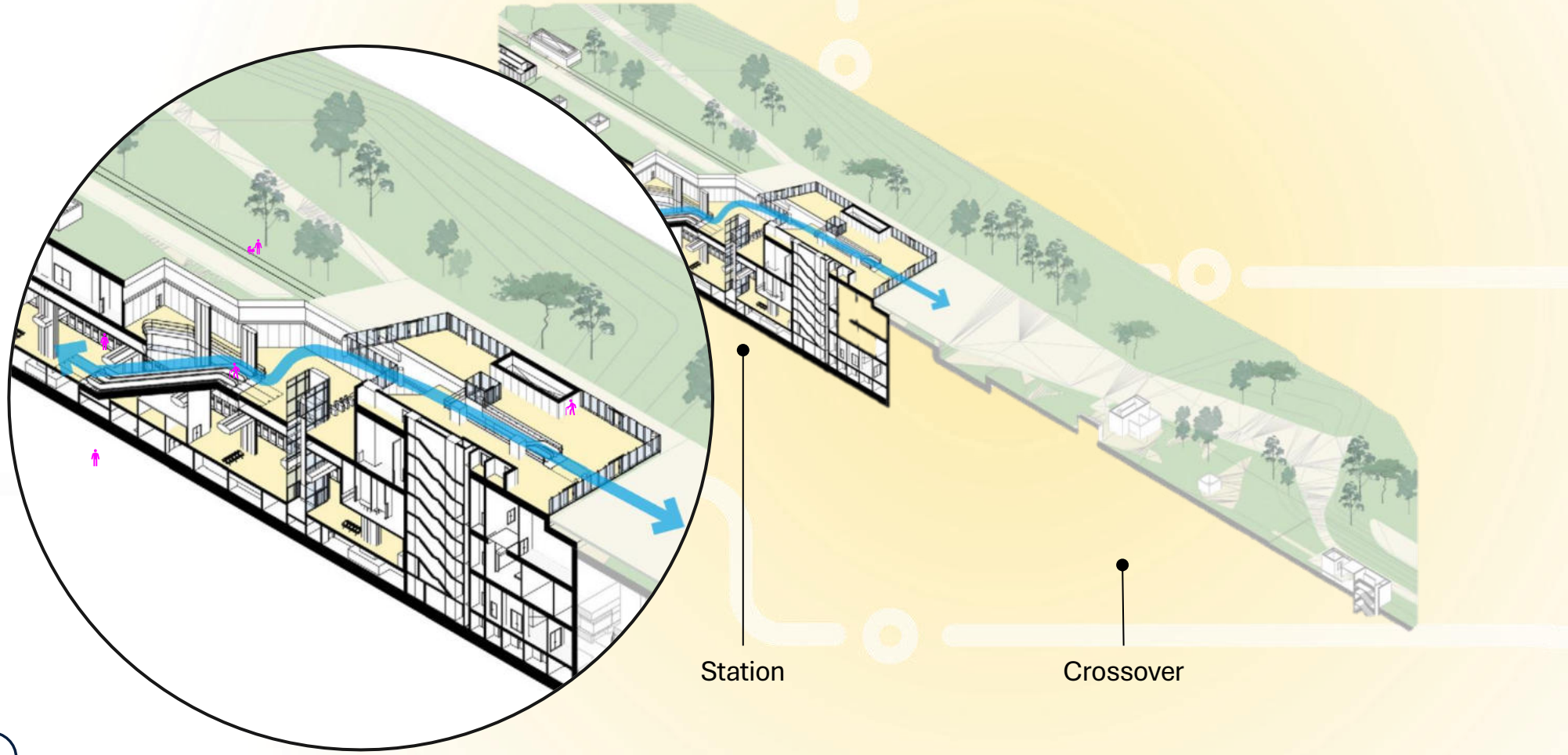


Metro NTA

Line M3 - Station Layout - Type BC

- Ariel Sharon park Station & Operational Element
- **Type Bc**

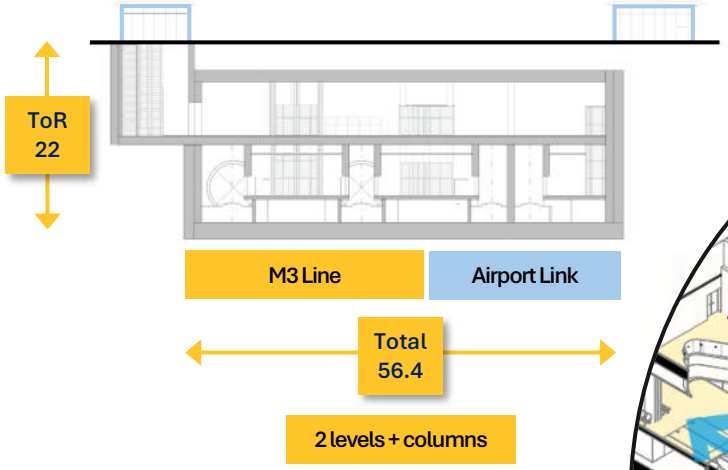


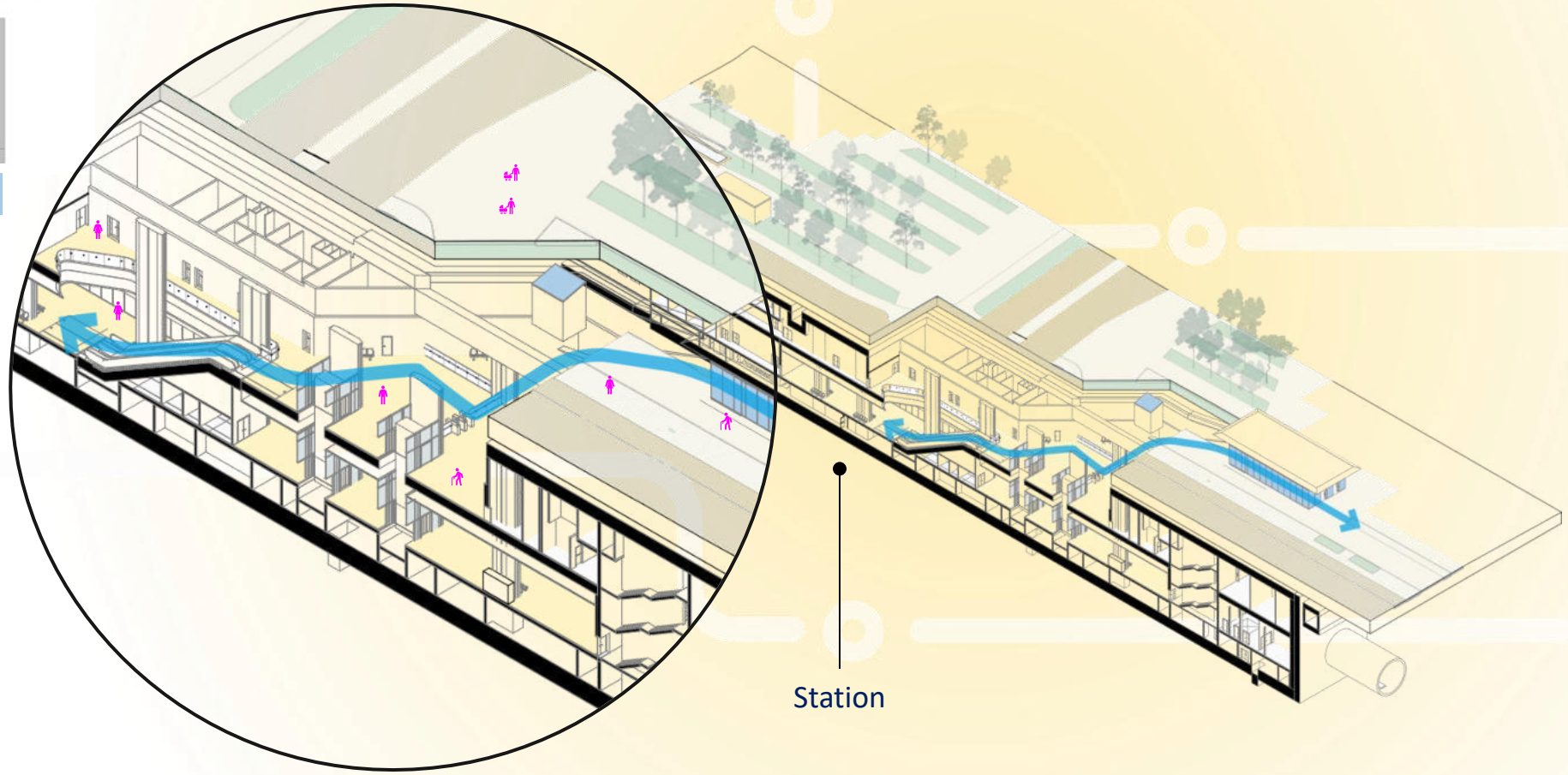


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Line M3 - Station Layout - Transfer

- Bikat Ono Station
- **Transfer - Airport Link**

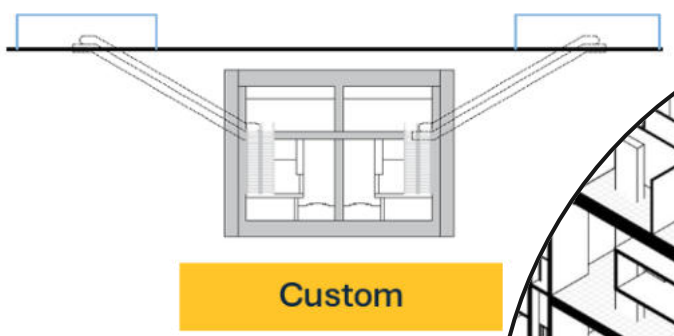


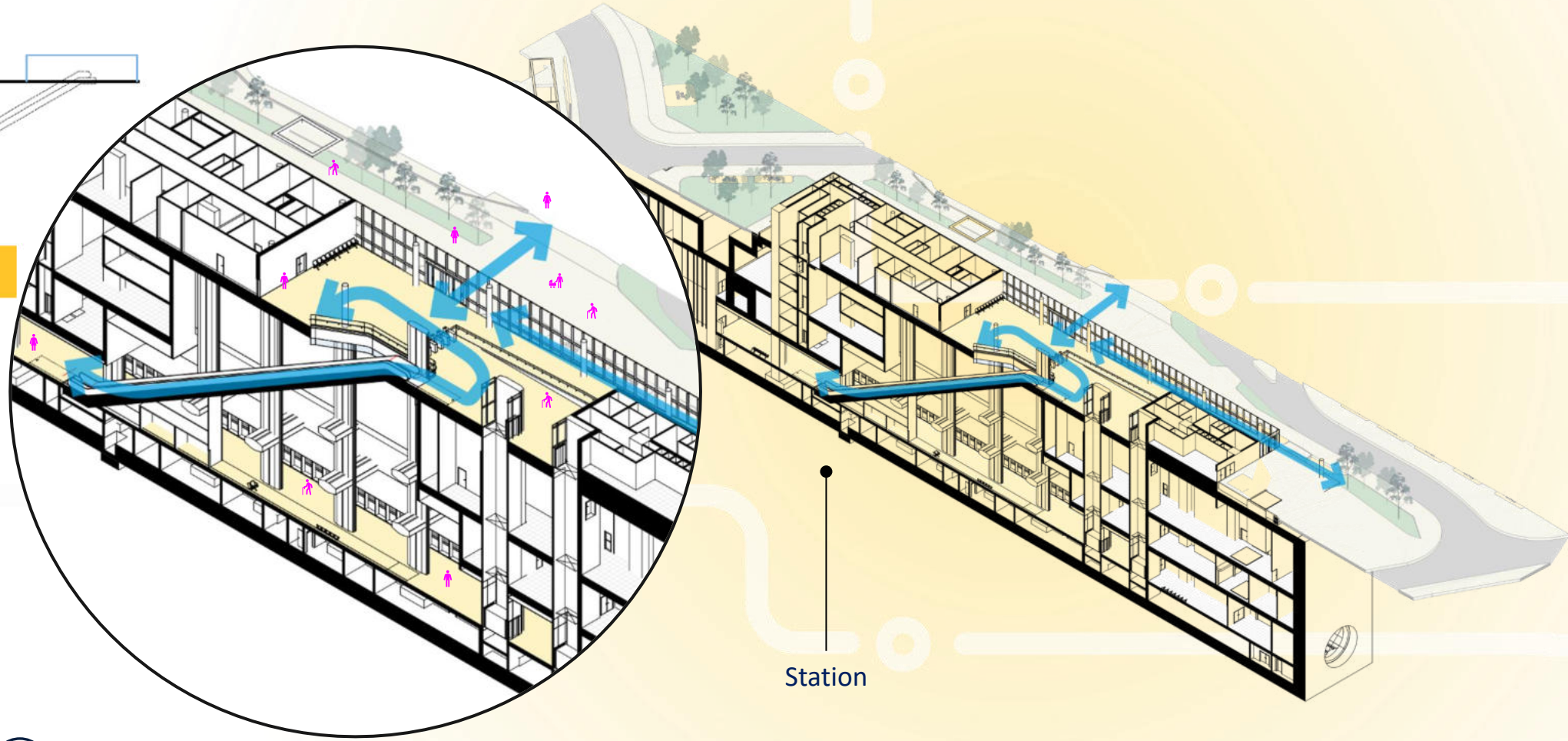


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Line M3 - Station Layout - Grade Concourse

- Tel Ha'Shomer Station
- **Grade Concourse**





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WP1 INFRA 1

SOW

Line M3 - Infra 1 WP1 - Scope of Works



Station Box First Typology

CONSTRUCTION METHODOLOGY

"Station Box" First, Tunneling by TBM

SCOPE OF WORK – DESIGN AND BUILD

- Mobilization Site Construction | Temporary Traffic Arrangements
- Relocating Utilities | Environmental Treatment and Works
- Construction of Outer Box | of Inner Box and Entrances
- Tunneling Works | Tunnel Drainage | 1st stage concrete for Tracks
- Embedded items | Concrete opening
- At Grade Works

- Functional architecture | Construction Methodology Phasing
- Detailed Design for all above | Permits | IFC | As Made in CDE / BIM Models
- Interface with 3rd parties, Authorities , M1/M2, other M3 packages and more.
- HO and giving the access to Infra 2 Contractor | Taking Care | Taking Over

NTA's REFERENCE DESIGN AND PERMITS

- Reference design includes coordination with NPA and 3rd parties.
- Contractor responsible for permits and relevant approvals.

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Line M3 - Infra 1 WP1 - Scope of Works



Bottom Up - Inner Box

CONSTRUCTION METHODOLOGY

"Station Box First" strategy
min 6 Hydromill working in parallel

UNDERGROUND STATIONS ARE CONSTRUCTED WITH:

OUTER BOX (OB)	INNER BOX (IB)
Permanent diaphragm walls (D-Walls) forming the stations envelope.	All permanent internal walls, columns, intermediate slabs, and roof slabs.
Permanent contiguous pile walls forming the entrances envelope.	Entrances and other operational structural elements, including ventilation.
Horizontal struts, Temporary Base Slabs (TBS), or JG plugs, as required for stability.	Full integration with tunnelling works and OB structure
Temporary decks to support construction and maintain existing traffic.	

GROUND WATER CONTROL

TBS BY OB CONTRACTOR DRY BOX FOR INFRA 1	DRAINAGE (SUMP)	NO GROUND WATER CONTROL IS NEEDED
Igal Alon Station Bik'at Ono	Ariel Sharon Station Track Junction (Depot)	Tel Ha'Shomer Station Shlomo Ha'Melecha Station
2 sites	**2 sites**	**4 sites**

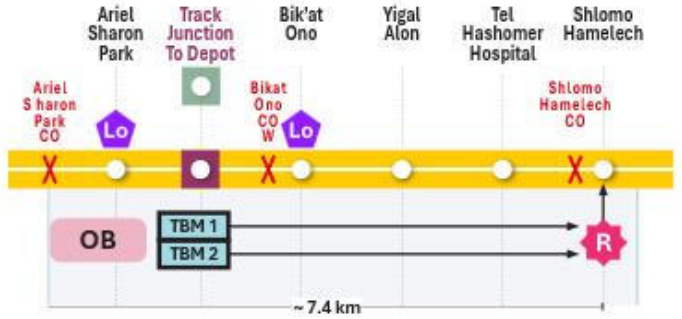
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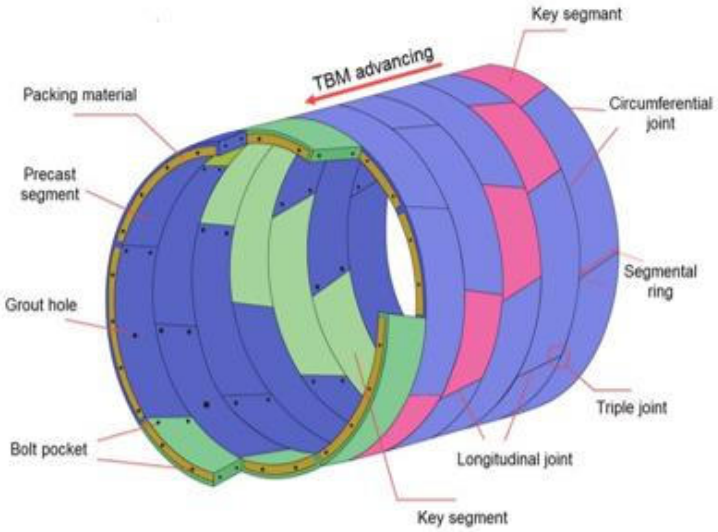
Line M3 - Infra 1 - Scoop of Works



Alignment | Tunneling | Geotech

THE CONSTRUCTION STRATEGY ENCOMPASSES 2 TBM DRIVES.





TBM tunnels (double-tube) :

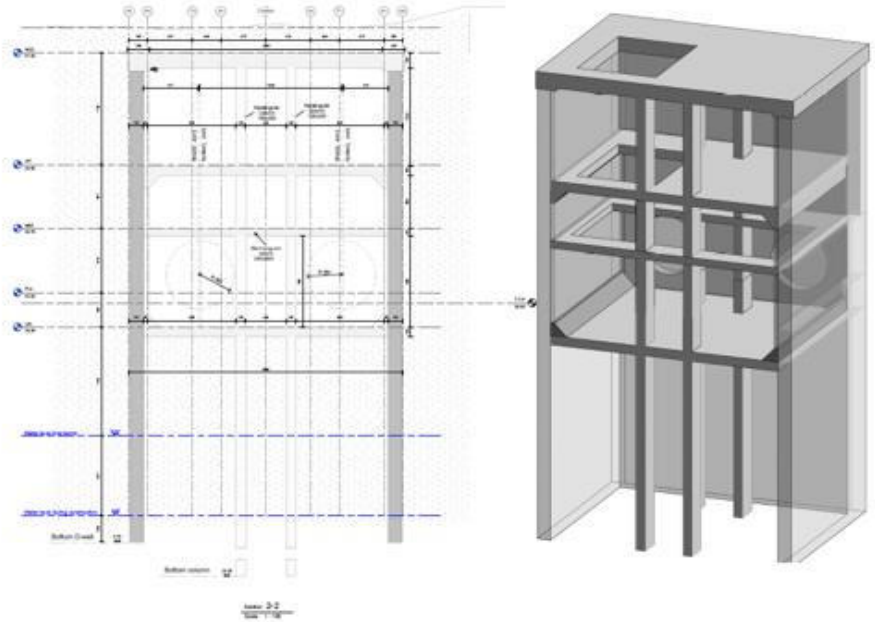
Excavation diameter	= 7.5 m
Internal diameter	= 6.5 m
Segment thickness	= 0.35 m

Considering the "Station Box First" strategy, the tunnel excavation length is estimated approximately, excluding station lengths.

LAUNCHING	RETRIEVING	LENGTH [KM]
Ariel Sharon Park Station	Shlomo Hamelech	5.6
Kfar Ganim Cross-over -South	Shlomo Hamelech	2.04
Elements length		2.05
Total		**9.7**

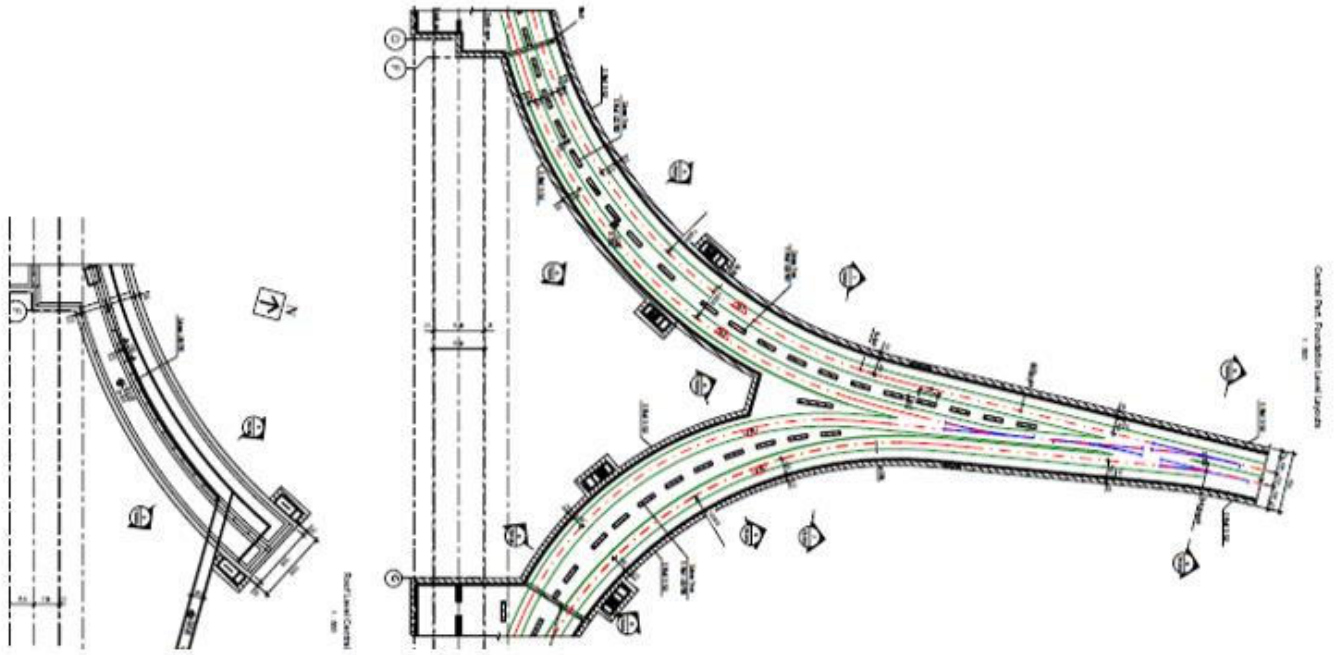
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Line M3 - Infra 1 WP1 Special Operational Elements



Shlomo HaMelech Crossover

- Depth- 31m | Width- 29m | Length- 180m
- Top Down | Temp. Support Method - D-Wall + Slabs
- D-Walls [Depth (Thickness)] – 50 (1.5) m
- Depth of Bottom Excavation - 30m



Track Junction to Depot

- Track Junction is located between Ariel Sharon Park to the west and Or Yehuda to the east. It forms the connection between the M3 Line and the Mesubim Depot through a track split.

- Depth-18m
- Width-30m
- East- 117m
- West-130m

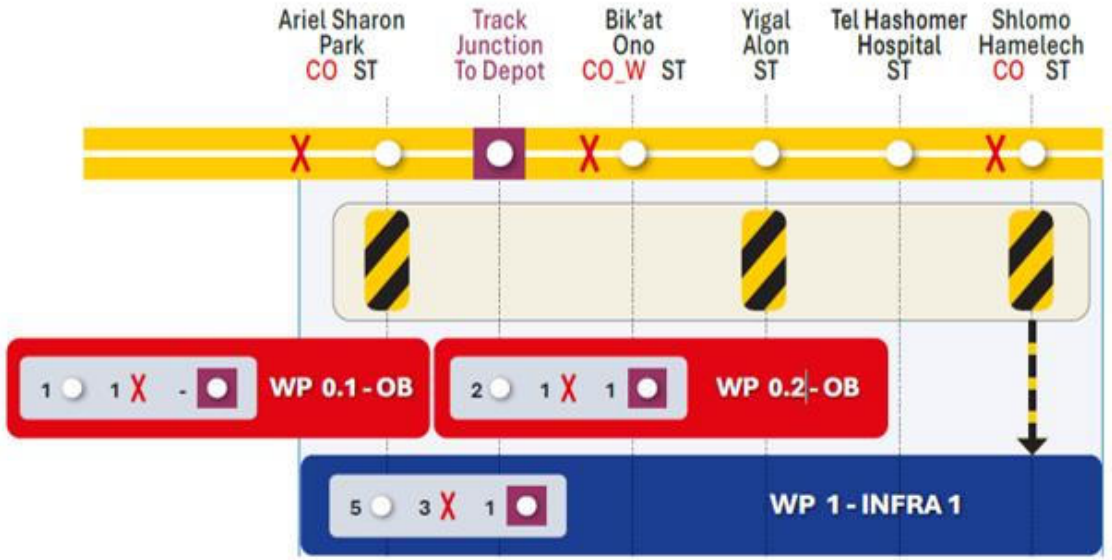
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Line M3 - Utilities Relocation execution prior to Infra 1



Early Utilities Relocation

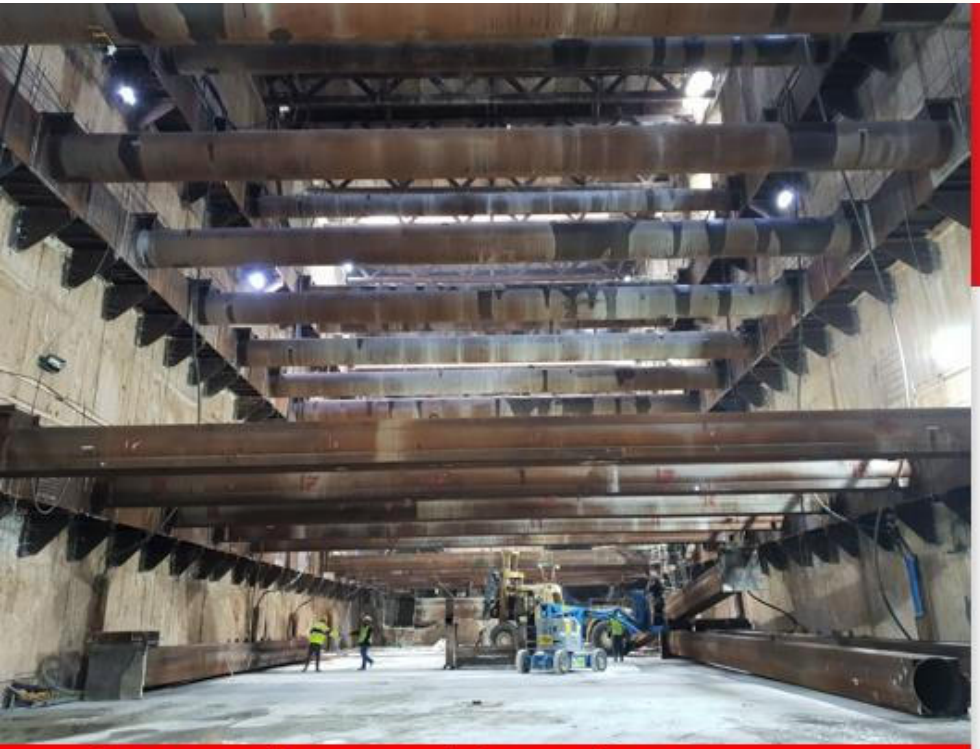
The Utilities Contractors will hand over the sites and works to the WP 0.1-0.2 OB Contractors and/or WP1 Infra 1 Contractor upon accomplishing:



- Completion to the greatest extent possible of relocating various utilities outside the Station Box limits, to their final locations
- Demobilization of the Contractor's site
- Set of As-Built Drawings, Quality Control Doc., etc.

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Line M3 - OB [WP0.1-0.2] execution prior to Infra 1

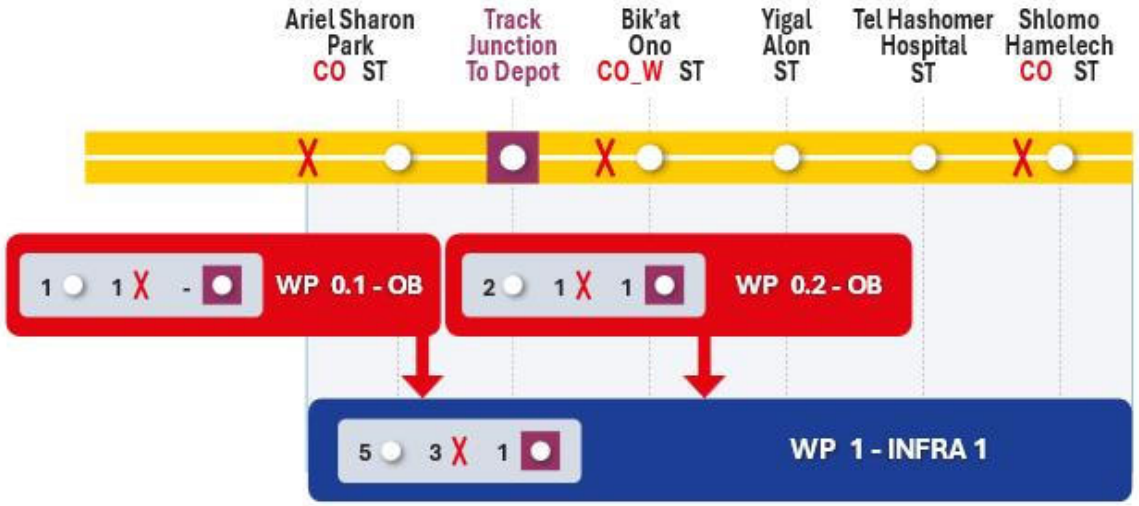


Outer Boxes Typology

CONSTRUCTION METHODOLOGY

"Bottom Up"

The Outer Box Contractors will hand over the Outer Boxes at 3 locations (out of 6) and the sites to the Infra 1 contractor upon accomplishing :



- Excavation and Support Structure | TBS (as defined)
- Full or Partial Dismantling of the Dewatering System
- Demobilization of the Contractor's site
- Set of As-Built Drawings, Quality Control Doc., etc.

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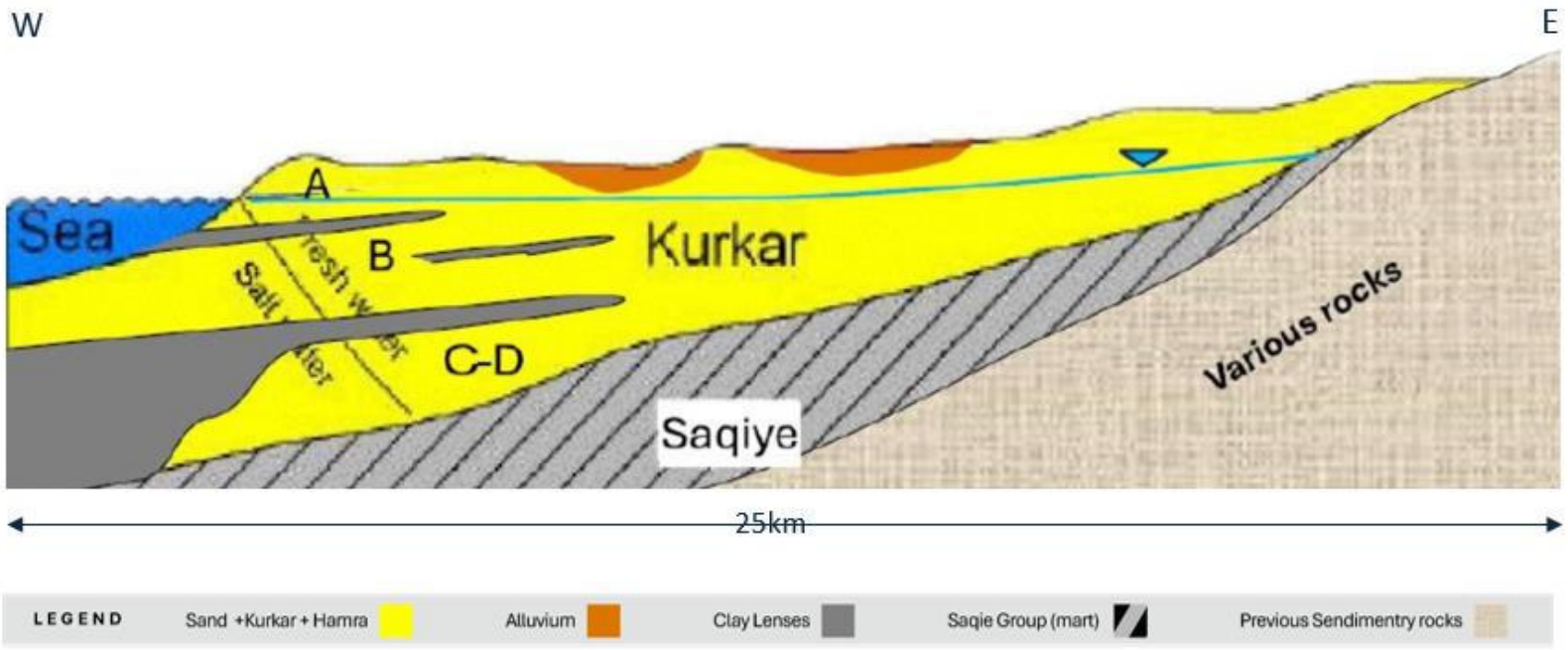
Line M3 - Infra 1 - Geological & Geotechnical profile

The M3 Line :

- Reaches a max. depth of ~50m.
- Runs within the Kurkar Group of ~100m depths of at least.

Kurkar Group Composition:

- Calcareous sandstone (Kurkar)
- Clayey to silty sand (Hamra)
- Loose dune sand
- Dark clays
- Silt and marls



Tests Done along the line	Numbers
Typical station	8
Typical tunnel section	9

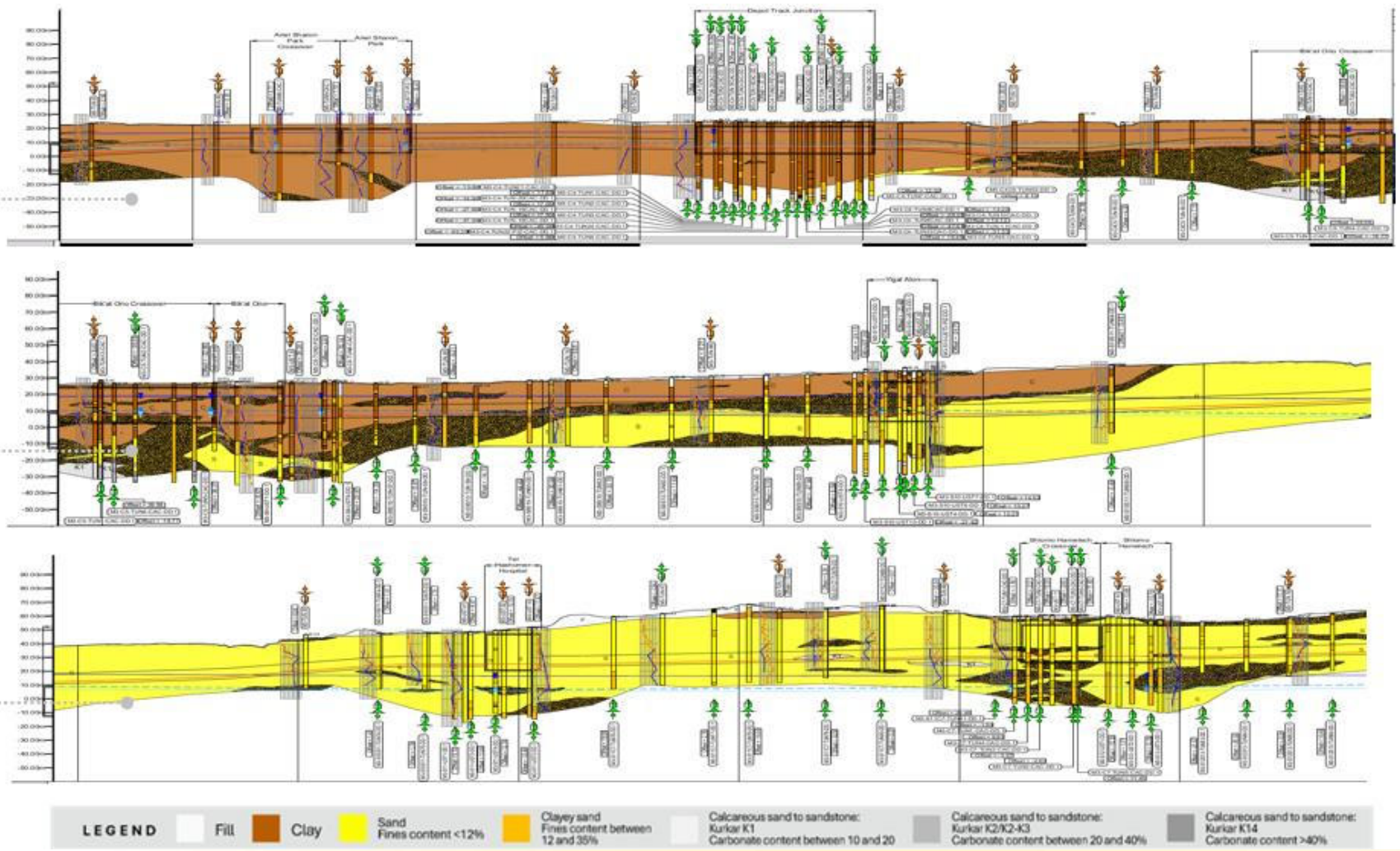
Tests Done along the line	Numbers
Boreholes	470
Lab testing	320

Line M3 - Geological & Geotechnical profile

Ariel Sharon - Bikat Ono

Bikat Ono - Yigal Alon

Yigal Alon – Shlomo Hamelech

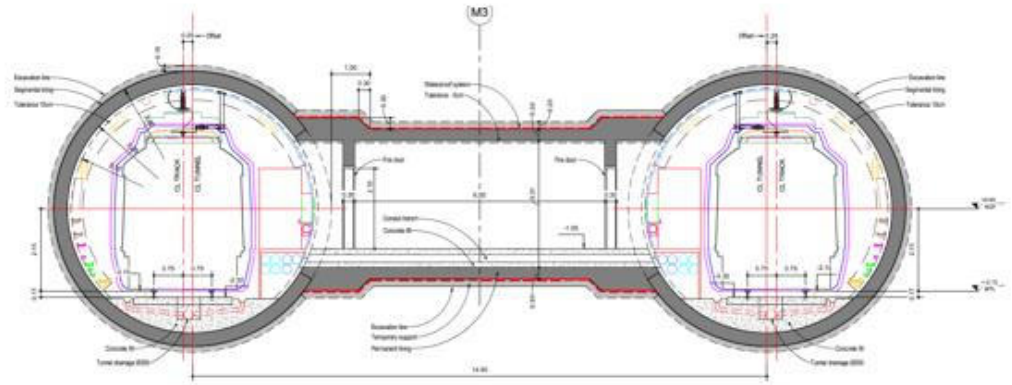


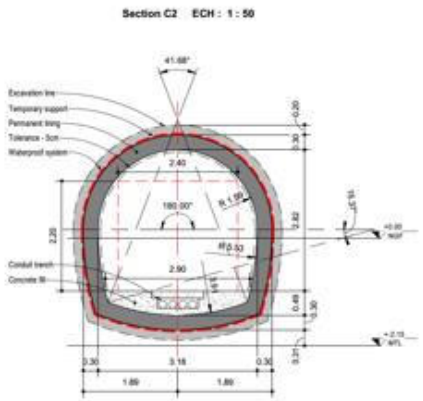
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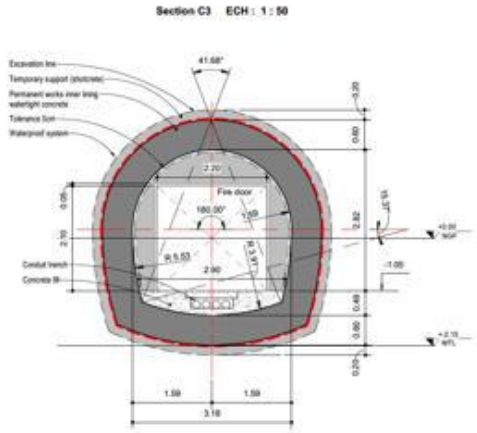
Line M3 - Design in Progress

DESIGN IN PROGRESS

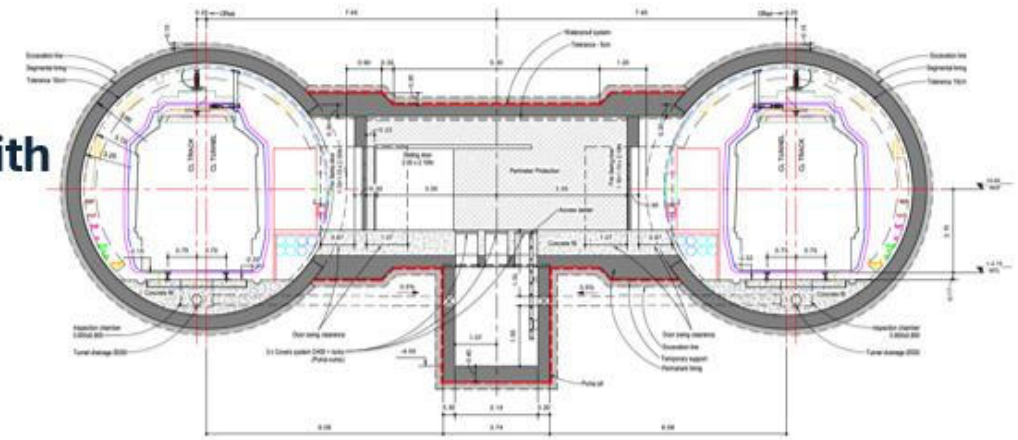
Cross Passages

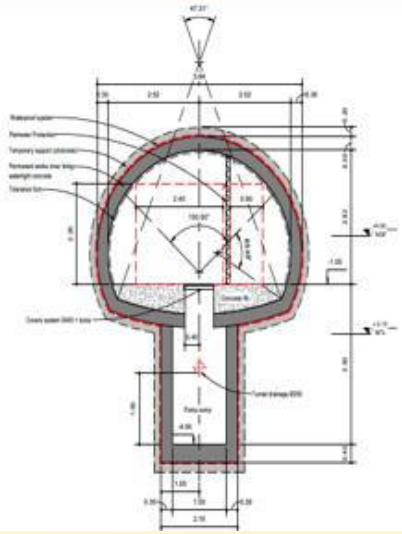


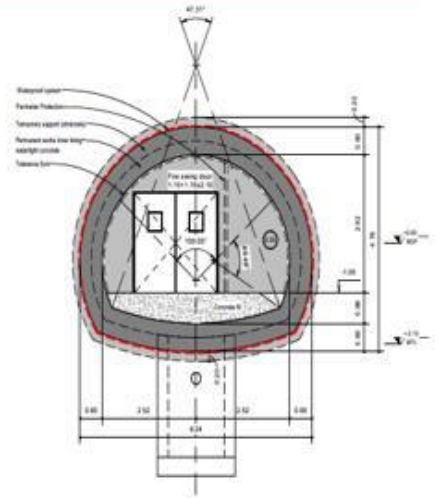




Cross Passages with Sump Pit





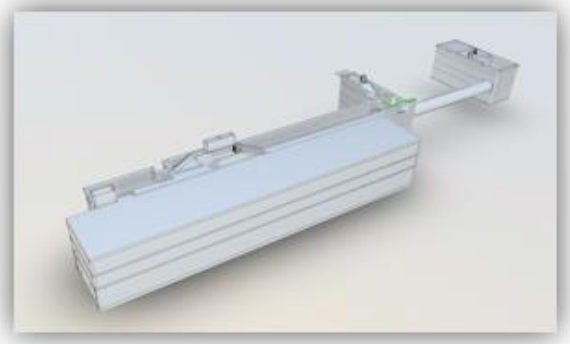


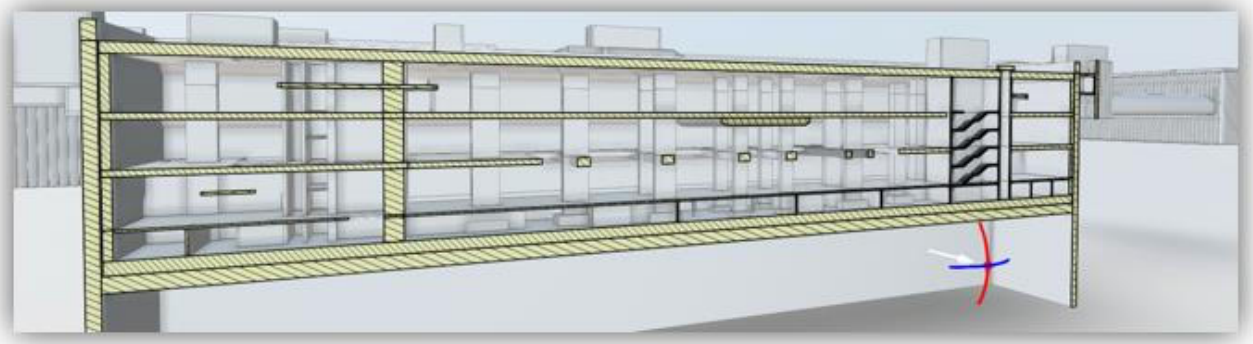
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Line M3 - Design in Progress

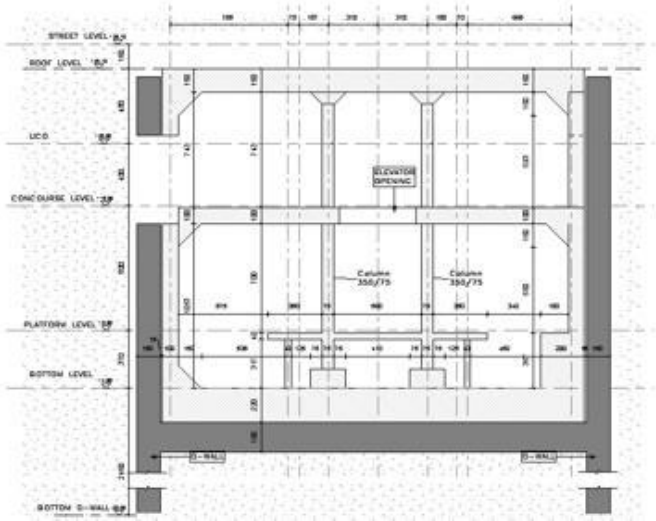
DESIGN IN PROGRESS

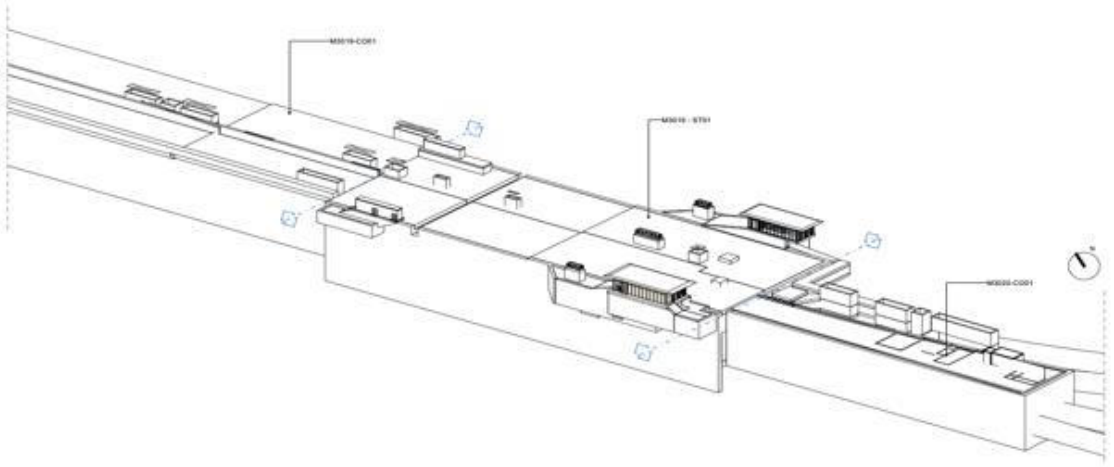
Yigal Alon Station





Bikat Ono Station



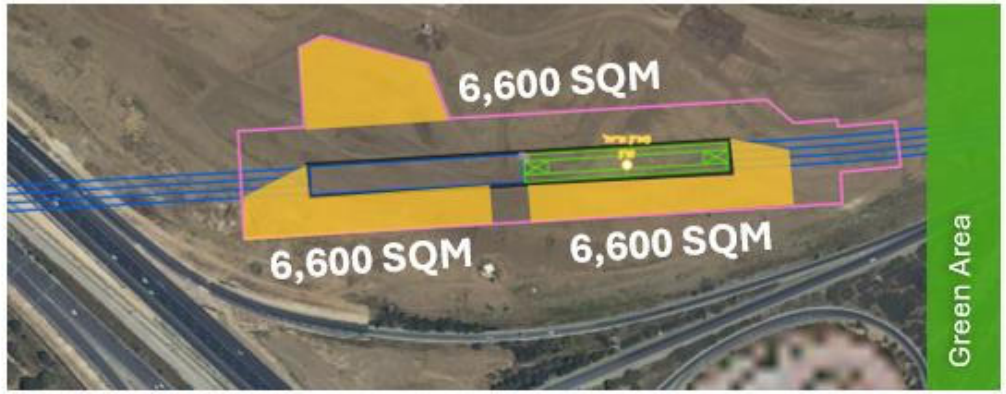


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WP1 INFRA 1

Logistics

Line M3 - Logistics Availability



ARIEL SHARON PARK
Station and Chamber | TBM | Mobilization and Logistic Areas



BIKAT ONO STATION AND CHAMBER
Mobilization Area + Logistic Site



DEPOT TRACK JUNCTION
Mobilization Area

Line M3 - Logistics Availability



SHLOMO HAMELECH STATION & CROSSOVER KIRYAT ONO
Mobilization Areas



YIGAL ALON STATION
Mobilization Areas



TEL HASHOMER HOSPITAL STATION
Mobilization Area

Line M3 - GIS View



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Line M3 - Logistics



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Line M3 - Logistics



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POTENTIAL ”Logistical Hub” being designed at Park Ariel Sharon – Total 690,000 m2



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WP1 INFRA 1

Summary

Line M3 - Summary of Main Features

	Ariel Sharon CO	Ariel Sharon	Track Junction	Bikat Ono CO	Bikat Ono	Yigal Alon	Tel Hashomer Hospital	Shlomo Hamelech CO	Shlomo Hamelech
Station Typology		3 Levels columns			Transfer	3 Levels columns	Grade concourse		3Levels
Outer Box – D-Walls	OB	OB	44 (1.2)/28	OB	OB	OB	44 (1.2)/28	50 (1.5)/33	47 (1.5)/31
TBS				OB	OB	OB			
Dewatering	SP	SP	SP	D-OB	D-OB	D-OB	NoGWC	NoGWC	NoGWC
Temporary Deck								V	V
Temporary Traffic Arrangements	FTD	FTD	FTD	FTD	FTD	FTD	FTD	2 TTA	4 TTA
Contaminated Soil Removal			Suspected			Suspected	V		

LEGEND

OB
Done by OB

DWALLS
Depth, Thickness, Bottom Excavation

CUSTOM

FTD
Full Traffic Diversion

D-OB
Dry after OB

SP
Sump Pump

NoGWC
No Ground Water Control

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Line M3 - Our Primary Objective

Robust WP1 Infra1 Tender that is attractive to bidders, enabled by:

STATION-BOX-FIRST

unlocks TBM advance and optimises project resources

Early Utilities Relocation and Outer Boxes INITIALIZED

faster mobilization, and earlier construction start

LOGISTICS STREAMLINED

greenfield/open-terrain sites with minimal traffic disruption

Possible efforts have been made to optimize the delivery towards success!

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Thank You & Shalom



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INTERNATIONAL PANEL

NTA

MINISTRY OF TRANSPORT AND ROAD SAFETY

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PRE-QUALIFICATION CONFERENCE



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SYSTEMS ENGINEERING, INTEGRATION & ASSURANCE DIRECTOR
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Thank you &
Bon Appétit



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