



U.S. Department of Transportation
Federal Transit Administration

Virtual Trade Mission to Israel

May 17, 2012
11:00 AM – 12:30 PM EST



U.S. Department of Transportation
Federal Transit Administration

Moderator: Jeff Wharton, IMPulse NC LLC, and Chair of the APTA Business
Member International Business Development Subcommittee

VTM Speakers:

Michael Winter, Federal Transit Administration

Alan Wielunski, U.S. Commercial Service, Tel Aviv

Shlomo Katz, Yaki Perlstein, and Nadav Meroz, Ministry of Transport

Itzhak Zuchman, NTA Mass Transit System

Ilan Rozenfeld and Yevgeny Artsev, Israeli National Roads Company



HELPING U.S. COMPANIES EXPORT

U.S.-Israel Commercial Relations



Alan Wielunski, Commercial Specialist, U.S. Embassy Tel Aviv

U.S. Commercial Service



- The U.S. Commercial Service Israel, with offices in Tel Aviv and Jerusalem, is part of the Department of Commerce's worldwide network of approximately 200 offices.
- Our mission is to assist U.S. SMEs' to export their products and services to Israel.
- Our staff are recognized experts in key industry sectors.
- During FY11, we helped U.S. companies generate about 100 export sales to Israel and the West Bank.

Israel at a Glance



Population	8.1 million + 250,000 foreign workers
Population growth rate:	2% vs 1% in USA
Religious Affiliation:	20% “secular” Jews; 55% “traditional” Jews; 17% “religious zionists” and 8% “Haredi” Jews. 16% Muslims. 2% Christian (mostly Arabs) and 1.5 Druze
Official Languages:	Hebrew and Arabic
Government:	Parliamentary Democracy
Year of Independence:	1948
GDP:	About \$241 billion
Per capita GDP	Almost \$31,102
Geography	Crossroad for 3 Continents, Bordering the Mediterranean Sea, between Egypt and Lebanon
Leading Industries	ICT, Pharma , Life sciences, Defense & Aerospace; Water Technologies
Size	Roughly the size of Silicon Valley / Bay Area.

Crossroad for 3 Continents



U.S – Israel Trade Cooperation & Mutual Prosperity



- The U.S.-Israel Free Trade Agreement was signed in 1985, the first FTA for either country.
- Since then, an eight-fold increase in bilateral trade.
- Israel is the US's first or second largest trading partner in the Middle East, and roughly 20th amongst all of our global trading partners.
- In 2011 we traded over US\$37 billion of goods and services, of which \$14.2 billion were exports to Israel and \$23.0 billion imports from Israel.

U.S – Israel Trade Economic Similarities



- There are strong cultural, educational, R&D, investment and tourism ties between the U.S. and Israel.
- Both business environments are driven by innovation and technology.
- U.S. firms are extremely well represented in Israel.

Israel's trading relationships



1985



USA

- As a whole, the EU is Israel's largest trading partner, though the U.S. is the largest single country.

1992



EFTA

- Israel pursues FTAs and international economic cooperation, and joined the OECD in 2010.

1997



Turkey

1997



Canada

- Israel is diversifying its trading relationships with by emphasizing trade with China, Brazil and India.

1999



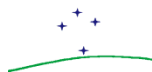
Mexico

2000



European Union
(Association Agreement)

2010



Mercosur

Israel's Economy: Very Strong

Despite the global economic slowdown, Israel's economy has performed very well:

- Israel's banks almost completely avoided CDOs.
- Israel completely isolated from Dubai World.
- Israel's central bank was the first in the world to raise interest rates.
- 2011 GDP growth was 4.7%, and is estimated to fall to 2.8% in 2012.
- Inflation is expected to be 2.2% for 2012.
- The unemployment rate ended 2011 at 5.6%, within a "normal band."
- Government spending within budget, government debt low.
- Personal debt low as well, as banks control credit cards.



Political Environment: Robust & Complex

- Nationally, individuals vote for Party
- Parties: low threshold for joining Knesset
 - high number of parties
 - need for coalition governments
 - outsized influence of right-wing parties
 - shifting coalitions
 - high turnover at Minister and Deputy Minister level
 - excess influence of technocrats
- Independent judiciary, open press, open internet, highly educated population, multi-cultural backgrounds, numerous NGOs, important issues
 - extremely vigorous debate



Business Culture & Practices

(Western with a Twist)

- Comfortable and familiar to Americans, with some key differences:
 - Less formality in speech and dress.
 - More direct, more *chutzpa*.
 - “Fear of being the freier” (sucker).
 - 2 degrees of separation.
- Some positives:
 - English; knowledge of US: 250K US expats, Israel’s #1 trade/FTA partner.
 - Modern banking and logistics systems (ports, airports, roads).
 - Very clean and safe (minimal personal risk); great connectivity.
 - Numerous Free Trade Agreements, including with US.
 - Excellent entry to E. Europe and Africa.
 - \$3.6 billion in trade w/E. Europe; \$1.7 billion w/ Africa.
- Some challenges:
 - High local IP content.
 - Market maturity.
 - Size of market.
 - EU regulatory and business orientation; EU and Asian competition



Why Israel:

Why choose Israel?

- To access Israelis:
 - Perhaps the world's most educated, entrepreneurial, innovative society
 - They will tell you why you're wrong and how you can do it right!
 - Great adapters.
- To know what is going on in key technology sectors:
 - ICT, healthcare, electric vehicles, water, solar, defense and HLS.



- To access Eastern Europe and Africa.
- Natural gas and electricity projects.
- Youth.

Challenges in Israel



- **Demographic:**
 - Arab-Israeli and ultra-religious growing most rapidly, changing the character of the population combined with relatively low educational achievement and economic output with high fiscal costs.
- **Geopolitical:**
 - Constant tensions and risk of flare-up, terrorism and confrontation (that said, US ExIm Bank ranks Israel very low for non-repayment risk.)
- **Fiscal:**
 - Constant pressure to upgrade social services and benefits.
 - Structural, cultural, and legal reasons for concentration of wealth:
 - Nearly half of the market value of publicly-traded companies is controlled by about 20 business groups.
 - Ninety-five percent of the transactions involving controlling shareholders are approved in Israel
 - The people (aka “Tycoons”) who borrow the most money in Israel also control financial institutions responsible for lending the public's money
- **Educational:**
 - Israelis youth ever-worsening in international educational comparisons.



with cost of living leading to huge public protests last summer!



Opportunities for U.S. Companies

- In the last decade, the transport infrastructure investment to GDP ratio more than doubled, from 0.6% to 1.6%. One of the fastest growth rates in the world.
- Annual investment expected to exceed \$3 billion through traditional budgetary resources and public private partnerships (PPP).
- Major financial resources diverted to mass transit transport, at a scale previously unknown in Israel, from some NIS 100 million (about \$25 million) in the late 1990s to a forecasted NIS 7 billion (about \$1.75 billion) in 2015.
- INRC budget for 2011-16 is \$10 billion - primarily for railway and road infrastructure projects.

US-Israel Commercial Relations: Into the Future



- The U.S. and Israel will remain strong business partners.
- The US-Israel business relationship is unaffected by political disagreements.
- Government and private sector cooperation in science, technology, defense, and trade will continue.
- The U.S. Commercial Service Israel will continue working with U.S. businesses and organizations to take advantage of Israel's numerous business opportunities.

U.S. Commercial Service Israel

- **Offices in Tel Aviv and Jerusalem.**
 - 11 staff total.
 - Many visitors.
 - Assists hundreds of U.S. businesses annually.
 - Significant interest to DC.
- **A few words about the West Bank.**
 - Covered by two staff.
 - Small but growing very well.
 - Development critical for future peace.
 - Business leaders very competent.
 - Industries: telecommunications, construction, consumer goods.



Questions?



Alan Wielunski, Commercial Specialist

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www.export.gov/israel

The Public Transport sector in Israel: Major characteristics and main project

December 2010



Israel- general basic characteristics (2009)

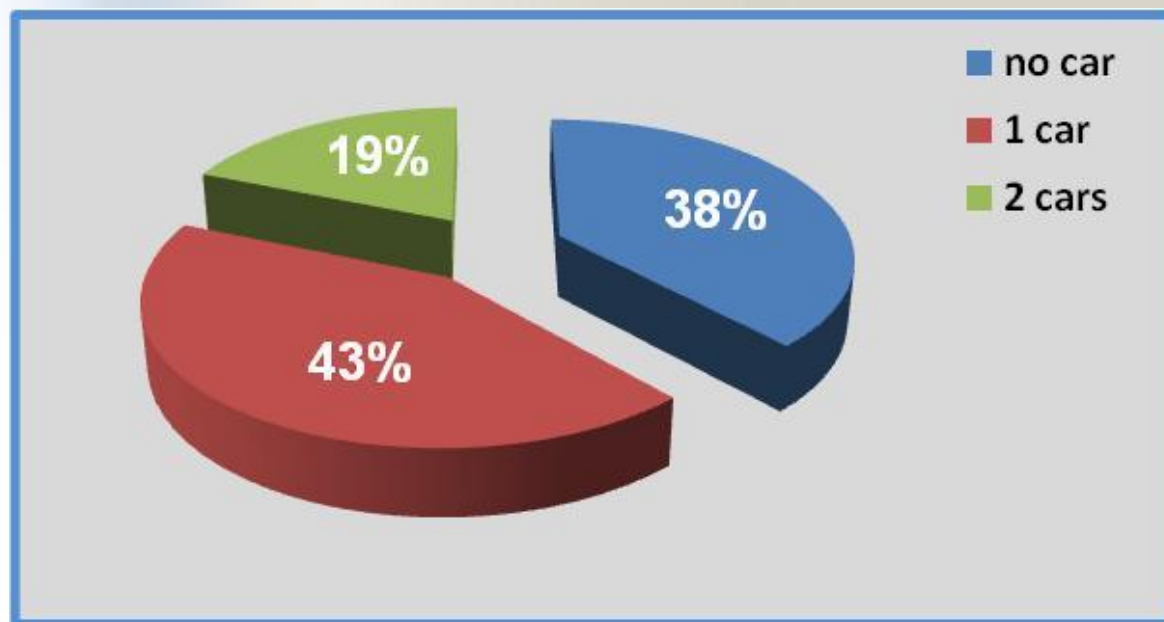
- Area (sqm km)- 21,643
- Population - 7,472.000
- Average annual growth of population- 2%
- Population density (Inh/sqm km)- 345
- No. of cars- 2,459,000
- No. of private cars- 1,947,000 (79% of total)
- Motorization rate (p. cars/ 1,000 Inh.)- 260
- Average annual growth of cars- 3%

Distribution of households by no. of cars (2008)

No car - 38.2%

1 car - 43.0%

2+ cars- 18.8%

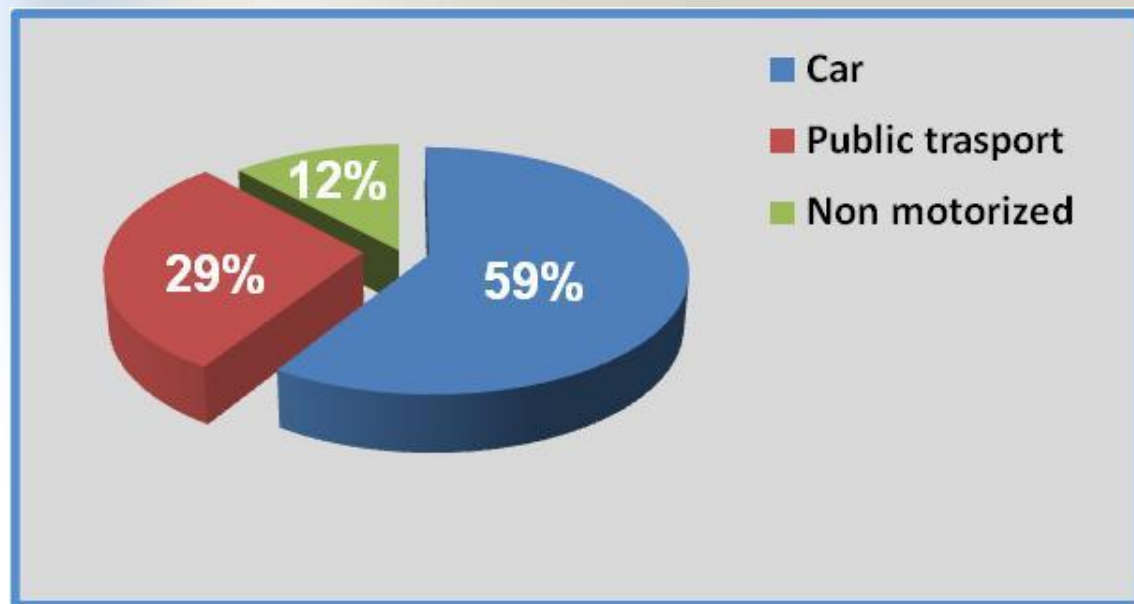


Distribution of trips to work by mode (2008)

Car - 59%

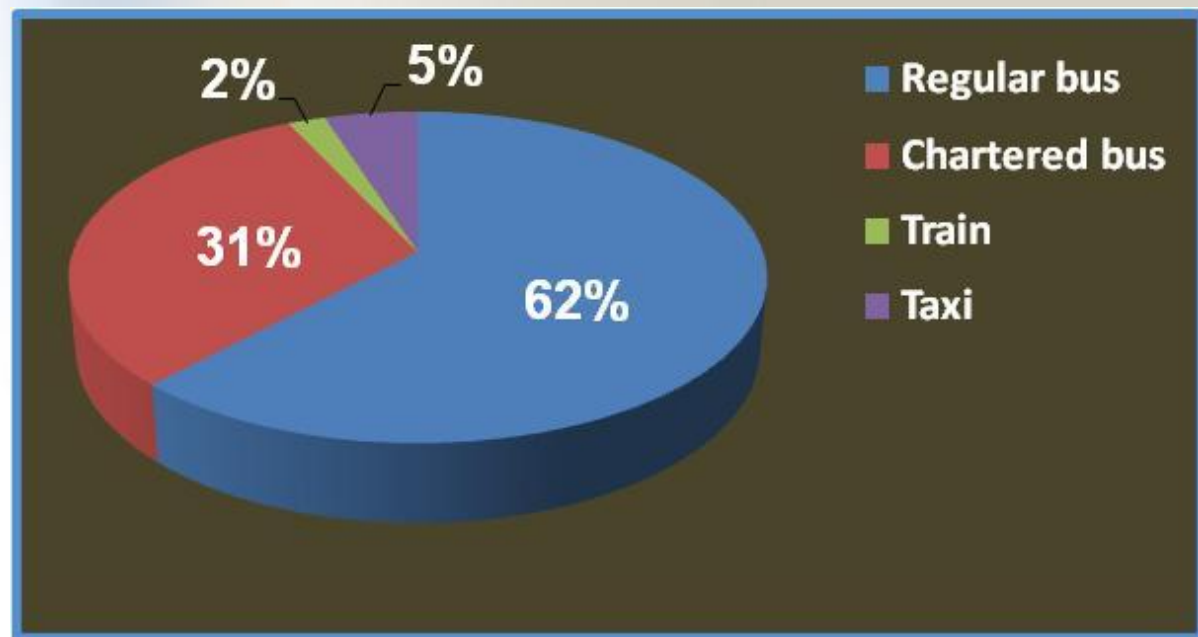
Public transport - 29%

Non motorized - 12%



Distribution of trips to work by Public transport mode (2008)

Regular Bus	- 62%
Chartered bus	- 31%
Train	- 2%
Taxi	- 5%



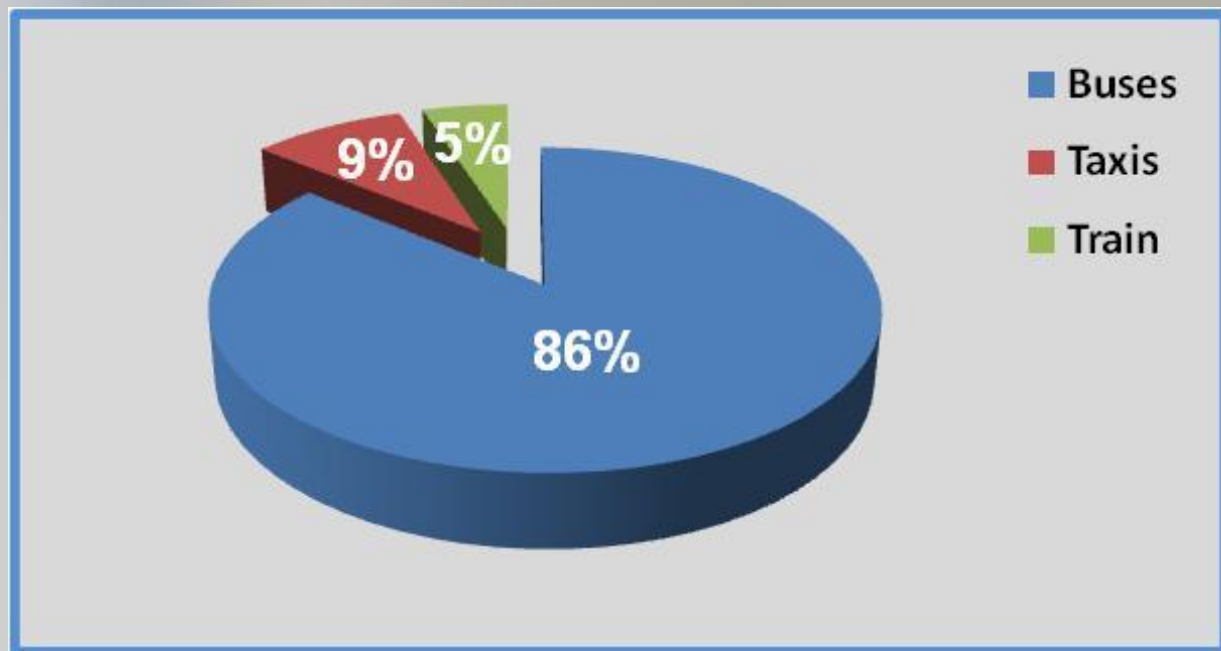
Spatial differences

- Southern district: 66% of area and only 14% of population.
- Population density:
 - Southern district = 73 inh/ sqr km
 - Tel aviv district = 7,073 inh/sqr km

Result: Israel is a very dense country, therefore with high potential for P.T. use.

Distribution of pass. Trips by Public Transport mode (2009)

- Buses - 654.4 million (86%).
- Taxis - 70.0 million (9%).
- Train - 35.9 million (5%).
- **TOTOL - 760.3 MILLION (100%)**



The P.T. sector (buses) in Israel- major macro characteristics (2009)

- # of operators: 16
- # of lines: 1,600
- # of weekly bus trips: 284,000
- # of weekly bus vehicle- km: 6.34 Millions
- # of buses: 5,940
- # of employees: 12,400 (68%= drivers)
- # of yearly pass. Trips 654 Millions (+3.2%)
- Average no. of pass/trip= 40.2
- Total annual income- 4.7 Billion nis (2008)

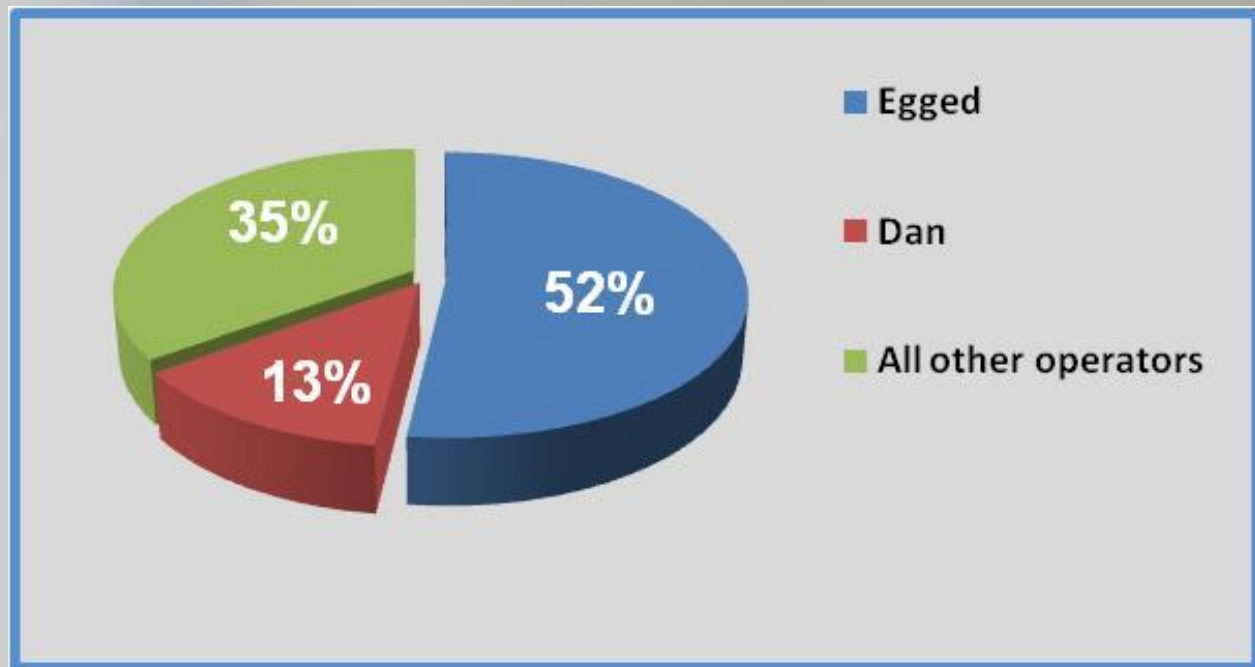
Distribution of total annual income (2008)

Total annual income= 4.7 Billion nis.

- 2.5 B from Pass. Revenue (53%).
- 0.75 B from dedicated subsidy (16%).
- 1.45 B from regular subsidy (31%).

Distribution of vehicle- km by operator (2009)

- Egged= 52%.
- Dan= 13%
- All other operators= 35% (5%- 0.1%).



Distribution of annual pass. Trips by method of payment (2008)

- Regular ticket = 28%.
- Regular passes (10 trips at the cost of 8, elderly, youth) = 32%.
- Monthly pass = 34%.
- Daily/ weekly pass= 6%.

Mass transportation systems



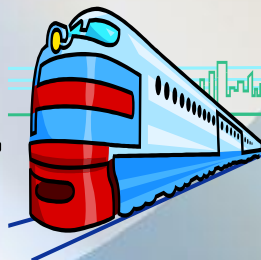
מערכת קווים משלימה



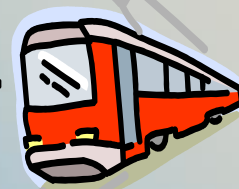
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Haifa Metropolitan area plan for 2015

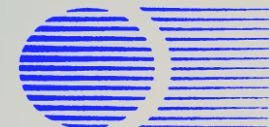
- 3 "Metronit" lines (2012)
- Cable Car
- Reorganization of the city bus net
- Improving the Israeli railways service





משרד התחבורה
והבטיחות בדרכים

Metronit Lines Map



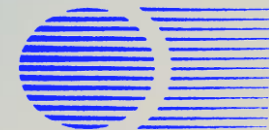
מינהל יבשה



- 3 "BRT" lines
- Right of way
- Priority at traffic lights
- 60 Km route
- 90 Articulated Bus
- Advanced Information Systems
- Effective feeders Lines
- Start run 2012

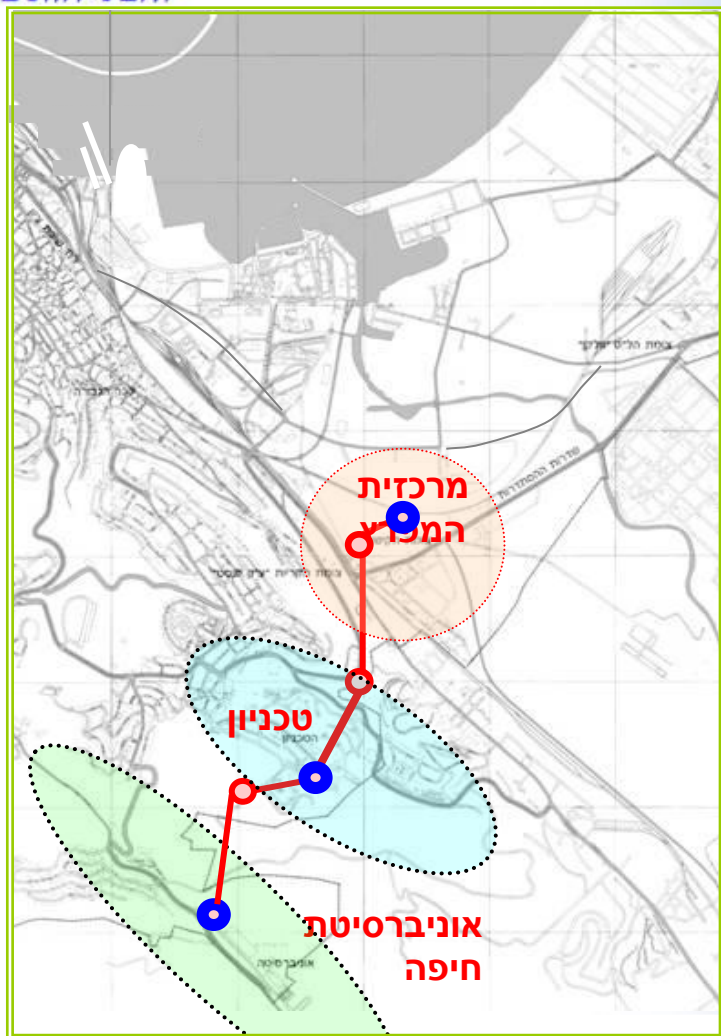


משרד התחבורה
והבטיחות בדרכים



מינהל יבשה

CABLE CAR



פארק הכרמל



Jerusalem Metropolitan area plan

■ LRT LINE

13.8 KM (Pisgat- Zeev – Mt. Herzl)

46 carriages

Capacity 200 passengers per carriage

Start run 2011

■ 6 BRT LINES

140 Articulated buses

Right of way

Advanced Information Systems

Priority at traffic lights

Re - organization of the city bus net

LRT & the Artery lines

קו אוטובוס מזינים

אוקטובר 2004

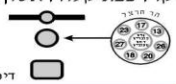


החברה
למערכת
האוטובוס
בירושלים

מערכות ותחבורה ירושלים בע"מ
Jerusalem Transport Systems Ltd
רח' מנחם בגין 10, ירושלים 9100000
טל: 02-5244444, פקס: 02-5244445, דוא"ר: jts@jts.co.il

מקרא

קו רכבת קלה ראשון: פסגת זאב - הר הרצל
קו רכבת קלה + תחנות
תחנות מעבר עיקריות



קו HGB - צפון-דרום

HGB-1 רמות - גילה
HGB-2 רמות - גילה
HGB-4 רמת שלמה - תלפיות מזרח
HGB-5 הר הצופים - קניון ירושלים



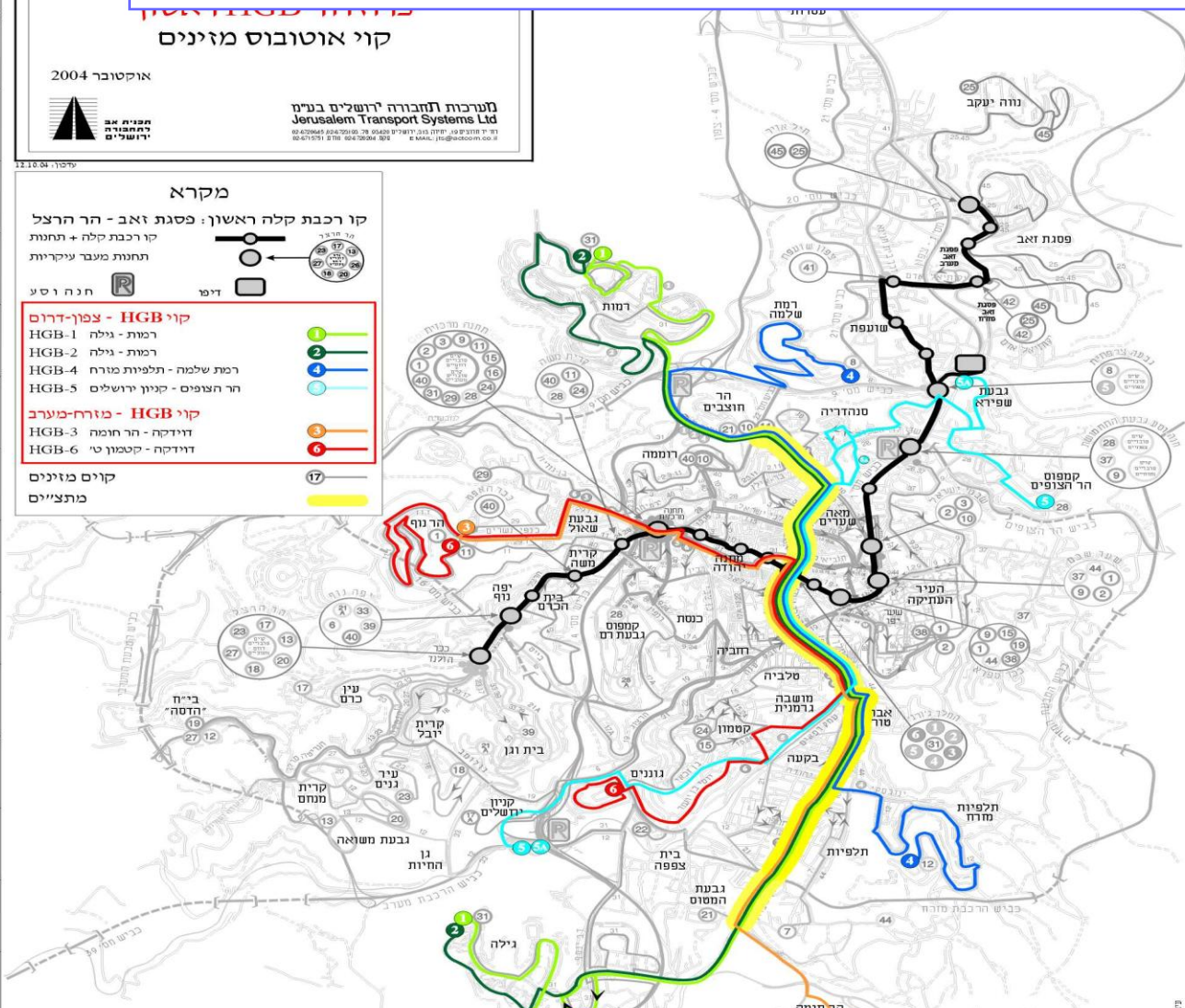
קו HGB - מזרח-מערב

HGB-3 דודקה - הר חומה
HGB-6 דודקה - קטמון ט'



קוים מזינים

מתציינים



LRT

6 Artery Lines

Connection of
populations
concentrations

An exclusive traffic
course

Preference in the cross-
road

A high frequency

Reliability in the service

Environment-friendly

מערכת הסעה המונית ירושלים

תכנית הפעלה ראשונית

קו רכבת קלה ראשון
פרוודור HGB ראשון
קוי אוטובוס מזינים

יולי 2003

1 : 25,000



מערכות ותחבורה ירושלים בע"מ
Jerusalem Transport Systems Ltd
חברת תחבורה ירושלים בע"מ
חברת תחבורה ירושלים בע"מ

מקרא

קו רכבת קלה ראשון: פסגת זאב - הר הצל

קו רכבת קלה + תחנות

תחנות מעבר עיקריות

חנה וסע

קוי HGB - צפון-דרום

HGB-1 רמת - גילה

HGB-2 רמת - גילה

HGB-3 רמת - גילה

HGB-4 רמת - גילה

HGB-5 הר הצופים - קניון ירושלים

קוי HGB - מזרח-מערב

HGB-3 הר הצופים - הר המנוחות

HGB-6 הר המנוחות - הר המנוחות

קוי HGB - מזרח-מערב

קוי HGB - מזרח-מערב

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Complementary lines

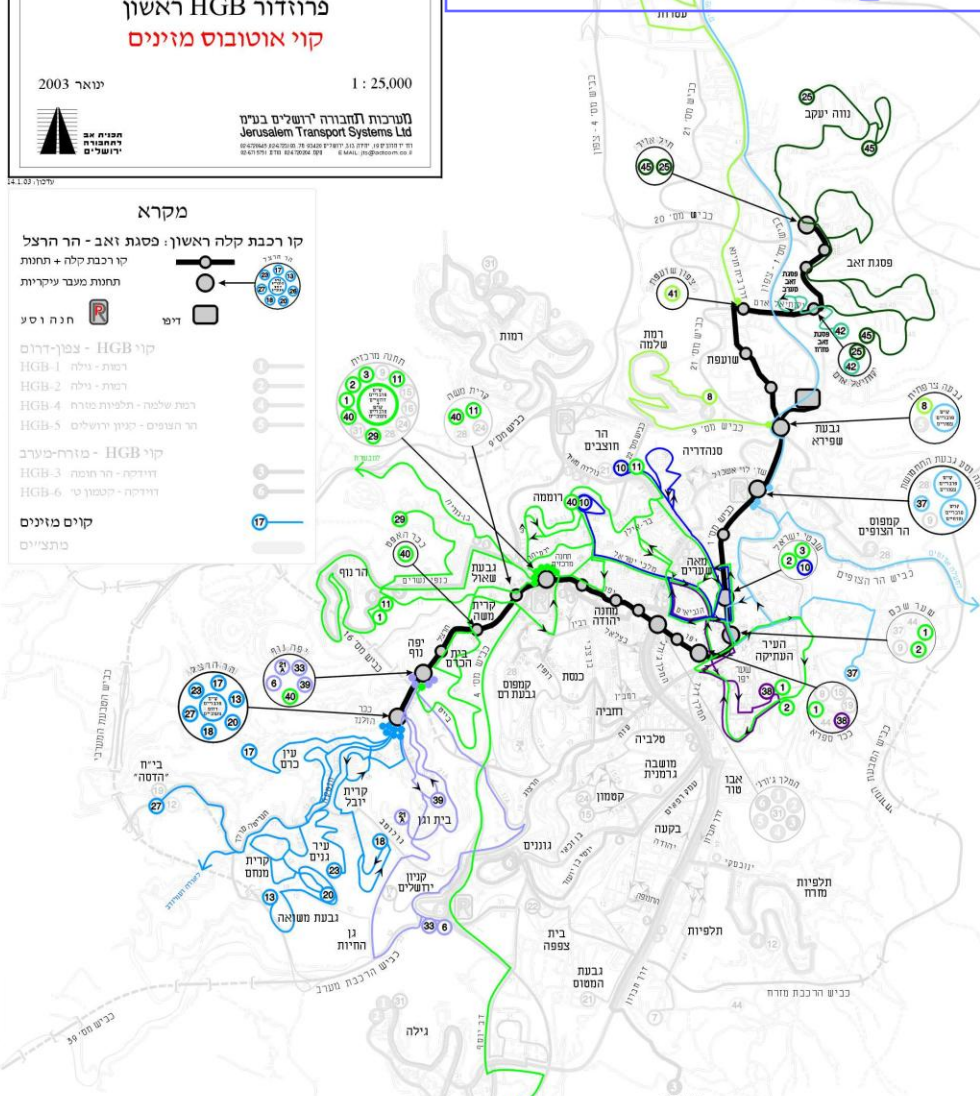
Feeder Lines

20 Minibus / Midibus lines

Local and Short lines

Neighborhoods service

High frequency



מערכת הסעה המונית ירושלים

תכנית הפעלה ראשונית

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תחנות מעבר עיקריות
חנה וסע
דימו

קוי HGB - צפון-דרום
HGB-1 רמת - גילה
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HGB-3 רמת - גילה
HGB-4 רמת - גילה
HGB-5 הר הצופים - תחנות ירושלים
קוי HGB - מזרח-מערב
HGB-3 הר הצופים - תחנות ירושלים
HGB-6 דודקה - תחנות ירושלים

קוי מזוינים
מתציינים



Complementary lines

Other Lines

22 bus lines

Frequency and activation hours
according to demands

Linkage to the LRT & the Artery
lines

ירושלים הקלה בדרך

Jerusalem Metropolitan area plan

2011



1 הקו האדום

הקו הראשון של הרכבת הקלה
אורכו יהיה 13.8 קילומטרים, והוא יחבר בין פסגת זאב לאר הרצל. דרך מרכז העיר. בחודשים הקרובים יסתיימו עבודות להנעת התוואי קילי ונניע תחנת הרכבת הקלה, ויחולו עבודות להנעת המסילה לאורך הקו ויבנו 23 תחנות. בעתיד יוארך הקו ויגיע עד לשכונת נווה יעקב שבמזרח העיר, ועד לכיכר יצחק נבון בדרום מערב. מרכז המפעל והבנקיה יוקם סמוך לכניסה הצפונית.

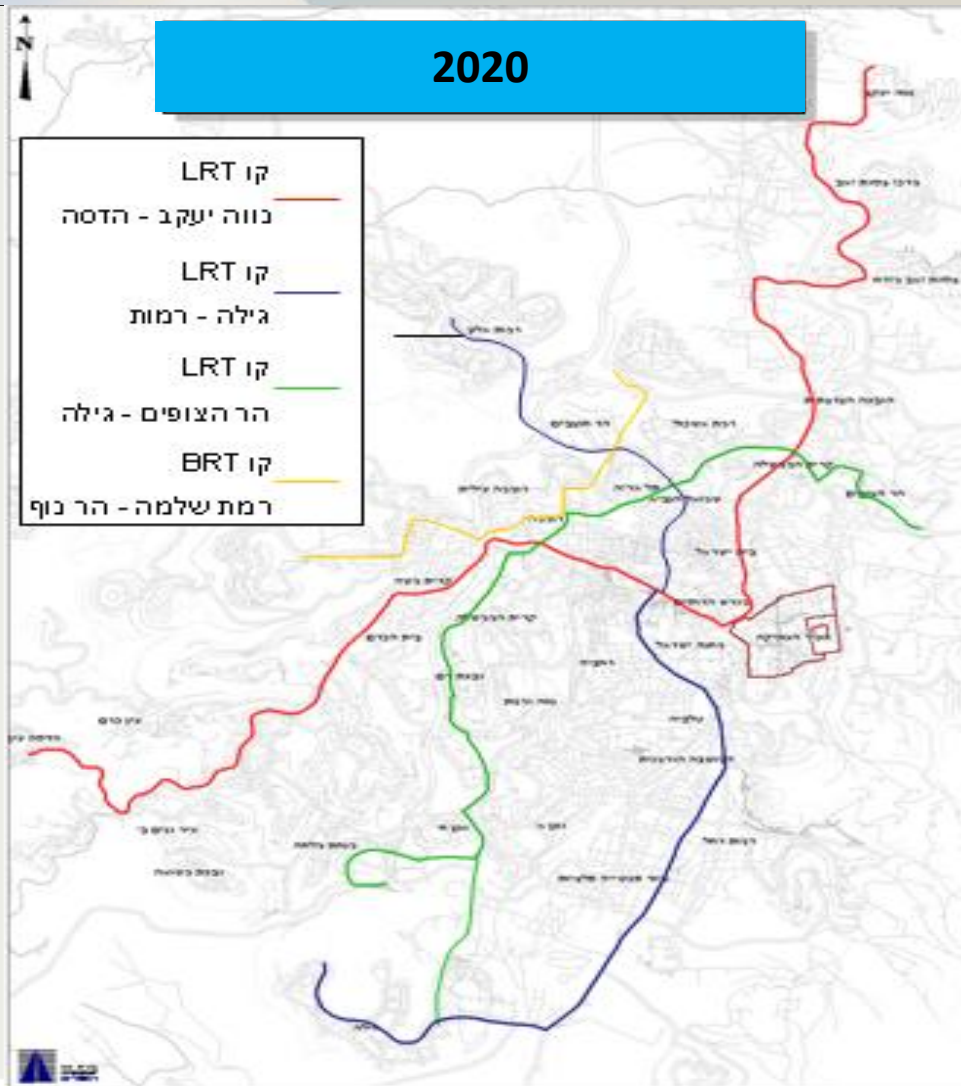


2 הקו הכחול

תוואי לאוטובוסים מתקדמים
הנתיב הבלעדי בו ינועו האוטובוסים המתקדמים יחול באורך של כ-9 קילומטרים. הנתיב יחבר בין רח' הירון כסמך לרח' חומה, עד לרח' חוצות במבואות שכונת רמות. האוטובוסים יסיעו את הנוסעים בתוך השכונות הלה ורמות, אך בפסגות רמת. העבודות להכשרת הנתיב מתבצעות משני הקצוות ברחובות רח' חירון ורח' חומה. העבודות מתבצעות לקראת סיום, ובאזור רח' גולדה ורח' שמואל הנביא חן בשלבים הראשונים. לאורך הנתיב החדש יוקמו 54 תחנות מודרניות הכוללות שלטות שידוע על זמן הנעת האוטובוסים.



2020





מחברת
בדרכים

Tel Aviv Metropolitan area plan 2020



מינה

Development of urban transportation lines

3 light train lines – red, green, and purple

4 BRT lines – blue, yellow, pink, and brown

Development of the Israeli Train

Completion of the rishon le zion line

Road 531 track

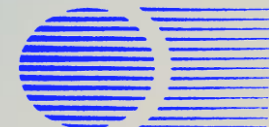
Road 431 track

Fourth track

Re- organization of the bus line system

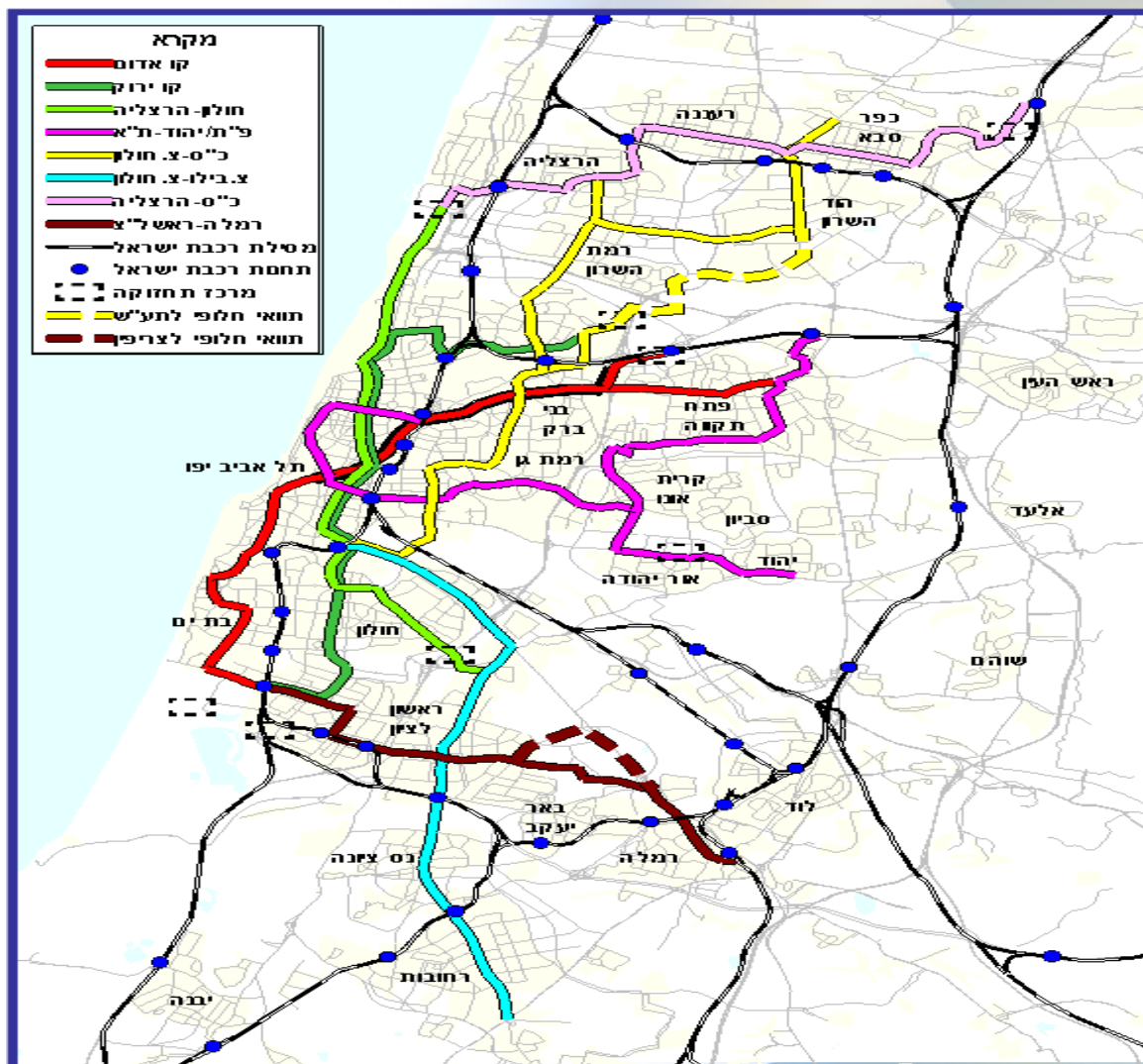


משרד התחבורה
והבטיחות בדרכים



מינהל יבשה

Tel Aviv Metropolitan area plan map



Re-organization Tel Aviv metropolitan

- Plan to ease traffic jams and improve the Tel Aviv metropolitan area transportation
- Creating transverse and horizontal routes service lines, narrowing arterial service lines from 40 to only 18 lines and reinforcing remaining lines
- Main pulse will be carried out in tandem with reform of tariffs in the summer of 2011



משרד התחבורה
והבטיחות בדרכים

Number of line and ports



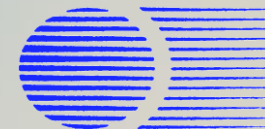
מינהל יבשה

<i>Classification</i>	<i>current</i>		<i>planed</i>	
	<i>trips (two directions)</i>	<i>Number of lines</i>	<i>trips (two directions)</i>	<i>Number of lines</i>
<i>Internal central bloc</i>	460	40	440	18
<i>Urban blocks to</i>	350	57	240	35
<i>Between urban blocks</i>	70	14	70	17
<i>Total</i>	880	111	750	70



משרד התחבורה

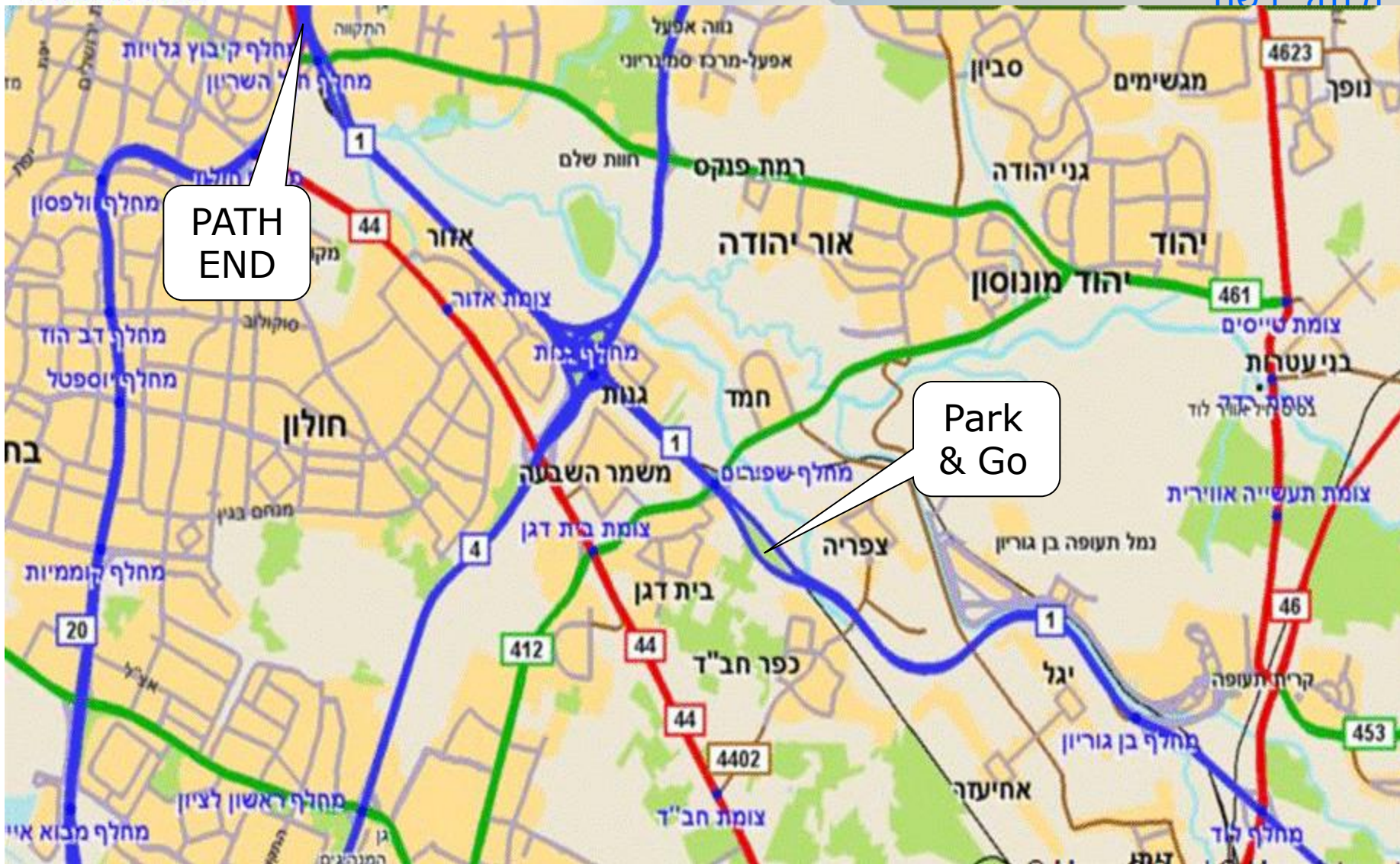
Fast Path project



מינהל ירשה

PATH
END

Park
& Go



Fast Path - Project Description

- the fast path and drive are parked Project goal is to reduce traffic congestion and give priority to public transport between ben gurion airport and kibbutz galoyot Interchange.
- Planned load reduction will be made using the following solutions :
 - Public vehicles ride free in the fast path
 - Establishment of a shuttle ("Shuttle") to Tel Aviv and Ramat Gan. Lines established for the benefit of passengers with 2090 parking free parking places
 - Exemption from payment for vehicles, which bring or collect passenger shuttle
 - Allowing free travel for vehicles with four or more passengers and three passengers at times when less load
- Excess volume of the path, will travel fee for private vehicles using dynamic toll charge.
Must register in advance Subscribe

The end
Thank you



The Tel Aviv Metropolitan Mass Transit System



Tel Aviv Metropolis

1,519 square kilometers: from Netanya in the north to Ashdod in the south, 31 cities, 22 local councils and 12 regional councils.



Tel Aviv Metropolis

Approx. 3,300,000 residents :
44% of the population of the State of Israel.



Tel Aviv Metropolis

3.3% average population growth rate: Approx.
4 million people will reside in the metropolis
in 2020



Tel Aviv Metropolis

43% of all people employed in Israel (approx. One million people) work within the metropolis.



The Vision

NTA promotes a network of lines
for mass transit in the Tel Aviv
Metropolis



As the first stage the first line (the
Red Line) will be established and
will start operating in 2017.



Tel Aviv Metropolitan LRT Network

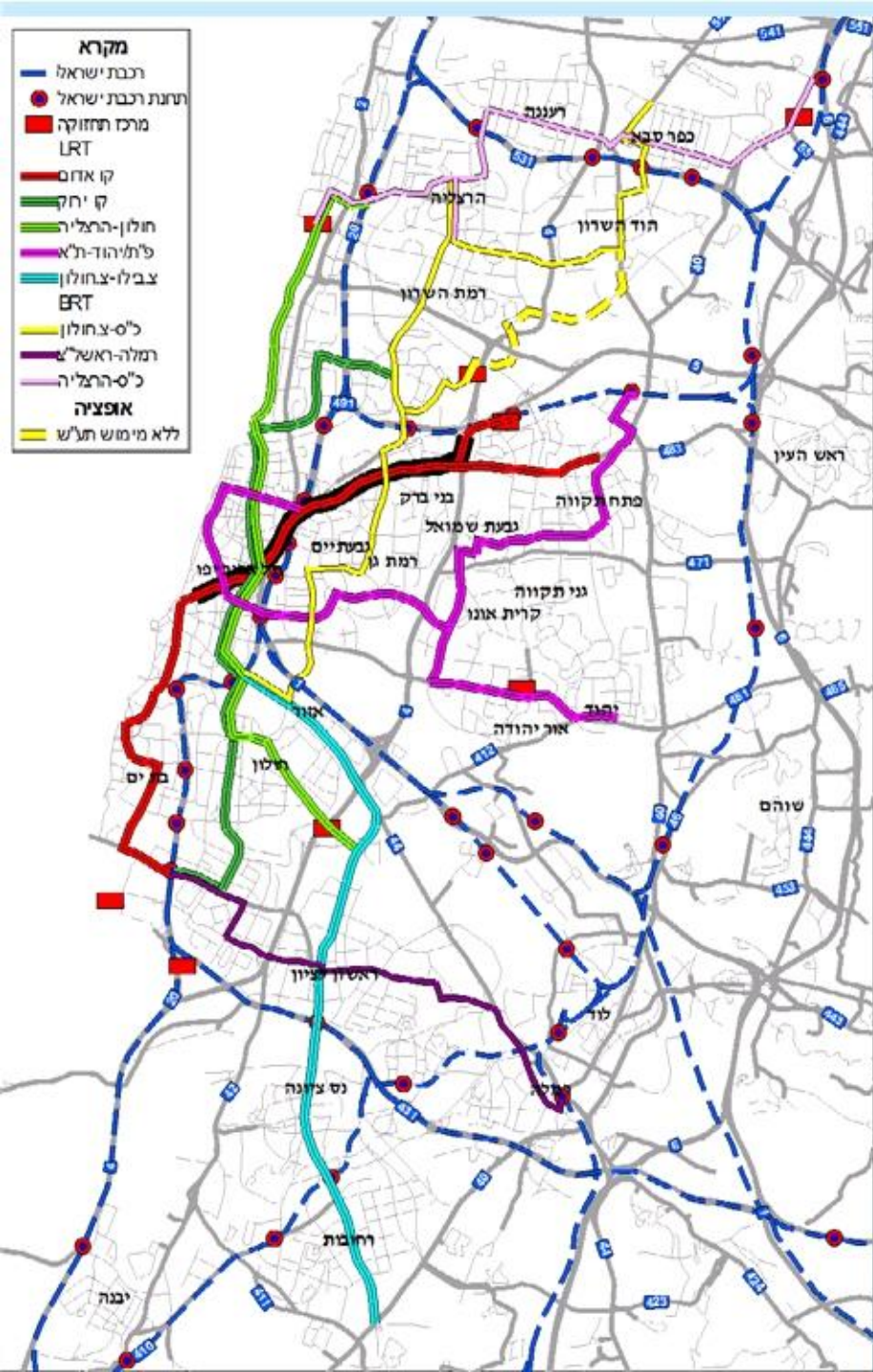
- Red Line**
Bat Yam-Petach Tikva
- Green Line**
Bat Yam-Petach Tikva
- Purple Line**
Yehud/Petach-Tikva-Tel aviv 2000
- Blue Line**
Bilu Interchange-Holon Interchange
- Yellow Line**
Kfar Saba/Herzliya/Atidim-Holon Interchange
- Pink Line**
Kfar Saba-Herzliya
- Brown Line**
Ramla-Rishon Le-Zion (West)
-  **Connection Between LRT Lines**
-  **Israel Rail Line**
-  **Israel Rail Station**
-  **Central Bus Station**



NETA-#233721-v1

Tel Aviv Metropolitan Mass Transit System



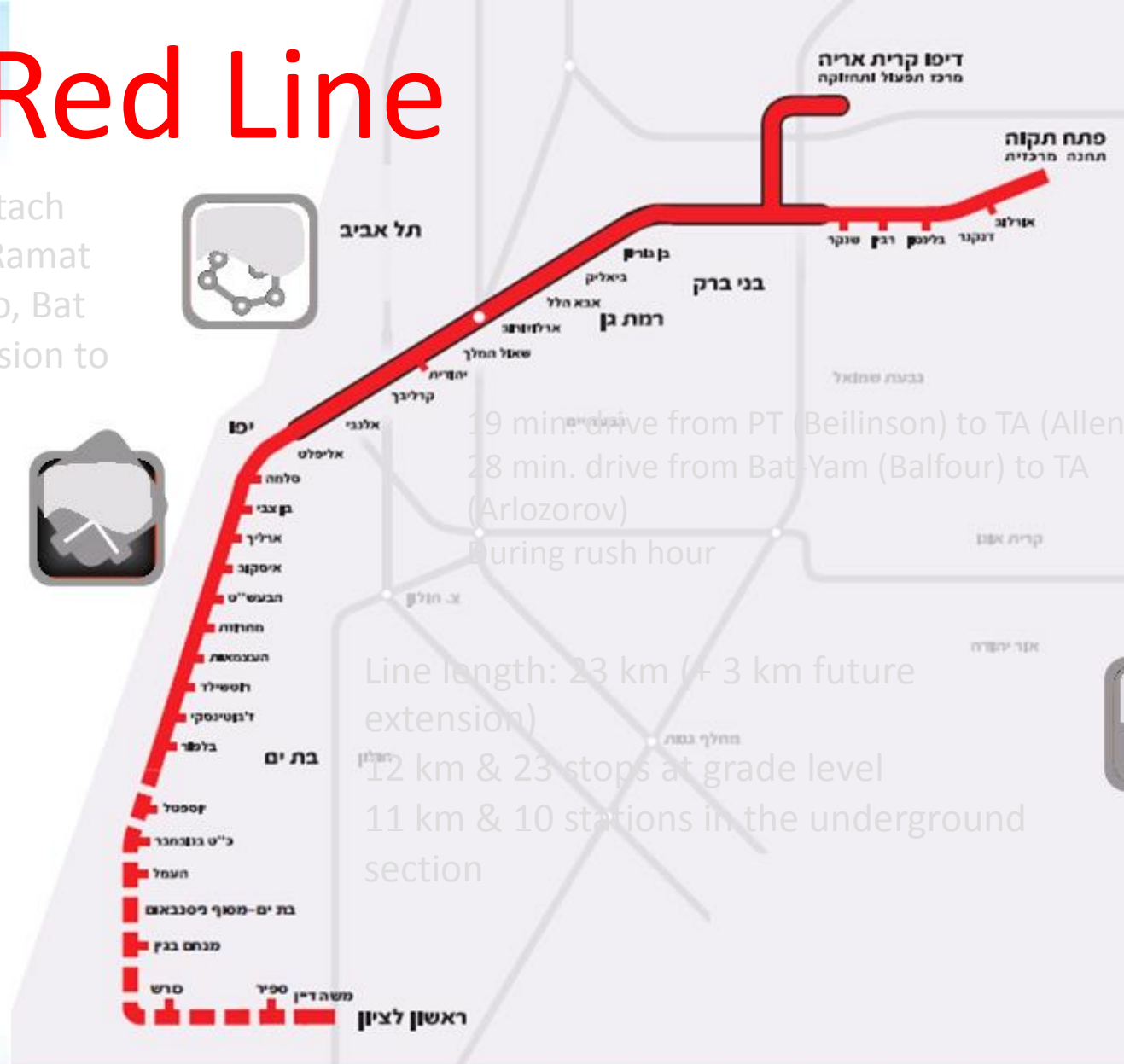


No. of Lines	Total length	No. of Passengers In 2030
7 lines	176 Kilometer	427 Million
No. of Daily Passengers In 2030	No. of Pass. During Rush Hour	% of Citizens Within Walking Distance
1.42 Million	148 Thousand	34.6
% of Work Places Within Walking Distance	% of Additional Commuting by Public Transportation	% of Boarding From Public Transportation
45.3	25.7	38

The Red Line

Serves 5 cities: Petach Tiqva, Bnei Brak, Ramat Gan, Tel Aviv - Yafo, Bat Yam (future extension to Rishon LeZion)

Crosses over 50 intersections



19 min. drive from PT (Beilinson) to TA (Allenby)

28 min. drive from Bat Yam (Balfour) to TA (Arlozorov)

During rush hour

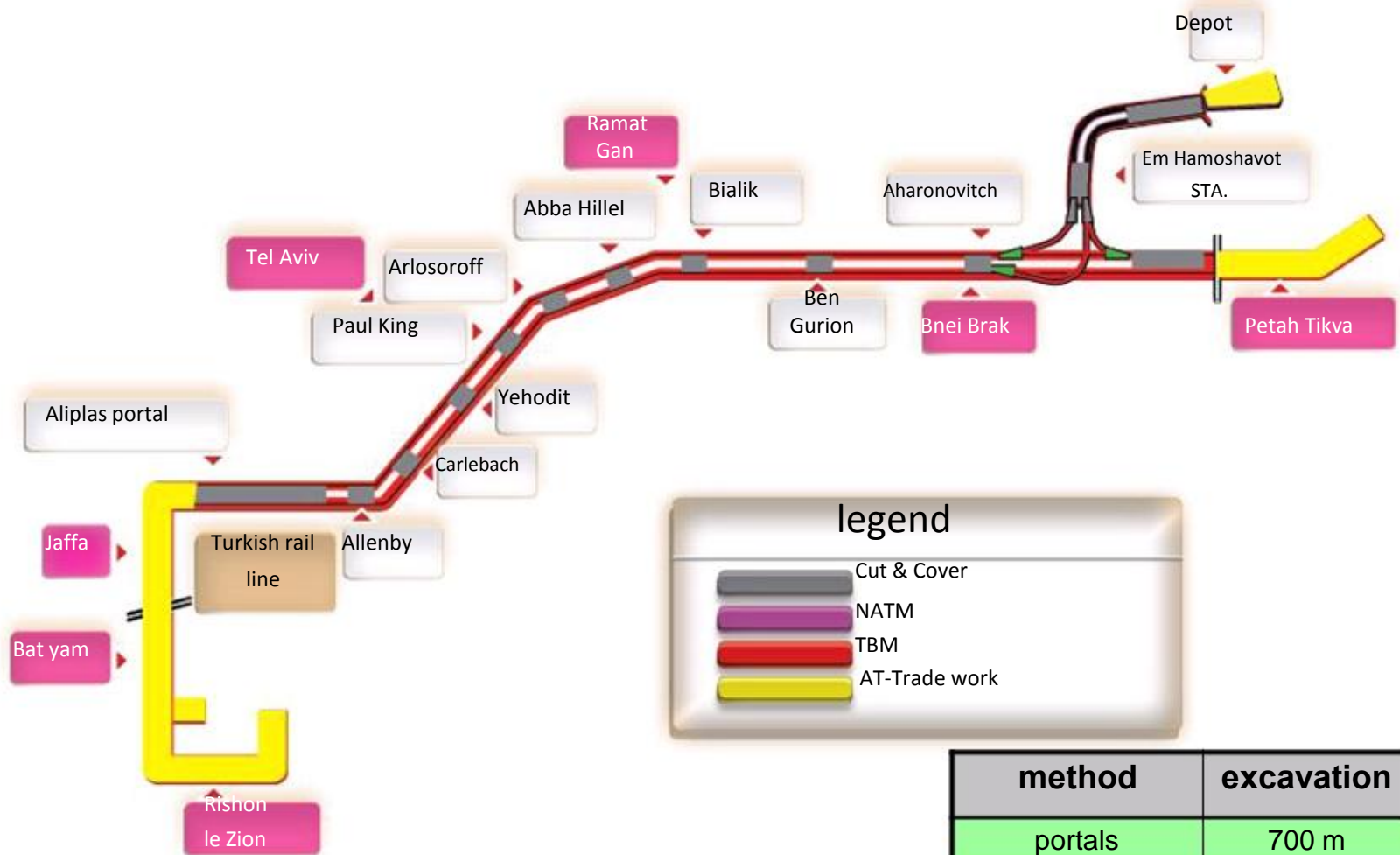
Line length: 23 km (+ 3 km future extension)

12 km & 23 stops at grade level

11 km & 10 stations in the underground section



The Red Line - Execution Methods



method	excavation	ratio
portals	700 m	3 %
c&c	2600 m	12 %
NATM	3500 m	15 %
TBM	16,000 m	70 %



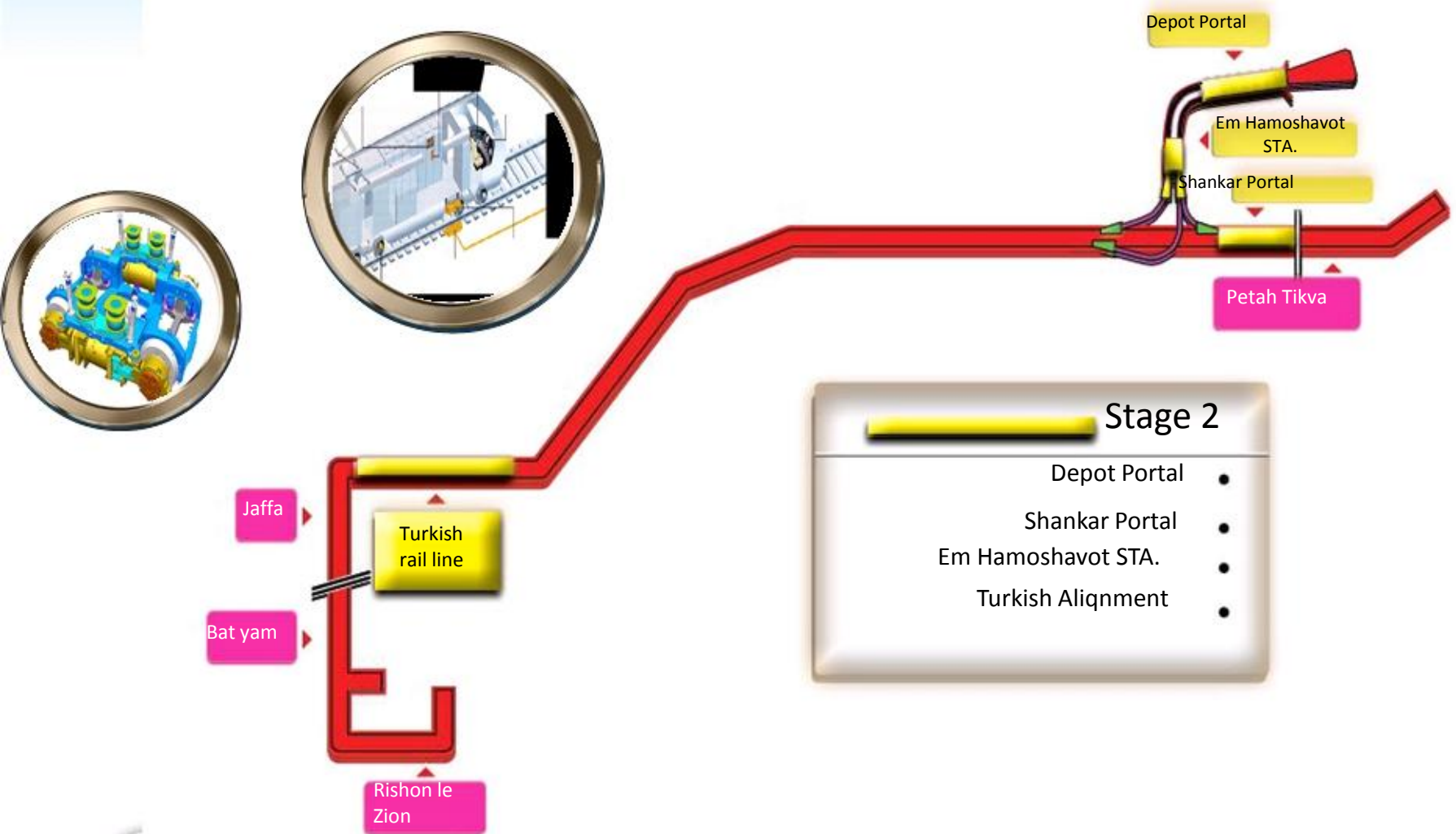
The Red Line - Execution Stages



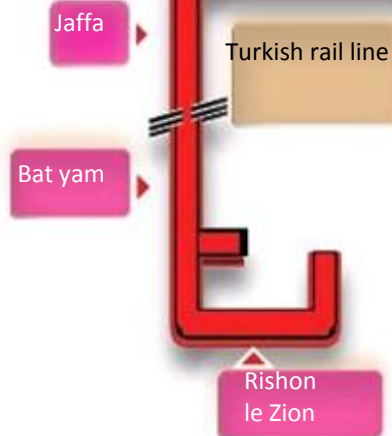
construction of 3 launching shafts for TBM tunnels



construction of BOXES" - 4 cut & "cover structures



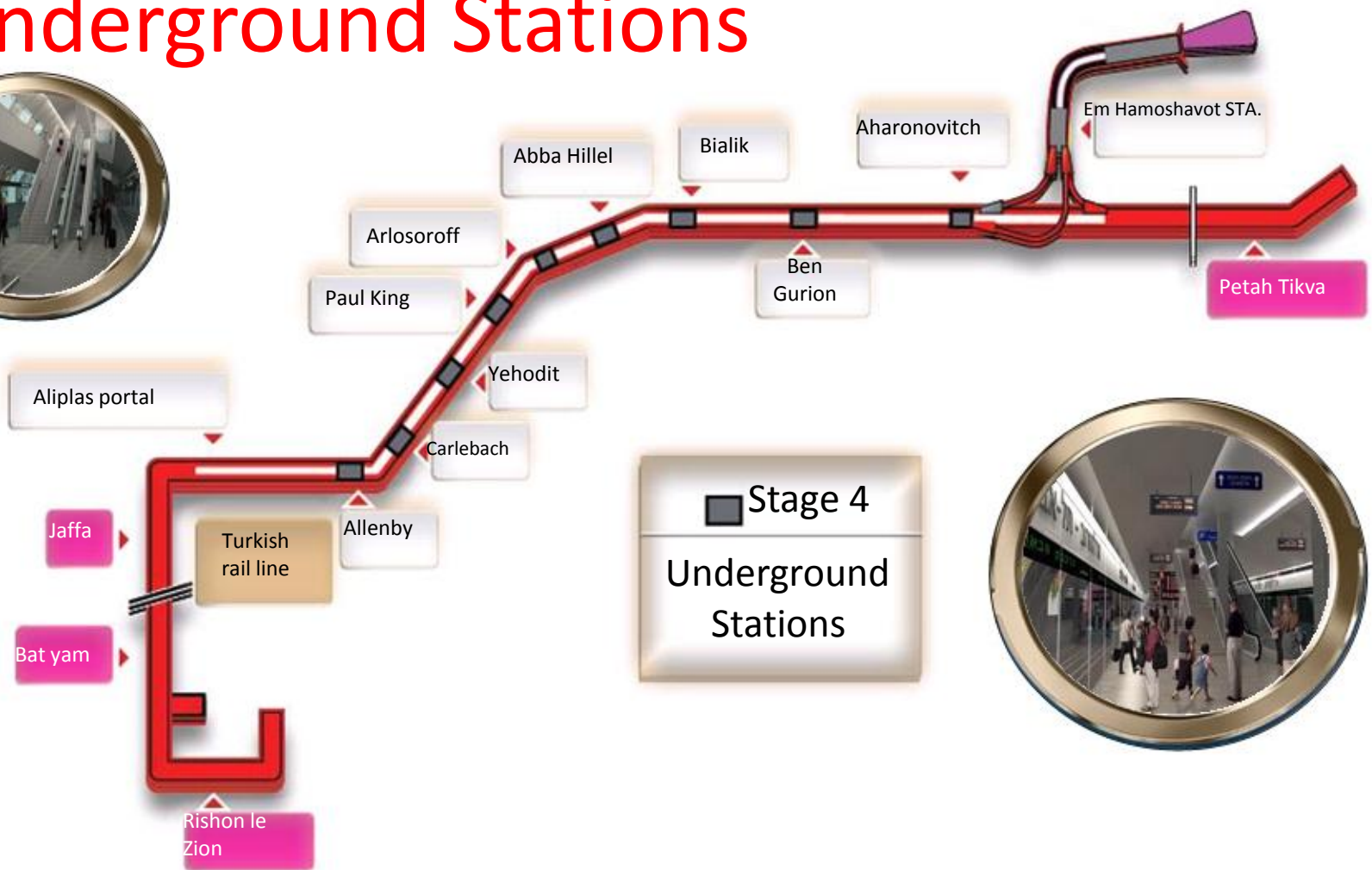
Construction of Tunnels by TBM and NATAM Methods



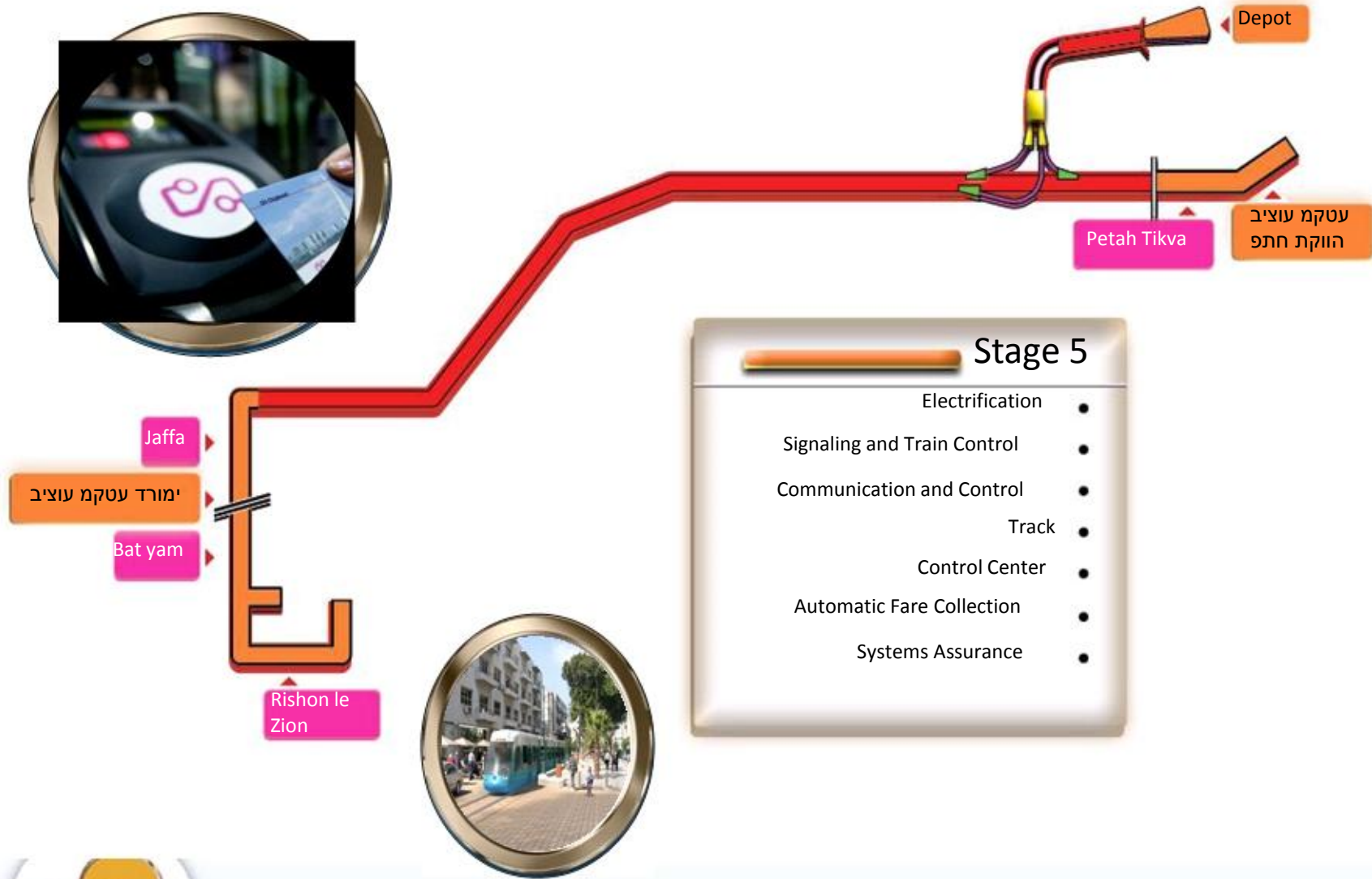
Stage 3
Construction
Tunnels



Underground Stations



construction of the At-Grade sections and Depot



The Red Line - Stage 6

Mobile Equipment



NTA

- NTA was established to find a solution for the congestion problem in the Tel Aviv metropolis.
- We are the company which best specializes in the design of LRT project.
- We have the vast knowledge required for the mass transit systems in Israel and the world.
- Professionals in the field of engineering and infrastructure design which were recently integrated into the company are a significant backbone for the engineering - design aspect.

NTA is set with a plan of action, timetables and estimates for the execution of the project.





Thank you for your attention



The Israel National Roads Company

AKKO – CARMIEL & HAIFA – BET SHEAN – RAILWAY LINES

**WEBINAR – APTA
17.5.2012**

Presentation Topics

- **INRC – Introduction**
- **Scope of Work – Next International Tender**
- **Akko – Carmiel Line**
- **Haifa – Bet Shean Line**
- **Schedule**



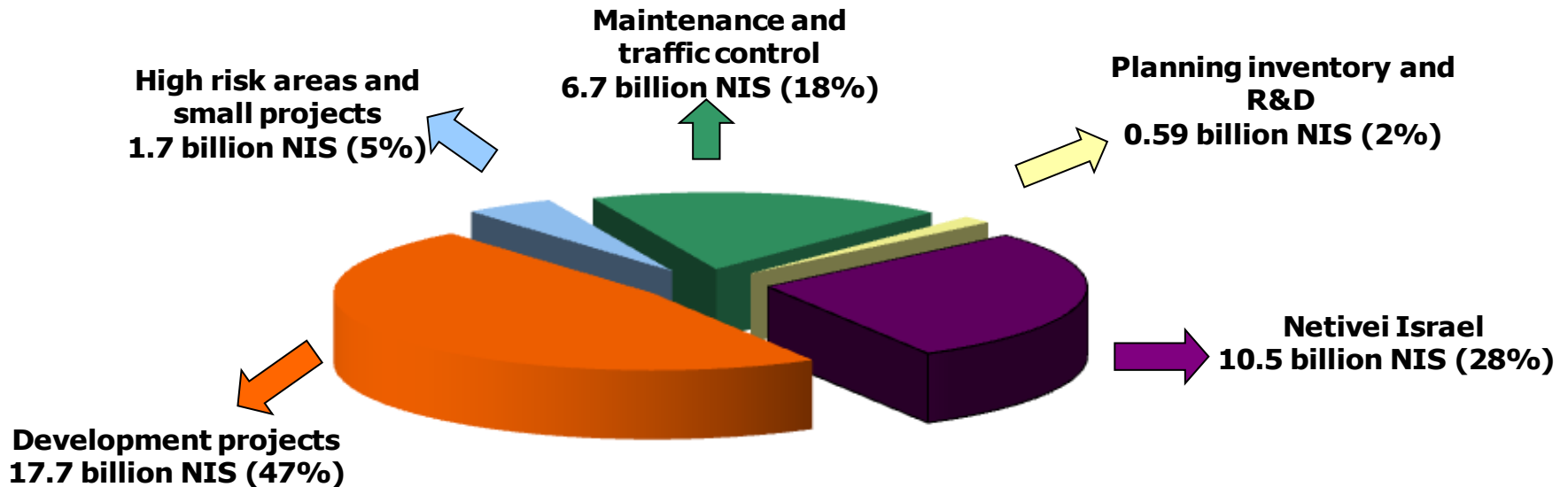
INRC - INTRODUCTION



Israeli National Roads Company

Perennial Plan Distribution

(2011-2016)

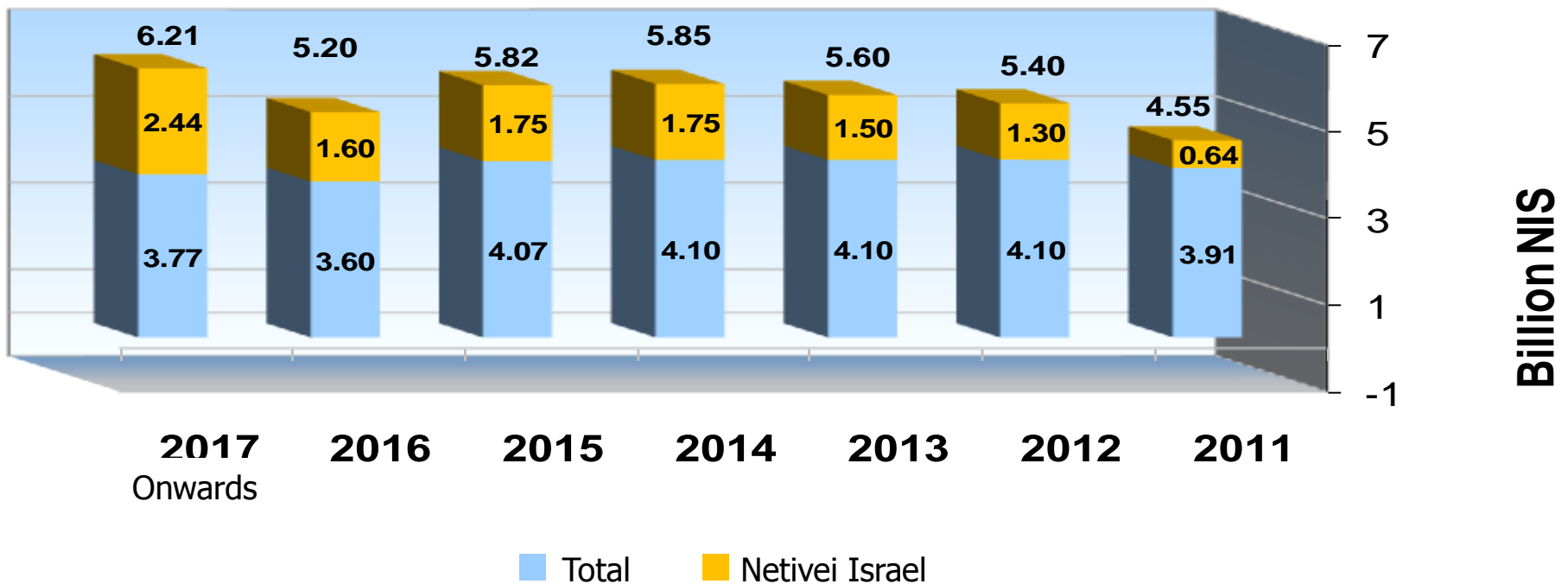


Total investment – 37.3 billion NIS



Cash Flow Forecast

(Billion of NIS)



Connecting the peripheral regions to the center and improving access to employment centers

The Revadim (Layers) plan is the vision that guides the company's activities

- **Upper layer** – a central roads grid comprised of 4 north-south roads and 16 east-west roads, creating a crisscrossing grid
- **Secondary layer** – regional roads connecting residential and employment regions to the upper layer



Development Plan

Annual expenditure in 2011-2016 of 9.7 billion NIS in cash

22 projects will commence ➡ 14 billion NIS

35 projects will be completed ➡ 9.7 billion NIS

Payments to 431 franchiser ➡ 0.9 billion NIS



Development Plan Figures

61 level crossings / interchanges

Widening 191 road Km.

52 Km. of new roads



Netivei Israel

In February 2010, the Government approved the Netivei Israel plan, with a budget of 27.5 billion NIS

Israel National Roads Company is responsible for planning and implementation of projects totaling 10.55 billion NIS



Netivei Israel Projects for Implementation

Ha'emek Railway

A new passenger and cargo railway, 58 Km. long, from Haifa to Beit Shaan. **Estimated project cost – 4 billion NIS**

Acre – Carmiel Railway

A new railway, 22 Km. long, connecting the coastal railway with Carmiel, for passengers and cargo. **Estimated project cost – 2.8 billion NIS**

High Speed line to Eilat

A new railway, 270 Km. long, connecting Be'er Sheva to Eilat. **Estimated project cost – 20 billion NIS**

Simulation



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Roads



6,050
Paved Km.



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Interchanges



74



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Junctions



2,000



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Bridges & Tunnels



1,100



Israeli National Roads Company

INRC → ISR

- **Under Government decision from 2010, INRC is in charge for the development of the new Railway Lines**
- **The design and construction is coordinated with ISR**
- **After completing the project – T&C will be conducted with ISR until full approval and Handover**



Scope of Work – Next tender

- **Superstructure for 2 new railway lines**
- **Communication systems work**
- **Energy building and technical rooms in Gilon Tunnels**
- **Tunnel Systems**
- **Work Bases**
- **Coordination with electrification and signaling**



Estimated Quantities

- **Ballast – 350,000 tons**
- **Sleepers – 160,000 units**
- **Rail Bars – 220,000 meters**
- **Turnouts – 26 units**
- **Slab Track in Gilon Tunnels – 10,000 meters**



Material Standards

- **Ballast – ISR Specifications**
- **Sleepers – B70 with modifications to fix Rails U50, UIC 54, UIC 60 for 1.435 m gauge and with Vossloh fastening**
- **Rail Bars – 60 E2 quality of 900 N/mm² – 260/350 HT**
- **Turnouts – Cogifer – Vossloh (1:8, 1:9, 1:12, 1:20 , 2:20)**
- **Cables – Fiber Optic and Copper Cables**

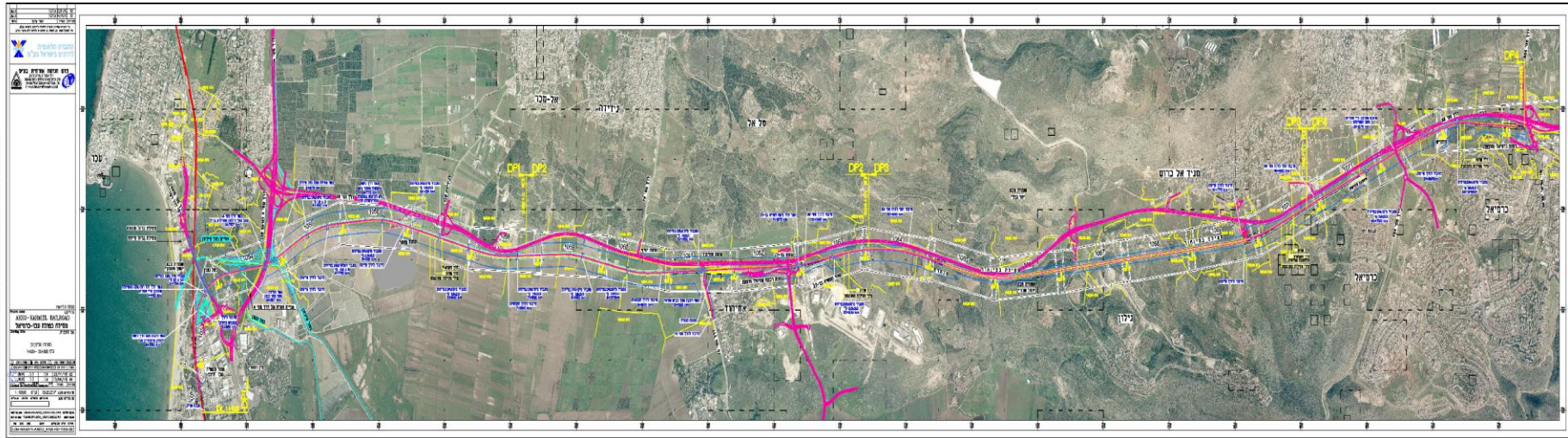


Akko – Carmiel Line

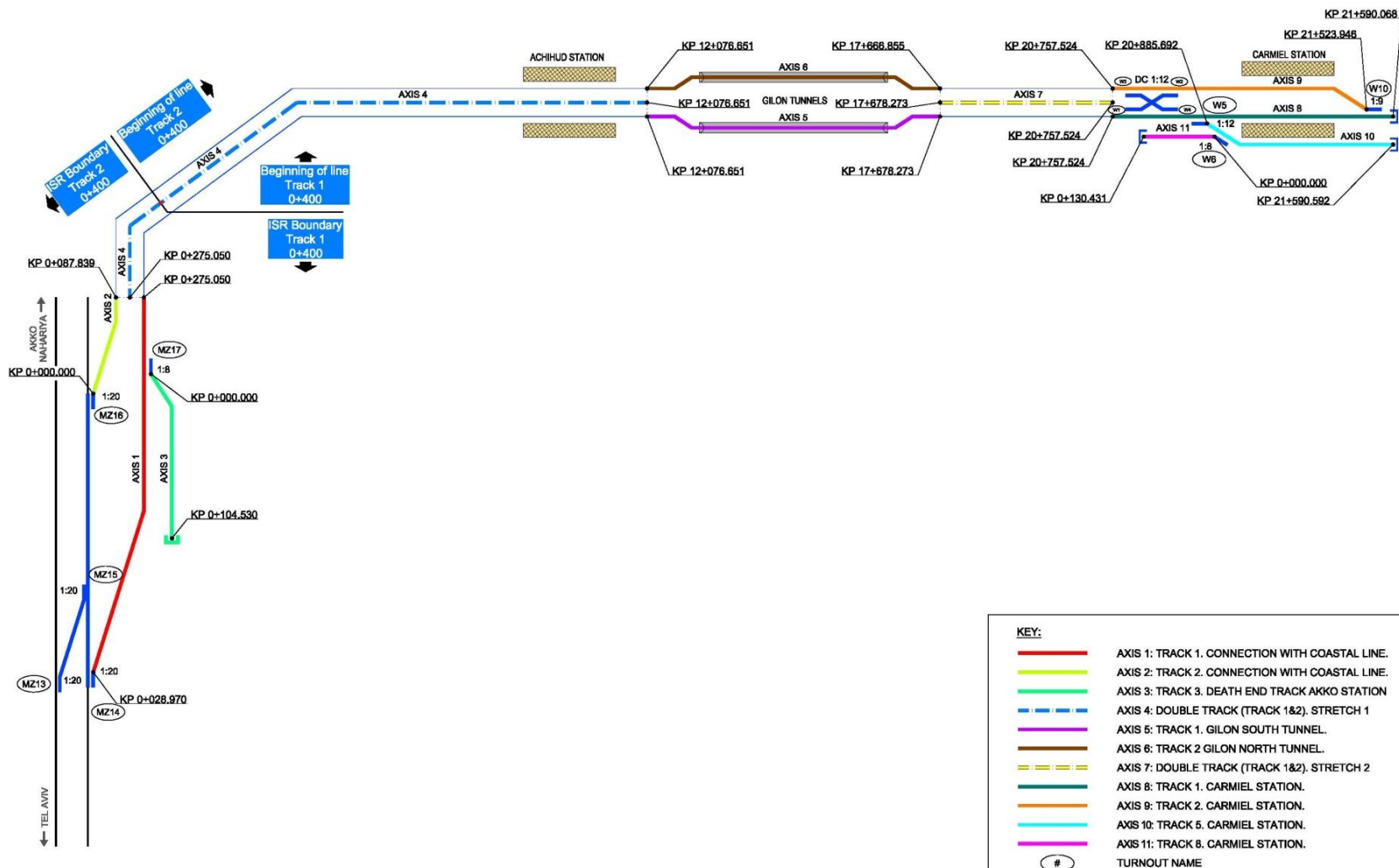
- **22 KM Electrified double track line**
- **Connecting the Coastal line east to Carmiel city**
- **4.650 KM double tunnel with Slab Tracks**
- **Bridges**
- **2 Passenger Stations**
- **Work Base**



AKKO – CARMIEL - LAYOUT

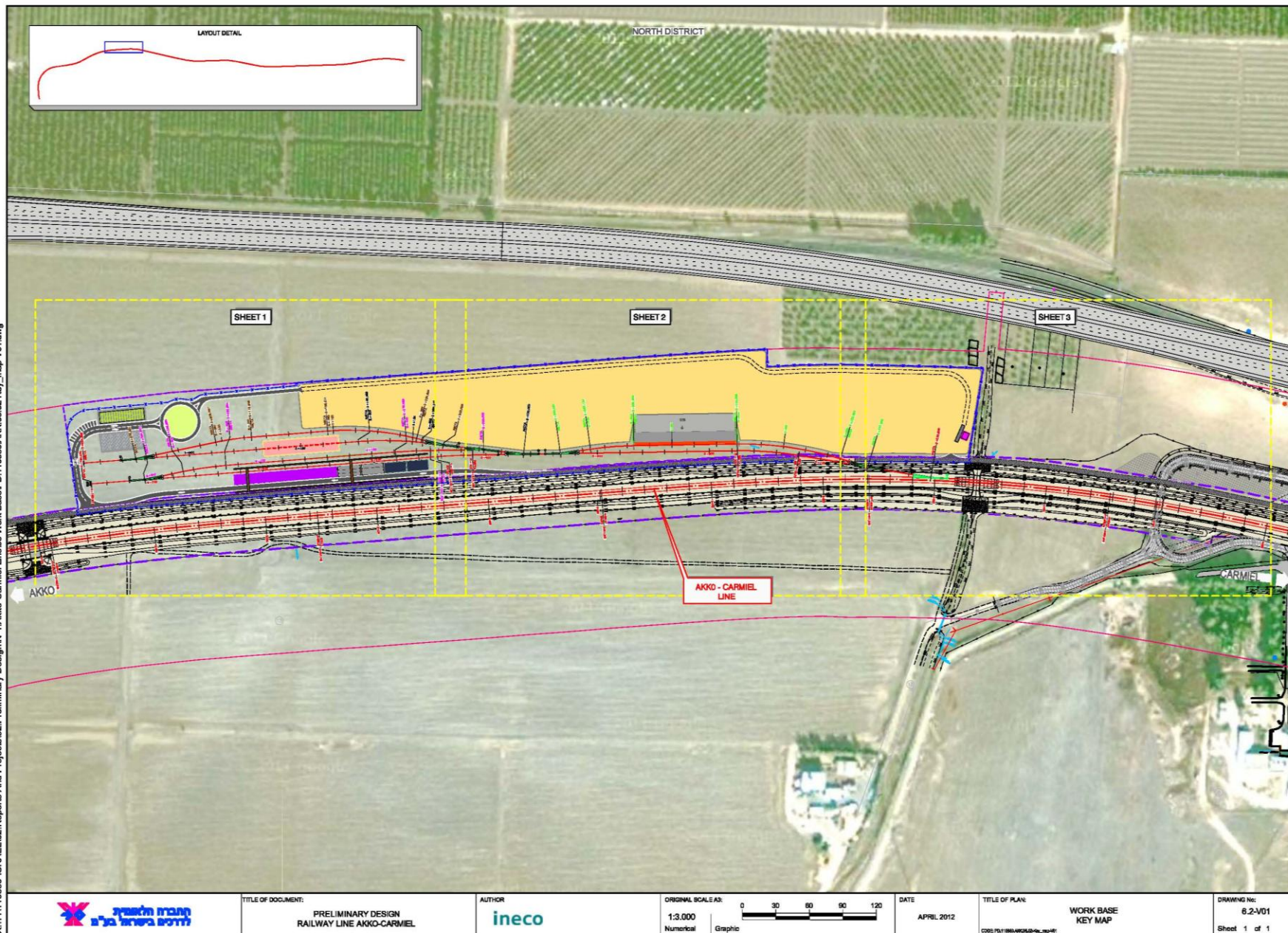


Israeli National Roads Company



DESIGNER	DATE
APPROVED	
REVIEWED	
DESIGNED	
PROJECT	

X:\111\0860-ISRAEL\02-Reports And Projects\02-Preliminary Design\N1-Akko-Carmiel Line\06-Work Base\PD.110860_AKKO_08.02-Key_map-V01.dwg



TITLE OF DOCUMENT:
PRELIMINARY DESIGN
RAILWAY LINE AKKO-CARMIEL

AUTHOR
ineco

ORIGINAL SCALE AS:
1:3,000
Numerical

Graphic

DATE
APRIL 2012

TITLE OF PLAN
WORK BASE
KEY MAP

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DRAWING No.
6.2-V01
Sheet 1 of 1

Gilon Tunnels

- **The digging will be done by other**
- **Energy Building and Technical Rooms**
- **Power Supply work**
- **Ventilation**
- **Air conditioning**
- **Communication systems**
- **Safety systems**
- **Drainage**
- **Water systems**



XS111110880-18FAE122 Reports And Projects/D1 Preliminary Report/202-Atto-Centel Limited/25-Original Typical Section Tunnel/Any



SLAB TRACK

4 Approved methods for SLAB TRACK:

RHEDA

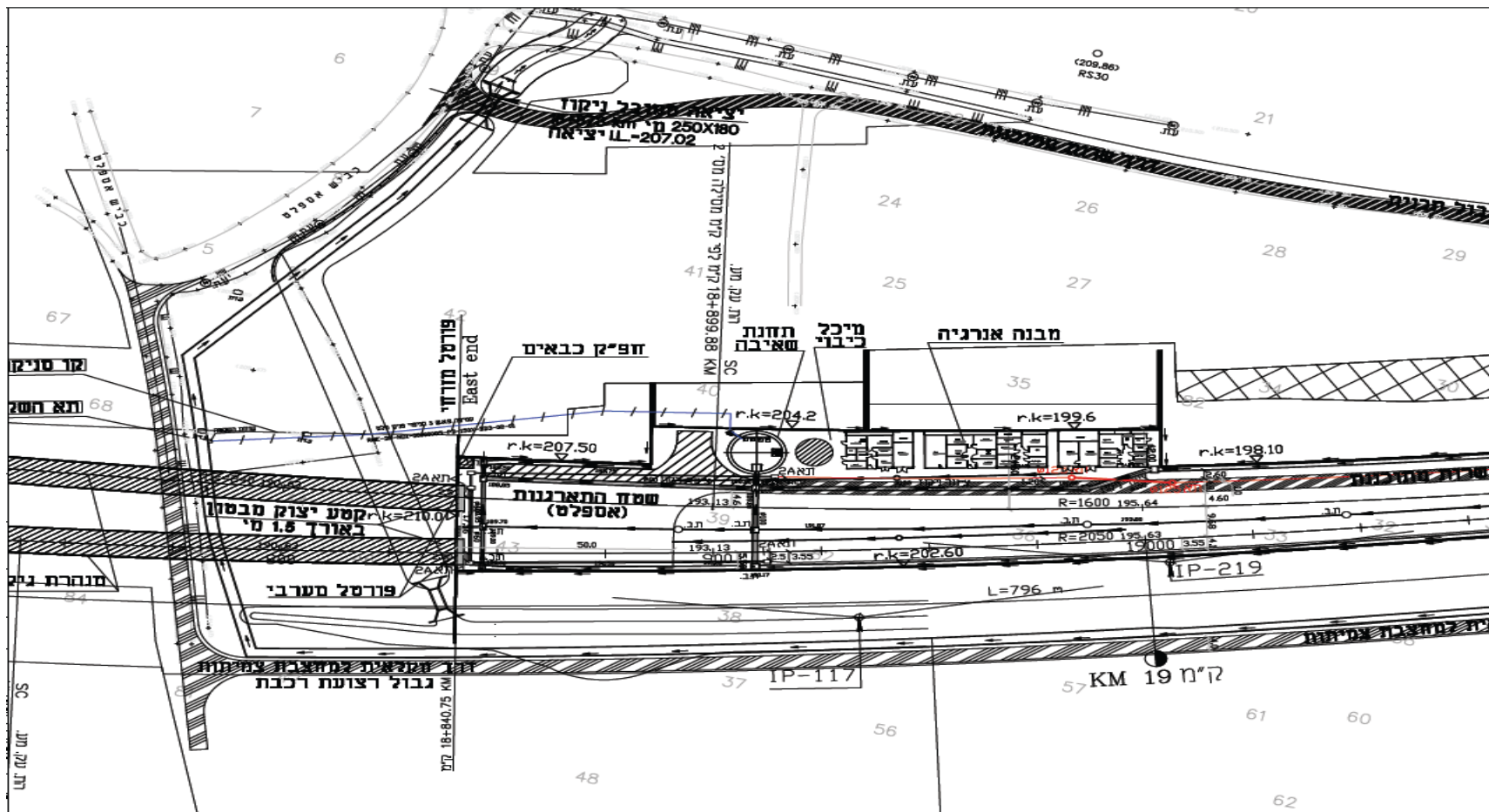
ZUBLIN

BOGHEL

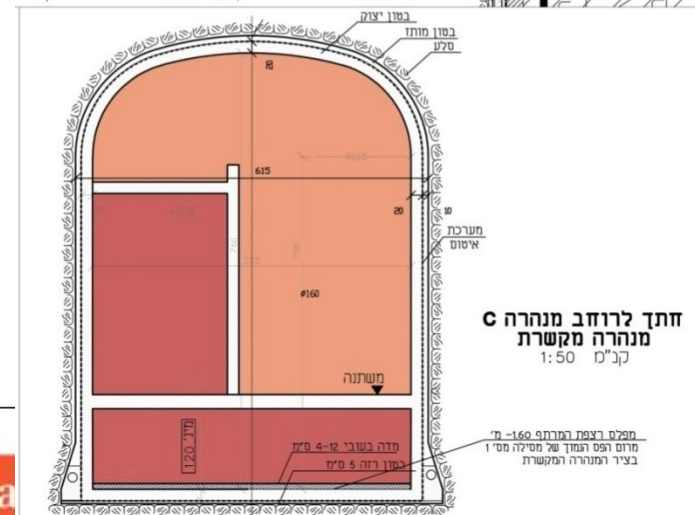
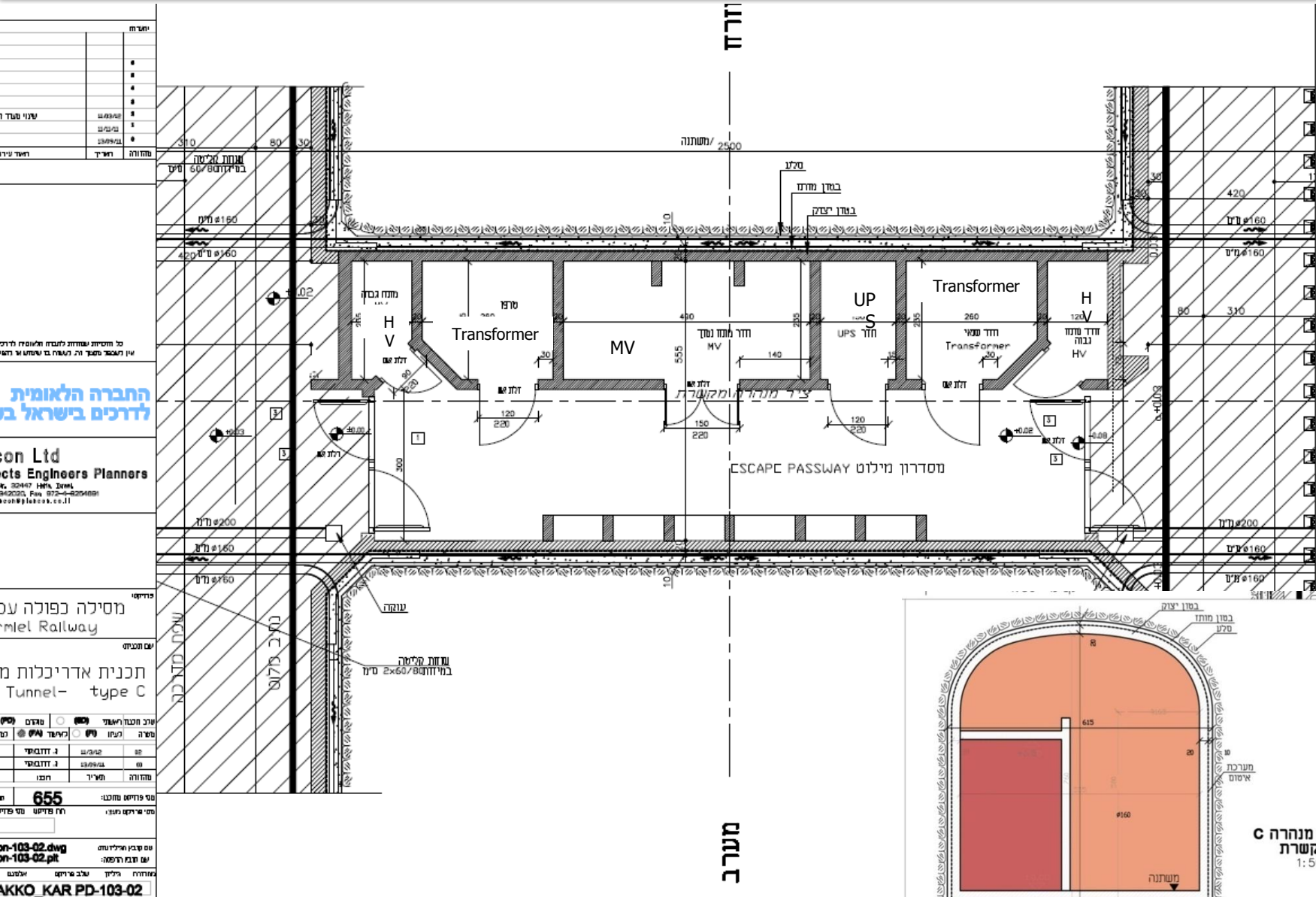
LVT



GILON TUNNEL – EAST PORTAL



Escape Tunnel Type C

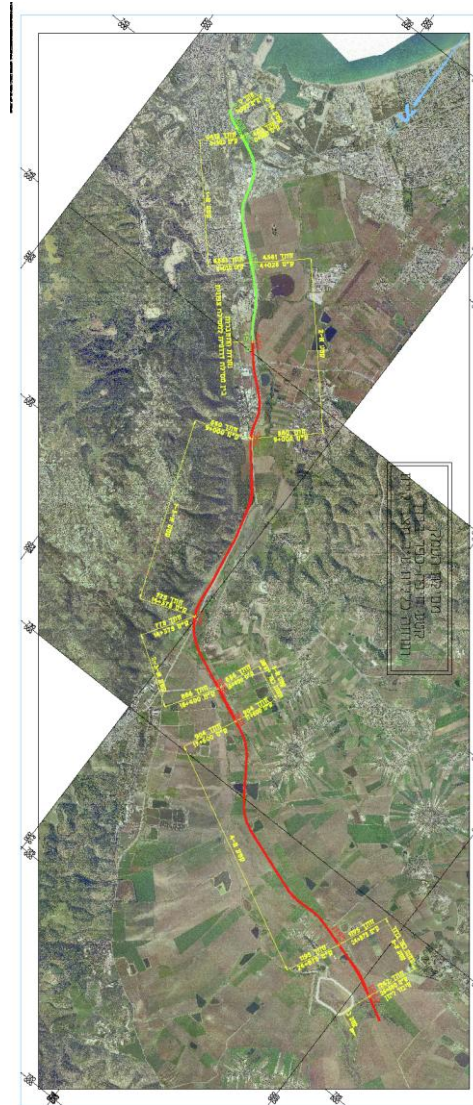


Haifa – Bet Shean Line

- **58 KM Single Track Line**
- **Connecting the city Haifa east to Bet Shean**
- **3 tunnels of 300 m each**
- **Bridges**
- **5 Passenger Stations**
- **Work Base**

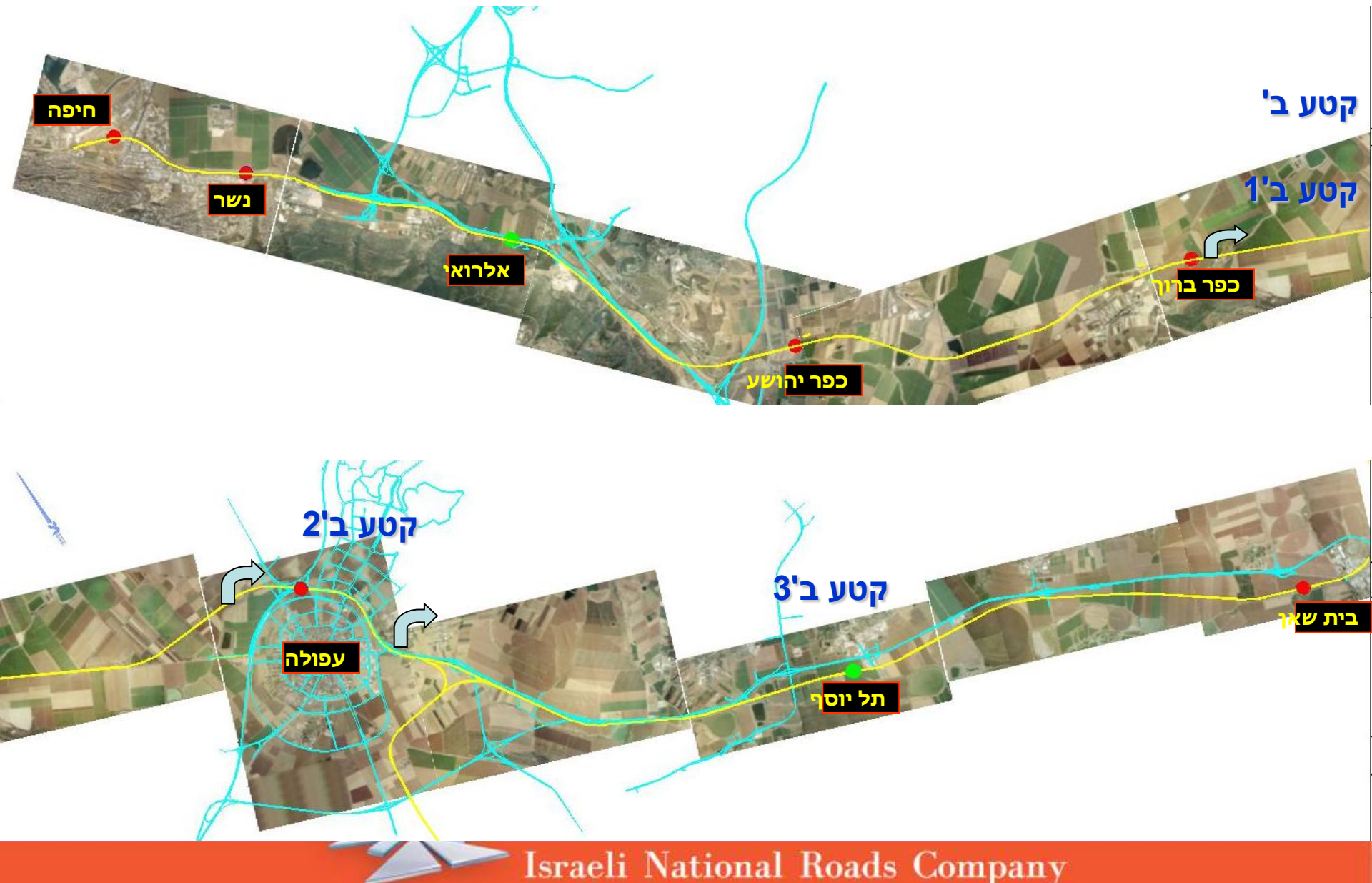


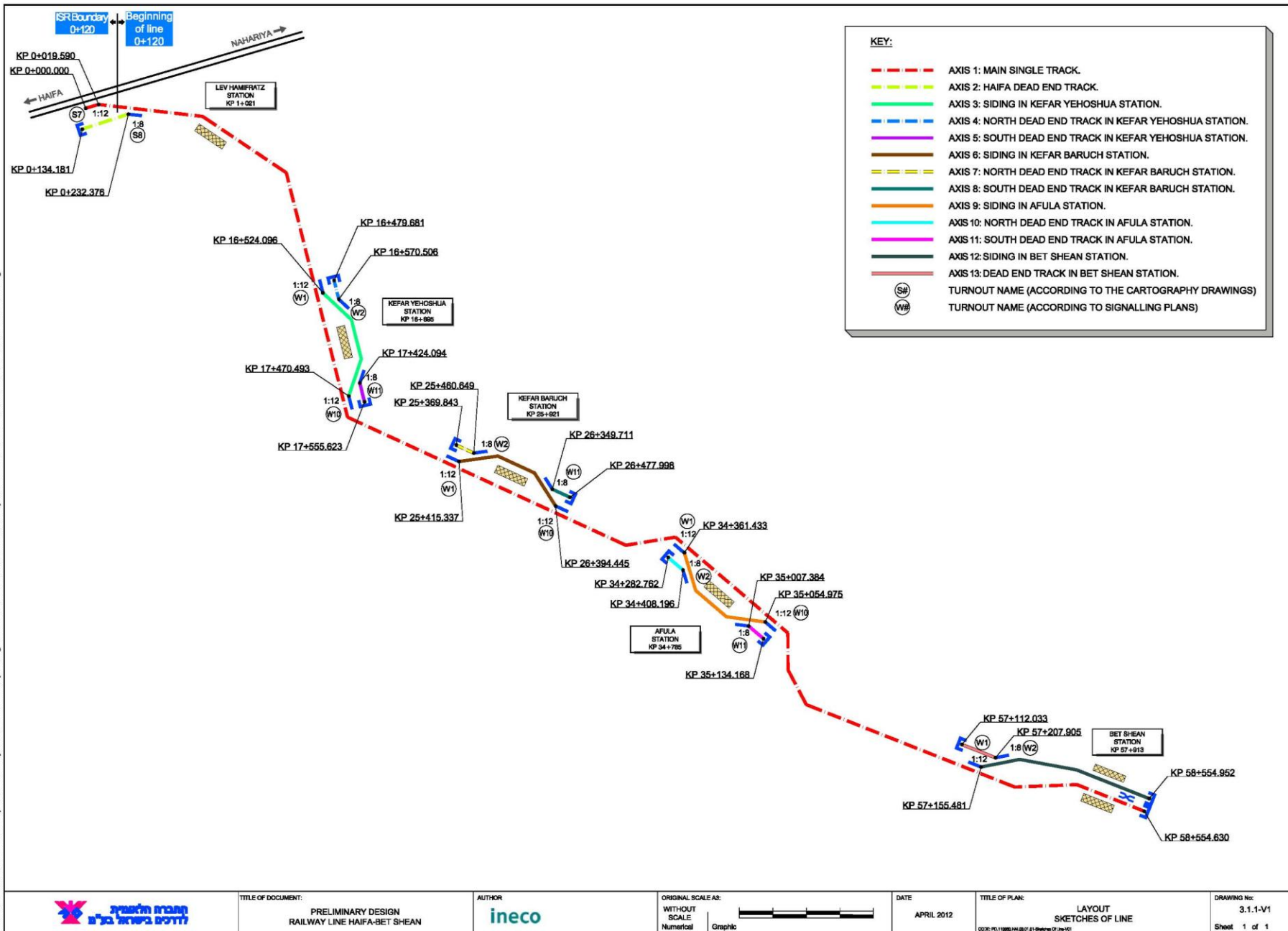
HAIFA– BET SHEAN – WEST SECTION



Israeli National Roads Company

HAIFA – BET SHEAN - EAST SECTION





DATE	1/10/2012
DESIGNED BY	1/10/2012
CHECKED BY	1/10/2012
APPROVED BY	1/10/2012
DATE	1/10/2012

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KEY:
 1st PHASE
 2nd PHASE (Not included in this project)



TITLE OF DOCUMENT:
 PRELIMINARY DESIGN
 RAILWAY LINE HAIFA-BET SHEAN

AUTHOR
 ineco

ORIGINAL SCALE AS:
 1:3,000
 Numerical
 Graphic

DATE
 APRIL 2012

TITLE OF PLAN:
 WORK BASE
 KEY MAP
 (CODE: R0.110860-HA.06.02-Key Map-01)

DRAWING No:
 6.2-V01
 Sheet 1 of 1



Schedule

- **Conference in Israel – 4-5/6/2012**
- **PQ – 7/2012**
- **Qualified Bidders - 11/2012**
- **Tender – Q1/2013**
- **Awarded Contractor – Q2/2013**
- **Commencement of Work – Q3/2013**
- **Haifa – Bet Shean – Operational – Q1/2016**
- **Akko – Carmiel – Operational – Q4/2016**





U.S. Department of Transportation
Federal Transit Administration

Thank You!
**We hope you had a great trip to
Israel!**

Alan Wielunski

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