ELIMINATION OF INFRASTRUCTURE BOTTLENECKS IN UKRAINE
PROJECT PIPELINE
Improvement of EU – Ukraine connectivity
National Transport Strategy Priorities
<table>
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<th>Key Criteria for Projects</th>
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<td>1. Cross-Borders Connectivity</td>
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<td>2. TEN-T Corridors</td>
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<td>3. Regional Development</td>
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<td>4. National Transport Strategy</td>
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<td>5. Infrastructural Bottlenecks Elimination</td>
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<td>6. Traffic Improvements</td>
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<td>7. Road Safety</td>
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<td>8. Environmental Policies</td>
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<td>9. Project Maturity</td>
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Ministry of Infrastructure of Ukraine - Aleksandra Klitina, Helen Gula, gulaheleng@gmail.com, +380913037977
# Project Evaluation Criteria

## 1. Relevance to NTS Priorities
- Efficiency in public governance in transport sector
- Provide quality and efficient transport services
- Financially sustainable transport
- Improve transport safety and security
- Improve urban mobility and regional integration

## 2. Share of Brownfield Investments
- Of total project costs to eliminate bottlenecks at access points
- Of total project costs for upgrade
- Of total project costs for ongoing and maintenance activities
- Other considerations (namely, % of total project costs that could be relevant for brownfield investments)

## 3. Relevance for TEN-T
- Connect local/regional networks to TEN-T
- Increase capacity of TEN-T
- Eliminate bottlenecks in accessing TEN-T
- Improving safety
- Reducing environmental impact
- Other considerations relevant for TEN-T

## 4. Land Use and Ownership
- Project included in relevant zoning plan
- Relevant territorial local/regional development plan (including land use plan)
- Land is formally allocated for project needs

## 5. Development Phase (Maturity)
- Conceptual design / feasibility study
- Design
- Work plan/phasing
- Tender documentation
- Construction permit issued (if applicable)

## 6. Specific Project Studies
- Environmental impact assessment
- Hydrological studies
- Geological studies

## 7. Economic Considerations
- Number of direct users: actual and estimated
- Economic, social and environmental impacts of the project
- Estimated project NPV (positive)
- Estimated project IRR

## 8. Financial Considerations
- Estimated FIRR
- Estimated payback period
- Project leverage ratio
- Project ADSCR
- Project financing structure
- CAPEX/OPEX

## 9. Key Project Figures
- Volume of freight transport served
- Volume of passenger transport served
- Project effect on improved level of service
- Project effect on improved connectivity
- Project effect with respect to eliminating bottlenecks
- Possible project alternatives indicated
- Implementation phases and project timeline
- Key project activities to be carried out and results to be achieved
- Project strategies to reach above indicated results

## 10. Organizational Structure
- Connect local/regional networks to TEN-T
- Implementing agency indicated
- Project operator indicated (if any applicable)

## 11. Risks Identified
- Social, political, economic, external and other project risks indicated
<table>
<thead>
<tr>
<th>Project title</th>
<th>Transport mode/other</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reconstruction and upgrading to highway Category-1 4 lane international road M-07 / E373 Kyiv - Kovel – Yagodyn the section Kovel - from Yagodyn to Kovel as part of the national transport corridor Baltic Sea - Black Sea, national border with Poland, Volyn region</td>
<td>ROAD</td>
<td>230</td>
</tr>
<tr>
<td>1A. Reconstruction and upgrading km 447 - km 461</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1B. Reconstruction and upgrading km 461 - km 474</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1C. Reconstruction and upgrading km 474 - km 505</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Electrification of the Kovel - Izov national border railroad section on the Polish border, Volyn region</td>
<td>RAIL</td>
<td>110</td>
</tr>
<tr>
<td>3. Reconstruction of European 1435 mm rail track on Záhony, Hungary - Chop - Batiovo – Mukachevo section, national border with Hungary (Zakarpatsky region) and establishment of passenger facilities for European standard trains at Mukachevo</td>
<td>RAIL</td>
<td>110</td>
</tr>
<tr>
<td>4. Construction of an overpass at km 522 + 250 international road M-06 / E40 Kyiv – Chop, Lviv region</td>
<td>ROAD</td>
<td>90</td>
</tr>
<tr>
<td>5. Construction of overpasses across railway tracks at km 618 + 500 and 618 + 900 international highway M-06 / E50 Kyiv - Chop, Lviv region</td>
<td>ROAD</td>
<td>90</td>
</tr>
<tr>
<td>6. Construction of M06/M19 multi level road interchange, Rivne region</td>
<td>ROAD</td>
<td>90</td>
</tr>
<tr>
<td>7. Construction of M06/M12 road interchange overpass at km 609+700 at the intersection of international highways M-06 / E40 Kyiv – Chop and M-12 / E50 Stryi - Ternopil - Kirovograd - Znamenka, Lviv region</td>
<td>ROAD</td>
<td>50</td>
</tr>
<tr>
<td>8. Electric vehicles and its charging stations EU – Ukraine connectivity</td>
<td>ROAD</td>
<td>40</td>
</tr>
<tr>
<td>9. Construction of overpass across railway at km 213 + 950 international road M-19 / E85 Domanovo - Kovel - Chernivtsi - Terebleche in Dubno, Rivne region</td>
<td>ROAD</td>
<td>30</td>
</tr>
<tr>
<td>10. Construction of overpass across railway at km 64+339 road of national importance N-02 Lviv - Ternopil, Lviv region</td>
<td>ROAD</td>
<td>30</td>
</tr>
<tr>
<td>11. Intelligent transportation system of Ukraine - 1st component</td>
<td>DATABASE</td>
<td>20</td>
</tr>
<tr>
<td>12. Odesa logistic hub</td>
<td>LOGISTIC HUB</td>
<td>20</td>
</tr>
</tbody>
</table>
Ministry of Infrastructure of Ukraine  Aleksandra Klitina, Helen Gula, gulahelen@gmail.com, +380913037977
RECONSTRUCTION AND UPGRADING TO HIGHWAY CATEGORY-1 4 LANE INTERNATIONAL ROAD M-07 / E373 KYIV - KOVEL – YAGODYN

TOTAL COST EUR 63.06 mln

Estimated construction cost EUR 60 mln, 2 years
TA for FS (CBA), EIA, design EUR 3.01 mln, 6 months
Cost of design works according to national standards EUR 0.05 mln

Increases AADT from 15 000 to 22 000

Eliminates bottlenecks

Improves transport conditions along the international transport corridor

Designed to rehabilitate 52.2 km (excluding the commissioned km 482 + 100 - km 487 + 500 section) of existing M07/E373 road section in order to bring it in line with 1st road category
RECONSTRUCTION AND UPGRADING KM 447 - KM 461 INTERNATIONAL ROAD M-07 / E373 KYIV - KOVEL - YAGODYN

TOTAL  COST EUR 19.635 mln

Estimated construction cost EUR 18.7 mln, 2 years
TA for FS (CBA), EIA, design EUR 0.935 mln, 6 months

Eliminates bottlenecks

Improves TEN-T connectivity

PROJECT COMPONENTS

Project 1 A Estimated construction cost is 18,7 mln EUR

<table>
<thead>
<tr>
<th>M07 road sections</th>
<th>Length, km</th>
<th>Estimated construction cost, mln EUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>km 447 + 638 - km 451 + 000</td>
<td>3.4</td>
<td>3.0</td>
</tr>
<tr>
<td>km 451 + 000 - km 454 + 000</td>
<td>3.0</td>
<td>4.6</td>
</tr>
<tr>
<td>km 454 + 000 - km 457 + 500</td>
<td>3.5</td>
<td>5.0</td>
</tr>
<tr>
<td>km 457 + 500 - km 461 + 000</td>
<td>3.5</td>
<td>6.1</td>
</tr>
</tbody>
</table>
RECONSTRUCTION AND UPGRADING KM 461 - KM 474 INTERNATIONAL ROAD M-07 / E373 KYIV - KOVEL - YAGODYN

TOTAL COST EUR 21.945 mln

Estimated construction cost EUR 20.9 mln, 2 years
TA for FS (CBA), EIA, design EUR 1.045 mln, 6 months

Eliminates bottlenecks

Improves TEN-T connectivity

PROJECT COMPONENTS

Project 1 B Estimated construction cost is 20.9 mln EUR

<table>
<thead>
<tr>
<th>M07 road sections</th>
<th>Length, km</th>
<th>Estimated construction cost, mln EUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>km 461 + 000 - km 464 + 400</td>
<td>3.4</td>
<td>5.1</td>
</tr>
<tr>
<td>km 464 + 400 - km 468 + 000</td>
<td>3.6</td>
<td>5.5</td>
</tr>
<tr>
<td>km 468 + 000 - km 471 + 000</td>
<td>3.0</td>
<td>5.0</td>
</tr>
<tr>
<td>km 471 + 000 - km 474 + 000</td>
<td>3.0</td>
<td>5.3</td>
</tr>
</tbody>
</table>
RECONSTRUCTION AND UPGRADING KM 474 - KM 505 INTERNATIONAL ROAD M-07 / E373 KYIV - KOVEL - YAGODYN

TOTAL COST EUR 21.9 mln

Estimated construction cost EUR 20.6 mln, 2 years
TA for FS (CBA), EIA, design EUR 1.03 mln, 6 months

Project shall allow eliminate bottlenecks and will improve TEN-T connectivity

PROJECT COMPONENTS

Project 1 C Estimated construction cost is 20.6 mln EUR

<table>
<thead>
<tr>
<th>M07 road sections</th>
<th>Length, km</th>
<th>Estimated construction cost, mln EUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>km 474 + 000 - km 478 + 000</td>
<td>4.0</td>
<td>5.4</td>
</tr>
<tr>
<td>km 478 + 000 - km 482 + 100</td>
<td>4.0</td>
<td>2.4</td>
</tr>
<tr>
<td>km 482 + 100 - km 487 + 500</td>
<td>5.4</td>
<td>commissioned</td>
</tr>
<tr>
<td>km 487 + 100 - km 496 + 500</td>
<td>9.0</td>
<td>6.5</td>
</tr>
<tr>
<td>km 496 + 500 - km 505 + 286</td>
<td>8.8</td>
<td>6.3</td>
</tr>
</tbody>
</table>
ELECTRIFICATION OF THE KOVEL - IZOV RAILROAD SECTION TO THE POLISH BORDER, VOLYN REGION

TOTAL COST EUR 13.3 mln

Estimated construction cost EUR 12.7 mln, 2 years
TA for FS (CBA), EIA, design EUR 0.635 mln, 6 months

COMPONENTS

- capital overhaul of 64.4 km of concrete - ties railway tracks
- replacement of 35 railway switchers

Increases commercial speed of trains up to 60 km/h
RECONSTRUCTION OF EUROPEAN 1435 MM RAIL TRACK ON ZÁHONY, HUNGARY - CHOP - BATIOVO – MUKACHEVO SECTION AND ESTABLISHMENT OF PASSENGER TERMINAL

TOTAL COST EUR 8.15 mln

- Estimated construction cost EUR 7.8 mln, 2 years
  - EUR 4.8 mln for rail tracks
  - EUR 3 mln for passenger terminal
- TA for FS (CBA), EIA, design EUR 0.35 mln, 6 months

COMPONENTS
- Rehabilitation of rail tracks along a 40.8 km section
- Upgrade Mukachevo railway station to process passenger trains

1435/1520 bogies need to be changed

Allows for 18 passenger trains per day
CONSTRUCTION OF AN OVERPASS AT KM 522 + 250 INTERNATIONAL ROAD M-06 / E40 KYIV – CHOP, LVIV REGION

TOTAL COST EUR 3.535 mln

Estimated construction cost EUR 3.3 mln, 2 years
TA for FS (CBA), EIA, design EUR 0.165 mln, 6 months
Cost of design work according to national standards EUR 0.07 mln.

COMPONENTS

- construction of railway overpass next to Zapytiv village - length of railway overpass shall be 654-754 m, including two ramps
- re-alignment of two 110 kW transmission lines.

Increases the average commercial speed at Zapytiv-Dubliany railway section, eliminates road-railway grade crossings

Contributes to road safety - reduces the probability of collision of road and railway traffic
CONSTRUCTION OF OVERPASSES ACROSS RAILWAY TRACKS AT KM 618 + 500 AND 618 + 900 M-06 / E50 KYIV – CHOP

TOTAL COST EUR 5.77 mln

Estimated construction cost EUR 5.4 mln, 2 years
TA for FS (CBA), EIA, design EUR 0.27 mln, 6 months
Cost of design works according national standards is EUR 0.1 mln

• Increases the average commercial speed at Verchany-Nezhukhiv railway section
• Eliminates road-railway grade crossings
• Contributes to road safety
• Reduces the probability of collision of road and railway traffic
CONSTRUCTION OF M06/M19 ROAD MULTI-LEVEL ROAD INTERCHANGE, RIVNE REGION

TOTAL COST EUR 10.344 mln

Estimated construction cost EUR 9.68 mln, 2 years
TA for FS (CBA), EIA, design EUR 0.484 mln, 6 months
Cost of design works according to national standards EUR 0.18 mln

AADT M06 12 020 and M19 AADT 4 731 roads
Be reclassified to highway Category-1
Will contain speed change lanes
The total length of interchange approaches shall constitute 4 km
The observed traffic intensity in the locality of Dubno city constitutes 19 000 vehicles per day
Eliminates existing road traffic congestions at M06/M19 crossing
CONSTRUCTION OF M06/M12 ROAD INTERCHANGE OVERPASS AT KM 609+700 AT THE INTERSECTION OF INTERNATIONAL HIGHWAYS M-06 / E40 KYIV – CHOP AND M-12 / E50 STRYI - TERNOPIL - KIROVOGRAD - ZNAMENKA, LVIV REGION

TOTAL COST EUR 9.475 mln

Estimated construction cost EUR 8.9 mln, 2 years
TA for FS (CBA), EIA, design EUR 0.445 mln, 6 months
Cost of design works according to national standards EUR 0.13 mln

Observed traffic intensity in the locality of Stryi city constitutes 20 000 vehicles per day
Despite M06 widening at M06/M12 intersection there are frequent traffic jams
Eliminates existing road traffic congestions at M06/M12 crossing
ELECTRIC VEHICLES AND ITS CHARGING STATIONS EU-UKRAINE CONNECTIVITY

TOTAL COST EUR 5 mln

Estimated construction cost EUR 4.76 mln, 2 years
TA for FS (CBA), EIA, design EUR 0.24 mln, 6 months

Enabling supercharging infrastructure for EV along major trans-Ukrainian highways, connecting all parts of Ukraine to the EU for a seamless electric travel

COMPONENTS

Phase 1 EUR 1.5 mln

Number of superchargers: 14-15
Route: Kharkiv - Poltava - Kyiv - Zhytomyr - Rivne - Dubno - Lviv - Korczowa (Poland, Krakow direction)

Phase 2 EUR 2.9 mln

Number of superchargers: 28-29

Phase 2 Routes
A1: Dubno - Lutsk - Berdyszcze (Poland, Lublin direction)
A2: Dubno - Ternopil - Ivano-Frankivsk - Chernivtsi - Siret (Romania, Suceava direction)
A3: Ternopil - Khmel'nyts'kyi - Vinnysia
B1: Kyiv - Odessa
B2: Odessa - Mykolaiv - Kherson
C1: Poltava (Kharkiv) - Dnipro
C2: Cherkasy - Kremenchuk - Kropyvnytskyi - Kryvyi Rih-Zaporizhia
D1: Kyiv - Chernihiv
D2: Kyiv - Sumy
CONSTRUCTION OF OVERPASS ACROSS RAILWAY AT KM 213 + 950 INTERNATIONAL ROAD M-19 / E85 DOMANOVO - KOVEL - CHERNIVTSI - TEREUBLECHE IN DUBNO, RIVNE REGION

TOTAL COST EU 4.95 mln

Estimated construction cost EUR 4.6 mln, 2 years
TA for FS (CBA), EIA, design EUR 0.23 mln, 6 months
Cost of design works according to the national standards EUR 0.12 mln

Length of railway overpass - 55 m
Length of railway ramps - 400 m
Project shall improve railway traffic by increasing average commercial speed at Dubno – Kamianytsi-Volynska railway section
Contributes to road safety - will reduce the probability of collision of road and railway traffic
CONSTRUCTION OF OVERPASS ACROSS RAILWAY KM 64+339 ROAD OF NATIONAL IMPORTANCE N-02 LVIV - TERNOPIL, LVIV REGION

TOTAL COST is EUR 4.95 mln

Estimated construction cost EUR 4.6 mln, 2 years
TA for FS (CBA), EIA, design EUR 0.23 mln, 6 months
Cost of design works according to the national standards EUR 0.12 mln

Increases AADT from 7 000 to 8 000
Increases average commercial speed at Yasenivtsi-Zolochiv railway section
Contributes to road safety - reduces the probability of collision of road and railway traffic
INTELLIGENCE TRANSPORTATION SYSTEM OF UKRAINE - 1ST COMPONENT

TOTAL COST EUR 20 mln

Estimated construction cost EUR 19 mln, 2 years
TA for FS (CBA), EIA, design EUR 1 mln, 6 months

COMPONENTS
• Transport Planning
• Actual road conditions,
• Financial modeling,
• Safety management,
• Traffic control centers

Influences potential sustainability
ODESA LOGISTIC HUB

✓ TOTAL COST is EUR 5 mln

Components:
TA for construction of logistic hub next to Odesa airport EUR 4.8 mln, 12 months
(TA for FS, CBA, EIA, design)
TA for reconstruction of Odesa runway is EUR 0.2 mln, 6 months
(TA for FS, CBA, EIA, design)

Seaports’ cargo flow of Odesa region is 80 mln tons
Export-import flow of Odesa region EUR 2.8 mln
Odesa region produces goods for EUR 2 mln

✓ Connects Odesa seaports’ cargo flow with EU
✓ Improves EU-Ukraine connectivity
✓ Improves intermodal connectivity
✓ Provides cost cut of EU-China cargo flow transit
✓ Eliminates infrastructure bottlenecks
✓ Improves safety, regional development, TEN-T corridors
THANK YOU FOR YOUR ATTENTION