

## **INTER-MOBILITY AS A ROLL FOR URBAN (RE) DEVELOPMENT OF BELGRADE PUBLIC SPACE AREAS - BETWEEN MOBILITY AND SUSTAINABILITY IN CASE OF BELGRADE**

### **Transport system in Belgrade Metropolitan Area – Introduction**

Belgrade Metropolitan area traffic diversity is a subject with high potentials and influence on the local and regional level. Natural and strategic possibilities and (re) development in context of contemporary modality concept marked Belgrade as one of the most vibrant pivots in south-eastern Europe.

A system with a turbulent recent past, ongoing transition, changeable development with a positive trend in the ultimate decade pretend to take back a position of main subject and pivot in regional communication and transport networks.

This process will produce important changes in (re) defining the spatial and urban structure, all supported with a strong and sustainable functional motherboard base.



**Figure 1. Inter Modal Concept - BG**

### ***Regional level, connector input:***

Belgrade Metropolitan area has a multi- level connector importance on regional networks scale. Its geo-strategic position as a central pivot and long historical development as 'in between stop point' marked spatial and architectural concepts of metropolitan zone. Collocated on E10 corridor rout (with direct inter-structural penetration) structurally opened on Danube and Sava confluence, central positioned in south eastern European rail network , Belgrade Metropolitan zone always was marked with on move strategy concept in the spatial and architectural planning and practice.

Actual and future projects of public space areas and zones of inter-modality have that chance and challenge to improve and support strong infrastructural potential and unique identity issue which mark Belgrade as a central pivot on a regional scale.

For that the most compulsive points and structural generators in light of mobility concept in metropolitan zone represent regional importance subjects of contemporary redefinition in spatial and architectural development.

***Inter- Metropolitan level, multi - networking input:***

Public transport and traffic concept in Belgrade Metropolitan are organised as a central system with important cross yard points as parts and pivots of circular organisation networks. Actually, the most important zone of the Central Train Station, together with the Bus terminal and Passengers port terminal made a spin of public transport sector, motherboard which serves several satellite point connectors (from suburbia and second line centres zones) with new projected intermodal terminal as a main on metropolitan level, and position of two more important terminal points, actual one- point system will be developed in triangular matrix main terminal – new Belgrade terminal – port and marina zone.

Transport system based on corridor E10 penetration and rail zone on Sava river coast with new interventions in actual urban structure will be modified as a more developed concept which transformation will leave free landmarks for new urban and spatial re design.

Public transport is based on city train lines which connect Belgrade City with satellites, bus network on metropolitan and city scale level, tram network ( 16 lines) and trolleybus network (8 lines) in city zone. New planned light underground network (three line concept) will be in important and positive way modified actual public transport system.

Project of interior Half Ring will be channelling existing transport and traffic structure in city zone and together with new passengers port terminal and marina project will reorganize the actual transport matrix.

**Infrastructural background  
– object, pivots and vectors in new Metropolitan concept of inter-mobility**

Inter mobility redefinition of Belgrade Metropolitan zone and new spatial and architectural development of intermodal zones in the city area have a base in several infrastructural projects, in process or collocated in recent future period. These changes in traffic concept as a final product have most dynamic and functionally more adapted transport connections, at the same time open new free landmarks for contemporary re design and spatial organization of new urban zones with dominant public use function. This zones will be created as support areas for inter modal exchange but also as spatial and architectural accents and pivots in contemporary sustainable urban politic City of Belgrade.

***City corridor E10 zone:***

Belgrade is one of the unique urban unites with direct penetration of high intensity transport root such is corridor E10. In the past characteristic decelerated as a negative effect in contemporary reality is adapted as strong and important potential. BG part of corridor (Including regional level of importance) at the same time has a strong functional and supporting importance on a local - metropolitan level (connector airport- city central zone; city central/distribution/ zone-industrial polygons zone).

Strong communication link, easy extensible character and central position in urban structure distribution marked corridors area as field for new grand importance projects, in financial and spatial way. Project for delocalisation of corridors main traffic line on peripheral ring level (in process) and transformation of existing structure in City Boulevard of first category just making frame for higher importance which took this area in BG inter modal transformation process.

**Interior half-ring project:**

New half ring is planned for reorganisation and redevelopment of traffic network in metropolitan area of Belgrade with an accent on useful capacity of NBG infrastructural potential, out of main line zone between corridor E 10 and main boulevard line. Project is organized in three phases and indicial phase takes place in NBG municipality. Proposal is to connect one of the NBG boulevards of actual low traffic intensity with suburban zone in old city area which will relax high traffic density downtown zone and central zone of NBG. (The phase- NBG rout; the second - bridge on Sava River; the third - old Belgrade suburbia line). Indicative for this project became from city municipal organs in field of traffic and transport development

The first phase needs to be terminated until 2010. (Tenders for constructive phase in realization for new bridge and main road network are in process)



Figure 2. Interior half – ring project, BG

**Light Rail Transit, Belgrade LRT:**

Light Rail Transit system will be adapted as a principal public transport mode in new transport concept of Belgrade. Light Rail as a concept will introduce classic underground system, as a main issue in choosing LRT is the lower price and faster period of implementation and construction. First line (three lines in all) is in the last project phase, with adapted feasibility study and time scale plan of implementation. First – Main line will connect opposite points, old city suburbia line with New Belgrade peripheries. Second and thread line will connect interior city structure with main terminals and most important public points in City central zone and central zone of New Belgrade (intermodal terminals in crossing points)

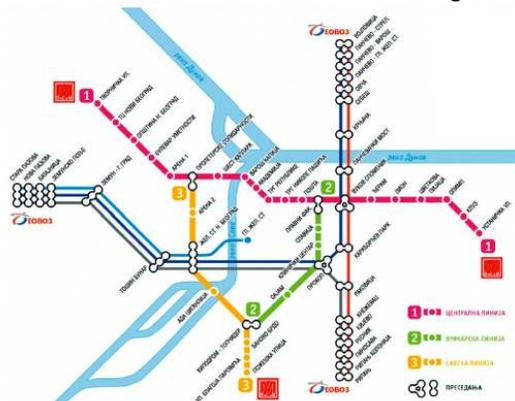


Figure 3. Light Rail Transit map, BG

***Prokop Central Station, Regional Intermodal terminal in Belgrade:***

New Intermodal terminal as a central structure in adapted intermodal system on metropolitan scale. 40 000 m<sup>2</sup> with 6 platforms, 10 railway corridors for city train, regional, national and international departures and arrivals. 128 000 m<sup>2</sup> of commercial area zone and 5 hectares of corridors and public space areas. Positioned on the corridor E10 rout the biggest terminal in this part of Europe.

Full system includes three more terminals (New Belgrade terminal, Zemun and Airport LTR terminal) and cargo recharge zone (south- west zone of city – Karaburma).implementation in three phases:

2009 – Passengers terminal, replace actual central city terminal

2011 – Transport and support traffic layout, dislocation of existing rail infrastructure from Sava bank downtown area

2012 – Cargo terminal and LRT station

Integrated bus terminal (principal in NBG terminal) 200 m of tram corridors, LRT and taxi terminal. Public space area as a connection with Sava amphitheatre project and surrounding residential areas and infrastructural spot of Mostar viaducts. Matrix of several squares and linear vectors in main city directions (Sava amphitheatre, old Downtown, Dedinje and Senjak residential areas).



**Figure 4. Prokop - new central station, BG**

***Passengers Port Terminal and Danube Marina project – Belgrade on the rivers:***

Important modal pivot in metropolitan context, useful resort of geo – strategic advantage which marked Belgrade as a city on confluence. River traffic concept as an important issue in metropolitan transport concept.

Touristic port on Sava River and Marina project on Danube, together with principal river taxi terminal and Cable- car structure between old city, new Belgrade coast and Great War eland Represent most sustainable and most evaluated concept in Belgrade intermodal exchange.

Public area as a connector between spots and other intermodal subjects with strong regulation in eco – multilayer organisation, direct links and special equipped areas for relax and commercial – service issues.

One of most attractive infrastructural projects in metropolitan area, new concept of water fronts as a direct intermodal links and transversals.

### Inter Modal Zones as new public space areas – in case of BG

Strategic concept of Inter-Mobility based on several input points marks actual and future spatial redevelopment of Belgrade Urban structure. New type of public space organization based on mobility and dynamic crossing points led in sustainable and ecological layout represent most important transformation in central city structure. As two main subjects, crucial epicentres of transformation process we can mention the Sava amphitheatre zone in old centre area and New Belgrade terminal zone in New Belgrade municipality. Both of them are the ultimate phase of intermodal transformation process, adapted and actual subjects in General Plan 2021 of Belgrade Metropolitan Area.

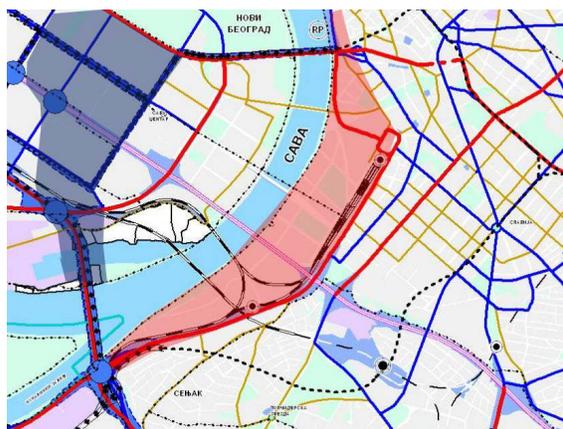


Figure 5. New Inter Modal Zones – BG

#### ***Sava Amphitheatre – contemporary intermodal zone in the old city nucleus – Belgrade /in move/ on Sava river bank***

Central area of 80 hectares between two intermodal points, Prokop intermodal terminal and Port – Marina complex. Very centric position in the old city centre area makes this zone one of the most attractive spots in metropolitan context. 150 000 m<sup>2</sup> of building space and a huge public space area will replace existing rail infrastructure and actual train terminal. With 2010 as an initial year, until 2020 this area will be transformed in the biggest intermodal park zone in Belgrade municipality. Attractive location, biodiversity concept and strong financial and managing input will make this zone as a one of city pivots.

Linear vector with connected spatial points between tourist port and actual Belgrade fair complex is planned as a central public space zone, directly on Sava river bank this area will charge all types of modal connections between two intermodal spots (LRT stations, river taxi stations, Cable-car points) and all pedestrian users modes (bicycle routes, roller area, special need persons corridors...)

In biodiversity concept projected green and natural resort areas will be cultivated as a domestic ecosystem areas, to supported and valorised actual bio-fond of Sava River and National Park of Great War Island

Strategic plan including and several levels of relax and leisure zones for different user groups actors (playground areas, mature citizen's points...)

In global all spatial redevelopment is created as straight – strong link vector with several inter break spots with clear segregation on communication important transversals and second

Importance connecting lines. Public space will offer short and functional multi link as leisure and relax are in the same time, dependent of users necessities.  
Idea for urban regeneration of this area in central zone of Belgrade exist as a old mentioned concept (first time actual concepts became from 1973), from Europolis as a business Downtown (USA downtown concept) throe natural park zone as reflexion of surrounding parks areas Sava Amphitheatre in actual General plan 2021 and Strategic Plan Municipality of Belgrade is balanced as intermodal area or urban on move phenomena. Subject sustainable and dynamic in the same time, practical and autochthon for Belgrade spatial reality.



Figure 6. Sava Amphitheatre Intermodal zone – BG

***New Belgrade Terminal Zone – contemporary intermodal reflexion in modern city surrounding, / on move in ultimate speed /***

New Belgrade terminal zone as a second pivot in metropolitan and city intermodal regeneration. 30 hectares in New Belgrade municipality, around the main bus terminal on city level and train terminal for local and regional trains. This zone is projected as a transversal artery between Sava bank and New Belgrade Downtown area (most vital city business area). Complex of several administrative and commercial units crossed with large public space arias, dominant superficial points connected with fast link vectors, spatial organization from point to point. As a main zone in old downtown, biodiversity and modal links, difference in the appropriate structural heterogeneity, phase actualisation process, from initial part (2010) thro ultimate definition (2016) in concept of confluence, development from different points and finish connection in central sector of zone.

Connection with old centre zone by new bridge from half ring project and try conventional routs Branko Bridge – Old Tram Bridge (water taxi terminal and LRT line as progressive mode)

70 000 m2 of built area, main public level divided on private- public and total public areas.

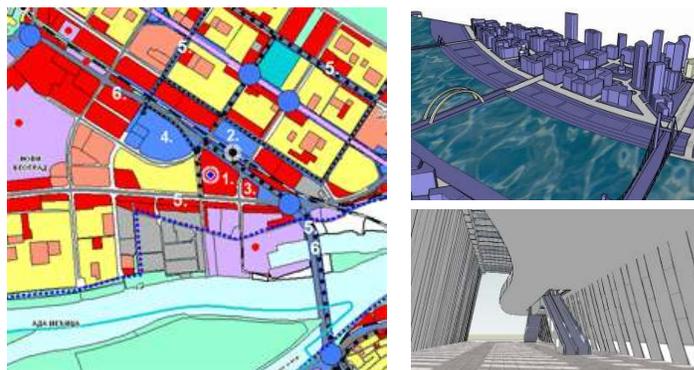


Figure 7. New Belgrade Terminal Zone – BG

### ***Conclusion – in Between, on Move, Public spatial re development***

Complex and multilevel subject as a Belgrade Metropolitan traffic system needs to be leaded with clear and useful guidelines which will take all advantages in appropriate spatial re development. Inter modal concept and new public space areas will offer one contemporary mechanism for future architectural and urban transformation. Concept which good coordination between all important subjects (municipality, investments – private and public, appropriate managing concepts, user groups and citizens) can produce successfully formula for future transformations and spatial gradation. Concept of intermodal 2021 Belgrade General Strategy can be a useful tool and real practice example as a base for several urban interventions which will be in process in actual decade's period.

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