**ANNEX 6.0 GENERIC WASTE MANAGEMENT PLAN FOR RECONSTRUCTION AND IMPROVEMENT OF STATE OWNED PUBLIC FACILITIES**

It is mandatory that contractor prior to start of the works to remove all equipment and material that will no longer be used and to dispose it or recycle it in a proper manner. Wastes where ever possible should be minimized, separated and handled accordingly. It is possible to separate these types of wastes during demolition:

1. construction debris: tiles, bricks, concrete and other waste with similar properties from demolition;

2. wood: doors, window frames, floors, etc.;

3. plastics: coating, blinds, etc.;

4. glass: from windows and doors;

5. metals: boilers, kettles, coated tubs, sinks;

6. electrical waste: insulation materials, wires, etc.;

7. sanitary materials: ceramic sinks, toilets

8. asbestos waste.

During the construction mainly construction debris is created, some hazardous waste like pain finishes, hydraulic oils etc., and as well small quantities of municipal waste. Waste generation is expected to have the most important environmental impact. The envisaged works under the project will produce several types of waste. These are classified according to the European waste catalogue and hazardous waste list as the Republic of Serbia harmonized the waste legislation with the EU legislation

* Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), sealants and printing inks
* Oil wastes and wastes of liquid fuels
* Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified
* Construction and demolition wastes (including excavated soil from contaminated sites)
* Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions

Hazardous waste is expected in small quantities and it has to be separated from non-hazardous municipal waste. For hazardous waste contractor has to follow procedure for hazardous waste management, this implies collection, handing over the waste to authorized company for hazardous waste management and fulfilling accompanying documentation

Different waste types (plastic and glass packaging, electrical waste, spare oils) for which separate collection/ recycling system exist in the country have to be separated from non-recyclable waste and taken to appropriate collection points with accompanying documentation. Non-recyclable waste has to be taken to an approved landfill.

The building site will be cleaned and all debris and waste materials will be disposed of in accordance with clauses specified in the bills of quantities. Burning or illegal dumping of waste is strictly forbidden.

Municipal waste and other waste have to be collected in containers specially designed for that purpose and regularly conveyed away.

All waste has to be collected and handed over to the company authorized for collection and transportation of that type of the waste.

The waste (hazardous and non-hazardous) should be separately stored and collected according to Ordinance on Categories, Types and Classification of Waste (off. Gazette no. 50/05). Hazardous waste (which includes toners, electrical equipment, etc.) can be on location stored for maximum one year. The waste should be handed to the hazardous waste authorized company. Documentation regarding waste management should be kept on site.

**Asbestos waste**

If asbestos is located on the project site, it has to be marked clearly as hazardous material. When possible the asbestos will be appropriately contained and sealed to minimize exposure specially during building dismantling. The asbestos prior to removal (if removal is necessary) should be treated with a wetting agent to minimize asbestos dust. Due to the health hazards asbestos will be handled and disposed by skilled & experienced professionals. If asbestos material is being stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately. The asbestos waste should be handled to the authorized company.

WASTE MITIGATION PLAN

| **PHASE** | **ISSUE** | **MITIGATION MEASURES** | **COSTS** | **INSTITUTIONAL**  **RESPONSIBILITY** | **COMMENTS** |
| --- | --- | --- | --- | --- | --- |
| DESIGN | Reviewing design plans for construction and adaptation of buildings | Implementation of measures proposed by EMP.  New buildings shall be designed according to local constructing (and cultural) practice (respect of surrounding architecture) | Not significant cost, this should be regular work of consultants hired by PAT Included in cost of issuance of construction permit | Design team, PAT Reviewed by institution issuing construction permit | This is not a legal requirement, but it is recommended to become a binding requirement for the designer |
| CONSTRUCTION | Dust | Dust from demolition and transportation of construction material and waste will be minimized by use of water and enclosement of cargo If demolition in the object presents high source of dust site can be enclosed  The dust should be suppressed during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site | Could be significant if construction is done in the dry period of the year. Cost should be beard by the contractor. | Contractor | Will be specified in bidding documents (compliance with EMP) |
|  | Construction waste | Hazardous waste has to be separated from solid waste.  For hazardous waste (paints, oils, etc.) contractor has to follow procedure for hazardous waste management, this implies collection, handing over the waste to authorized company for hazardous waste management and fulfilling accompanying documentation All recyclable fractions have to be separated from non-recyclable waste and taken to appropriate collection points with accompanying documentation  Non-recyclable waste has to be taken to approved landfill The building site will be cleaned and all debris and waste materials will be disposed of in accordance with clauses specified in the bills of quantities  Burning or illegal dumping of waste is strictly forbidden Waste management documentation should be kept on site | Significant (depending on quantities of hazardous waste)  All costs should be beard by contractor.. | Contractor | Will be specified in bidding documents (compliance with EMP) |
|  | Replacement of asbestos containing materials and other hazardous materials | Before the renovation of the building a construction team should examine old insulation and determine the presence of asbestos Replace Significant cost All costs should be beard by contractor  asbestos and other not environmental friendly material from the building, applying strict safety measures to prevent inhalation of asbestos fibers (like protection masks, enclosement of the space, etc.) Insulation material containing asbestos is defined as hazardous waste and it has to be handled accordingly | Significant cost All costs should be beard by contractor | Contractor | Will be specified in bidding documents (compliance with EMP) |
|  | Accidental spills to water and soil | If there will be need for installing fuel storage tanks they will have secondary containment with sufficient volume to contain a spill, or 110% of the largest tank, or double sheeted container will be installed.  The site will establish appropriate erosion and sediment control measures such as e.g. hay bales  and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby channel. | Not significant All cost should be beard by the contractor | Contractor | Will be specified in bidding documents (compliance with EMP) |
|  | Waste management | Organized solid waste separation Collection of recyclables and organized collection of non-recyclable solid waste  Introduction of measures for minimization of waste production,  Coordination with local waste management plan  Collect and separate waste within facility Hand over waste to authorized company for hazardous waste management  Follow binding reporting procedure on hazardous waste | Not significant through period of years, should be paid by Operator and not from the loan | Operator |  |
|  | Storing | Hazardous waste should be stored according to Material Safety Data Sheets. | Initially relevant (one time cost) should be paid by Operator and not from the loan | Operator | Facility designs should address the need for storage |
|  | Waste management | Possible adverse environmental impact and health effects could occur due to inappropriate waste management with various waste streams. Mitigation measures are:   * Preparation of the Waste Management Plan for the expected waste streams during the construction phases of the project; * Identify the hazardous and non-hazardous waste and separate them at the construction site; * Very small quantities of glue, paint, packaging waste from paints and glue, aluminium profiles, screws and other construction material could be found after the finalization of the project and manage in accordance with national HW legislation (collection of hazardous materials, label as hazardous waste and give to the authorized company)The contract with the company for waste collection and transportation should be signed for collection and transport of waste; * The materials should be covered during the transportation to avoid waste dispersion; * Burning of construction waste is prohibited; |  | Contractor –Bidder  Supervisor |  |
|  | Water quality | * Possible environmental impact on the underground water could occur due to ground contamination from the spillage of materials such as vehicle fuel, motor oils, lubricants * Transportation vehicles should be enclosed to avoid potential leakage; * Possible hazardous waste (motor oils, vehicle fuels, lubricants) should be collected separately and authorized company should be sub-contracted to transport and finally dispose the hazardous waste; |  | Contractor – Bidder  Supervisor |  |

**WASTE MONITORING**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **What parameter is**  **to be monitored?** | **Where**  **is the parameter to be monitored?** | **How**  **Is the parameter r to be monitored d?** | **When**  **is the parameter to be monitored (frequency of measurement)**  **?** | **Why**  **is the parameter to be monitored?** | **Cost** | | **Responsibility** | |
| **Constru ction** | **Operat ions** | **Construction** | **Operations** |
| Collection and transport as well  storage of hazardous waste (if any  occur). | On safety temporary  storage | Review the transportati  on list and conditions at the  storage facility | Before the transportation of  the hazardous waste (if there is any) | To improve the waste management practice on  municipality and national level. |  |  | Authorized  Contractor for collection and  transportation of  hazardous waste  (if there is any occur) subcontracted by the Contractor- Bidder  Environmental inspector |  |