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Practice of Road Project Management

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The traditional task of the road administration is to ensure the best level of road maintenance that is possible according to the financing allocated to road maintenance. To deal successfully with this task the road administration has established departments, where professionals work in various sectors linked with road maintenance. To every department particular tasks are delegated such as analysis of road condition and definition of priorities, acquisition of technical standards and project procurement, work procurement and maintenance, planning of finances. Therefore particular specialists work in many projects and it is possible to reach high level of competence. This system ensures successful planning of maintenance works and implementation at constant financing and project nature.

The present world changes fast especially in our region and the public sets new demands to roads constantly. The traffic loading increases sharply and the nature of traffic changes. Because of political and economical changes the former routes lose their meaning and at the same time the loading on roads that in the past were not important is increasing. The technical parameters of cars are changing, the traffic is getting more dynamic, and the load carrying capacity of vehicles is increasing. The present road network does not conform to the public necessities and that is the reason why instead of periodical maintenance serious reconstruction works have to be executed.

Even if the domestic resources of Latvia do not ensure a satisfactory financing for the reconstruction of road network in the needed amount, road construction market in Latvia is expecting a potential increase. This increase must happen earlier or later as the road technical condition deteriorates and therefore more financing will have to be allocated to road rehabilitation. In the preceding years a small increase ensured the credits of international finance institutions. At the present moment the biggest reconstruction projects are included in state investment programmes, to the financing of which financing from the EU funds is attracted. Expecting increasing of the finances in the State Road Fund and the EU financing, the Latvian Road Administration (LRA) is seeking for efficient and smart methods of road management to satisfy public demand at high quality and efficiency. The traditional road management model has its imperfections. Firstly with the irregular changes of work amount and nature it is difficult to plan resources if they are not linked to particular projects. Secondly the traditional system tardy responds to imperfections in the project implementation process, because there is no effective feedback and there is no

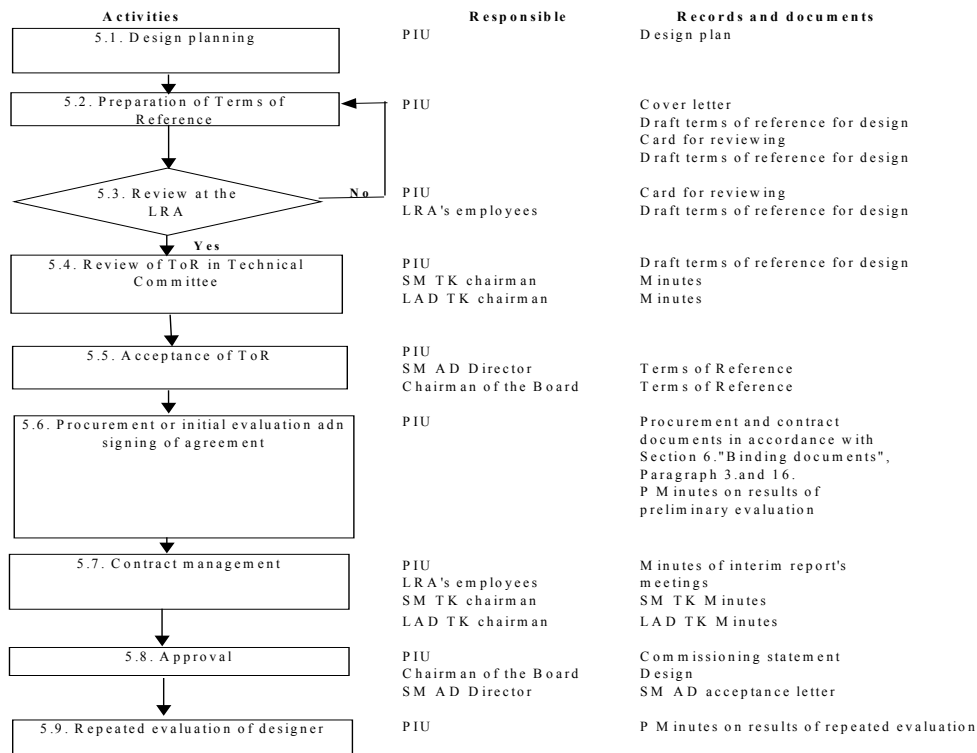
instrument that objectively values the conformity of every stage to the outcome. Thirdly, the procedures of EU differ from procedures in Latvia. The adaptation of EU procedures requires remarkable administrative recourses. In result we had to reconsider our administrative facilities and to search for effective solutions, to be able to perform the interposed tasks.

Approach of the Latvian Road Administration is not new and the chosen methods are not innovative. The aim we are trying to achieve is a combined use of management methods in order to achieve maximum efficiency. Methods providing the basis for our development in road project implementation are the following:

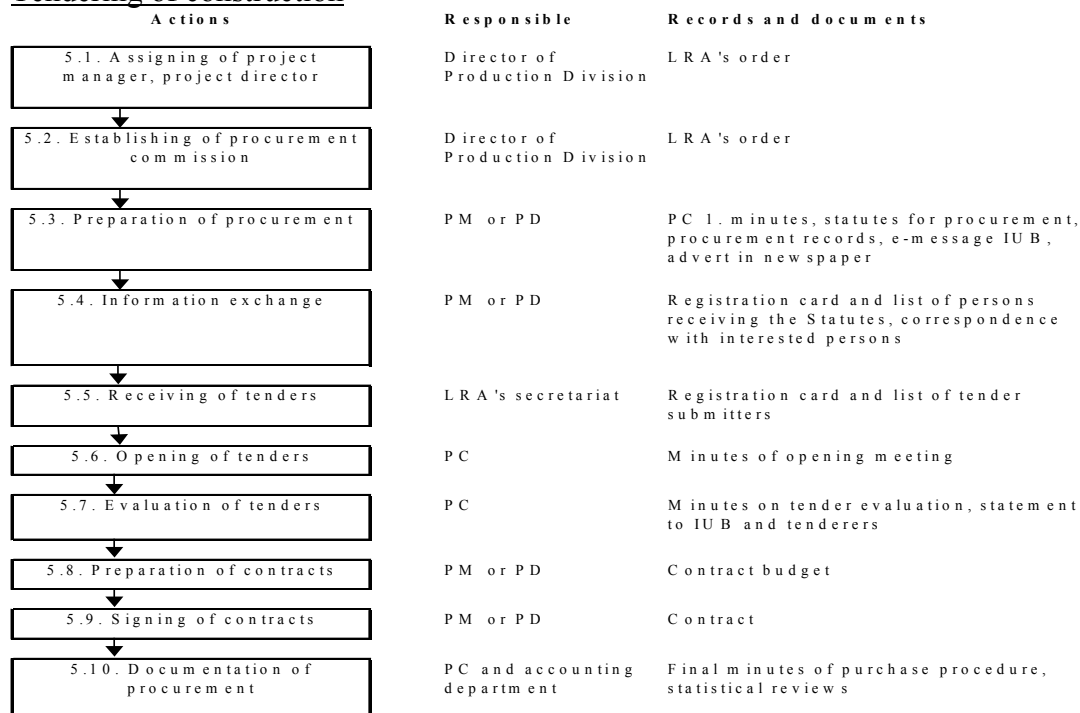
- improving of existing management by adapting high management standards
- administrative structure tailored to project management principles,
- scale economy,
- standardisation, and
- computerisation

The Latvian Road Administration has revised and improved its management system in order to comply with ISO 9001:2000 standard. Standard management procedure covers full project cycle, including planning, procurement, construction, testing and follow up. All basic activities are shown in the used procedure schemes. The basic schemes are the following:

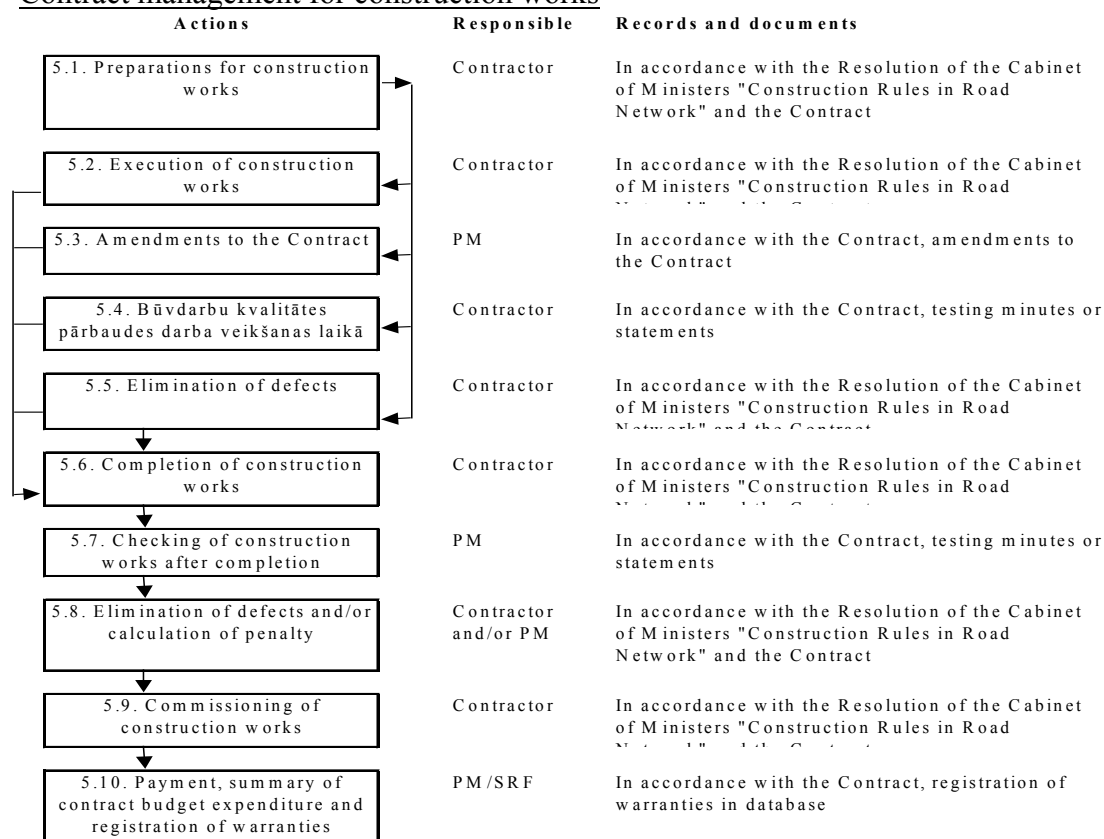
Tendering of design



Tendering of construction



Contract management for construction works

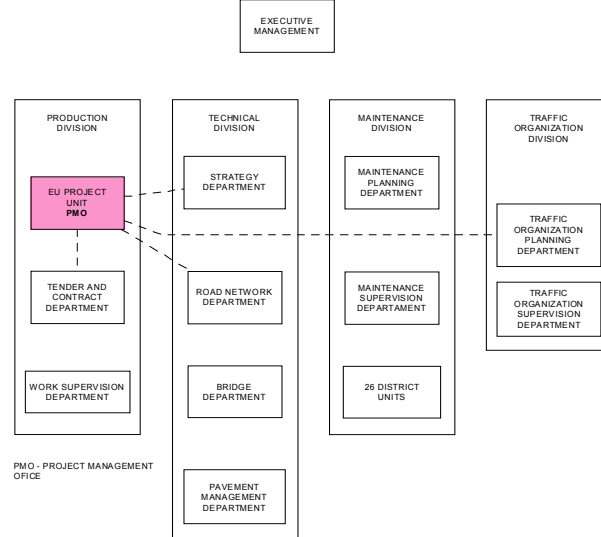


Construction and defects liability supervision

Actions	Responsible	Records and documents
5.1. Quality monitorin of construction	R N	Statemnts
5.2. Request for the testing of construction quality	G A	Testing request
5.3. Quality testing	R N	Statemnt, testing statemnts
5.4. Application of financial warranty	G A	Financial warranty
5.5. Elimination of defects	Contractor	Note, Contract
5.6. Repeated quality testing	R N	Statemnt, testing statemnts
5.7. Deregistration in database	G A	Record - complete

Relevant part of this activity is the management of human resources, as we had to transform both the thinking of employees and the structure of the Road Administration itself. Practically this process is never-ending. There is a fairytale about our capital city Riga. From time to time a monster comes out of the river Daugava that crosses the city and asks whether the building of Riga has been completed. If it is finished, the city will sink in the Daugava. As you might imagine the building of a large city never ends. The same lies with the road management and administration. We hope we shall never cease to improve ourselves, but if we shall, the decline is imminent.

For project implementation the Road Administration has introduced a matrix scheme where each project manager seeks resources and competences through different existing functional units. The project manager works in a team and can easily delegate functions and responsibilities to his team-mates - designer, site supervisor, testing laboratory and guarantee administrator. Education, skills and training of project managers are essential. Clever choice of procurement methods, qualification demands and criteria of award, as well as, performance-based specifications are critical for the efficiency of the project. In the management of human resources we focus on two important issues: teamwork and training. Training and teamwork are mutually complementary areas as the collective mutual training is very important. The third issue, as mentioned before, is the responsibility for the final result. Teamwork does not eliminate but even improves it by reducing the trend of personalised responsibility to gain the result at any cost. The Road Administration has developed a training system providing possibilities both to outsource training and to support the training chosen by employees themselves. Some changes were made both in job titles and in the LRA's administrative structure. Some employees now are appointed as project managers, and their job descriptions have been amended by expanding the scope of duties and reducing the regulation.



Everybody knows the disadvantages of such system: mutual fight between the managers of functional units and project managers for resources, increase of coordinating meeting and costs of the system, mostly because of increase of qualified staff and management overheads. However, all this is compensated by the efficiency of project implementation. It has to be recognised that the Road Administration has no other possibilities, than to continue its development in this direction, because the offered European Union funds are so huge that otherwise the Road Administration will not be able to use them.

Applying of scale economy in the planning process starts at the project initiation stage - design and planning. The aim is homogeneous and parallel work with the groups of similar projects: located in the same geographical region, with uniform tender documentation, simultaneous tendering schedule and uniform approach to the project from the project management point of view. Such approach allows the Road Administration to use the resources more efficiently by reducing administrative procedures. At the same time the method contributes to the saving of the public resources, as in large tenders with many lots the contractors are forced to offer cross discounts.

Different criteria are applied for the projects financed by the EU, as the size of the projects is large for Latvia and different mechanisms are applied. At the same time the content of these projects is formed so that all its components serve the achievement of a strictly defined goal. Project administration has to be sufficiently effective to ensure maximum benefits from project implementation and the possibility to audit project resources. The most important is the quality of design documents and project planning, as well as, the correct applying of standard procedures to a specific project. These projects are known for their specific complicated administrative mechanism, involving several ministries and the EC. Each additional stage in project implementation requires significant administrative resources, therefore it is even more important to know well and respect the procedures implementing EU financed projects.

Standardisation is closely connected to scale economy. Directions for the standardisation are: technology standardisation and document standardisation. Technology standardisation is aimed at uniting road projects requiring the same technology thus allowing the contractors to benefit from the effect of savings from volume and achieve the uniformity of work quality. Document standardisation reduces the work of contractors in preparing tenders and the work of the Latvian Road Administration in preparing tender documents and reviewing tenders. Preparation and regular updating of road and bridge specifications play a major role in technology

standardisation by introducing the latest technical and organisational innovations. Taking into consideration rather small scales of projects in Latvia our own research resources are not sufficient therefore we use much experience of our neighbour countries in preparing our own standards. The LRA elaborated standard specifications based on the Swedish Road 94. In preparing the specifications we were trying to simplify them as much as possible by describing only the relevant issues and relying on the knowledge of our engineers about the applicable standards and tests. The standard specifications are available at the LRA's homepage www.lad.lv. The LRA also has developed standard tender documents including contracts. The Tender Documents have been developed sourcing from experience gained working with International Finance Institutions. Standardisation of any kind of documents and their long-term use creates a speed effect. We try to create our documents as rational as possible in order to avoid their duplication and repeating. Duplication and repeating is potential source of misinterpretations and mistakes. Discipline in terminology is also very important. Inconsequent use of terminology leads to misinterpretations and misunderstanding the solution of which requires both administrative and financial resources.

Scale economy and standardisation are well suited for computerisation, therefore the Road Administration is creating databases and their management systems. LRA has developed a Project Information System "BUVIS" which provides an opportunity to use the Internet for contract information exchange and submission of monthly certificates. "BUVIS" solves the main problems in project and contract management, as it contains the database of tenders and the control tool of project costs. The solutions are suited for working in the Internet thus ensuring single data entry and arithmetic control. This piece of software has been developed according to the LRA's order and is based on an extensive database management software Microsoft IIS 5 - ASP; MySQL, but at the same time it involves the simple and commonly used MS Access interface. Different interfaces and different reporting requirements for the Latvian and the EU projects create problems in the use of information system, however, these problems may be solved both by improving the software and by harmonising the documentation.

Important feature is the unification of bill item titles of the works and their connection to appropriate specifications, which facilitates the recording procedure and allows acquiring statistical data for the making of further decisions and the management of construction market.

The increase of the market will be a great challenge both to the sector of road design and construction, which has been in stagnation for many years, and to the Latvian Road Administration as well.