

QRDC-A brief introduction and Ongoing Activities

Quality Research and Development Center under Department of Roads was formalized by cabinet decision on 2075. The Quality Research and Development Center currently has four sections namely,

a) Road Sector Skill Development Unit

The section is assigned with the responsibility to organize different trainings related to different aspects of road/bridge/tunnel design and construction, contract management, public procurement and other related field to develop the skills of the DoR personnel. In this fiscal year, the center has collaborated with Institute of Engineering, Continued Education Division for organizing different specialized training packages for DoR personnel. The center has successfully conducted four session of 3 days training on “Basic Tunnel Design and Construction Methodology of Transportation Tunnel, A case study of Nagdhunga Tunnel”. Further, two weeks long orientation training was organized for the new engineers of DoR.

b) Research and Development Unit

The Department of Roads and Tribhuvan University, Institute of Engineering (IOE) has signed Memorandum of Understanding on **March 2017**, for Research and Development, Training, Expert Opinions and Consulting Services for Sustainable Strategic Road Network Development in Nepal. As per the MOU, the center has signed contracts with Research and Training Unit (RTU), Department of Civil Engineering, Pulchowk Campus to conduct research on the following topics

1. Standard Design and Drawing for Soil-Nailed Structure
2. Stability Assessment and practical solution for chronic land movement site at Ghuthitar of Dharan Dhankuta Road
3. Geo-synthesis application of Road Pavement
4. Development of Traffic Crash Barrier Design, Construction and Maintenance Handbook with Specification Details

c) Central Road Laboratory (Laboratory Unit)

The laboratory unit is primarily responsible for the works concerning the quality control tests of the Department of Road Offices.

1. Laboratory Tests:

- More than 40 tests are being conducted by the Laboratory Unit.
- Laboratory Unit has four different sections:
 - i. Geo-lab Section.
 - ii. Bitumen Lab Section
 - iii. Gabion and Reinforcement Section
 - iv. Cement Section

Most of the tests detailed in the Standard Specifications are being conducted in the LU.

The major tests that are currently being conducted include:

- Asphalt Mix Design in accordance with the Asphalt Institute MS-2.

- Concrete Mix Design in accordance with IS 10262.
- Pre-stress cable tests.
- Reinforcement Tensile Test, GI wire Tests.

Testing capacity of LU is being strengthened by procuring new testing equipment. MCA-Nepal is also providing new equipment to enhance capacity of LU.

2. Works Related to Standard Specifications

The Department of Roads has published the Standard Specifications of Road and Bridge Works. The Specification is being used by all of the offices of Department of Roads as well as other Governmental authorities involved in Bridge and Road Projects.

One of the chief functions of the Laboratory Unit is to evaluate, update and revise the specifications to accommodate the changes in construction practices with time, to include new technologies in road construction that are being developed in time as well as making changes in accordance with International Practices. In this regard, the Standard Specifications of Road and Bridges, 2078 (Revised) was prepared and implemented by the LU.

3. Works Related to Rate Analysis of Road and Bridge Works

In order to standardize the rate analysis for the road and bridge works, a standard norms was prepared by the Department of Roads. The Laboratory Unit is involved in the continuous process of analyzing the components of norms, updating it with time. LU had started web based rate analysis software. Currently, the rate analysis software is in use at HMIS with the to facilitate and standardize the preparation of Cost Estimate.

4. Preparation of Manual

Preparation of Asphalt Mix Design Manual, Concrete Mix Design Manual, and lab Test manual are in progress and planned to complete by the end of this fiscal year.

d) Innovation (Tunnel and Alternative Transport) Unit

The unit is primarily focused on study and construction of road tunnel and grade separated intersections along Strategic Road Network. The department has envisaged some road tunnel projects and grade separated intersections projects to be implemented. The center has achieved following milestones till date in this fiscal year.

1. The contract agreement (Contract No. DOR_QRDC/EPC/ICB/STP/077/78-05) between the Department of Roads, Quality Research and Development Center and Contractor M/S China State Construction Engineering Co. Ltd, Beijing, China for the execution of "Planning, Design, Engineering, Procurement, Construction, Commissioning and Five Years of Service Operation & Maintenance of One Double Lane Standard Highway Tunnel, Rock Shed

Structure, Rock Fall Mitigation and Road Works of Siddababa Tunnel Project on Engineering Procurement Construction (EPC) basis all complete” has been signed on March 9, 2022.

2. The feasibility study of Dharan Leuti, Khutiya Dipayal and Godavari-Manechaur Road Tunnel are currently undergoing and expected to be completed by the end of Chaitra 2078.
3. The consultant selection procedure for the following road tunnels projects is currently being undertaken,

Feasibility Study	Detail Feasibility
a) Babai Chinchu Road Tunnel, Surkhet	a) Hemja Nayapul Road Tunnel, Kaski
b) Baglung-Beu-Narethathi Road Tunnel, Baglung	b) Dumkibas-Bardaghat Road Tunnel, Nawalpur
c) Fusrekholo-Chorepatan(Pokhara)-Syangja-Gudikhola Road Tunnel, Kaski, Syangja	
d) Rara Rajmarga Kusepatan-Jajarkot(Byaulidhunga)-Jumla (Imlicha Khola) Road Tunnel, Jumla	
e) Prabhas-Jorte (Palpa) Road Tunnel, Palpa	
f) Tathali-Rabiopi Road Tunnel, Bhaktapur, Sindhupalchowk	
g) Shaktikhor Majhimtar Road Tunnel, Chitwan	
h) Sunmai-Rajduwali Road Tunnel, Illam	

4. The contract agreement (Contract No. DOR_QRDC/EPC/NCB/GFP/077/78-13) between the Department of Roads, Quality Research and Development Center and Contractor M/S Ashish-Samanantar-Relligare JV, Kathmandu for the execution of Planning, Design, Engineering, Procurement and Construction of 4 lane Flyover with approach road at Gwarko Intersection along Kathmandu Ring Road on Engineering Procurement Construction (EPC) basis all complete” has been signed on February 10, 2022.
5. The consulting service for design of grade separated intersection at 4 locations along Strategic Road Network is at RFP stage.