

ANNEXURES

TO

NHA CODE

1999 as revised in 2005

VOLUME-II

ANNEXURE – 1: National Highway Authority Roads Maintenance Account Rules, 2003

ANNEXURE – 2: Standard Operating Procedure for Road Maintenance Account (RMA) – 2002, Revised in 2005

ANNEXURE – 3: The Public Procurement Rules, 2004

ANNEXURE – 4: Regulatory Framework and Standard Operating Procedures for Preservation and Commercial Use of Right of Way (ROW) – 2002 Revised in September 2004

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ANNEXURE – 1

**National Highway Authority
Roads Maintenance Account Rules, 2003**

Immediate

Government of Pakistan
Ministry of Communications

No. 4(4)/96-Roads

Islamabad, the August 20, 2003

Office Memorandum

Subject: National Highway Authority Roads Maintenance Account Rules, 2003

The undersigned is directed to forward herewith Notification on the above subject for publication in the next issue of Gazette of Pakistan.

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Deputy Director (Roads)

The Manager,
Printing Corporation of Pakistan Press,
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Karachi.

CC:- Chairman, NHA -- For kind information please along with a copy of rules.

Chairman *20/8*

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No. 4(4)/96-Roads
Dated 20/8/03
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**TO BE PUBLISHED IN THE NEXT ISSUE
OF GAZETTE OF PAKISTAN**

**Government of Pakistan
Ministry of Communications**

Islamabad, the 21st Aug. 03

NOTIFICATION

S.R.O. (I)/2003. In exercise of the powers conferred by Section 31 of the National Highway Authority Act, 1991 (XI of 1991), the Federal Government is pleased to make the following rules, namely:-

1. Short title and commencement:- (1) These rules may be called the National Highway Authority Roads Maintenance Account Rules, 2003.

(2) These shall come into force at once.

2. Definitions:- In these rules, unless there is anything repugnant in the subject or context;-

- (a) "Act" means the National Highway Authority Act, 1991 (XI of 1991);
- (b) **AChairman@** means the Chairman of National Highway Authority;
- (c) **Acorridor management@** means carrying out regulatory functions of the National Highway Authority as custodian of the public assets including management of right of way and building line (removal of encroachments, ribbon development, utilities, access or approach roads, afforestation, commercialization), roadside facilities (service and rest areas, filling stations, amenities), traffic and highway safety operations (enforcement of traffic laws and rules, roadside emergency telephone service, mobile vehicle repairs and rescue service, para medical service), weigh station operations, and toll operations;
- (d) **AExecutive Board@** means the Executive Board of the National Highway Authority established under section 7 of the Act;
- (e) **Ageometric improvements@** means improvements related to width, curvature, or gradient of roadway, shoulders or structures specified in the Standard Operating Procedures to enhance traffic capacity, speed, and safety;

- (f) **Highway safety improvements@** means improvements specified in the Standard Operating Procedures related to accident-prone locations (black spots), and traffic and road engineering measures;
- (g) **Maintenance plan@** means prioritized annual network-level maintenance program of the National Highway Authority prepared using the Road Asset Management System described in the Standard Operating Procedures;
- (h) **National Highway Authority@** means the National Highway Authority established under section 3 of the Act;
- (i) **Roads Maintenance Account@** means the Roads Maintenance Account established under rule 3;
- (j) **Periodic maintenance@** means the act of reinstating the pavement structures, shoulders, embankments, hydraulic structures, drainage systems, and road furniture to some minimum acceptable structural, functional and safety condition levels and includes corrective maintenance activities specified in the Standard Operating Procedure required in any given year after structural, functional and safety related deficiencies have arisen requiring urgent localized maintenance intervention;
- (k) "Revenue and Accounts Section" means the Revenue and Accounts Section referred to in sub-rule (1) of rule 11;
- (l) **Road Asset Management System@** means the Road Asset Management System described in the Standard Operating Procedure;
- (m) **Routine maintenance@** means the act of preserving the pavement structures, shoulders, embankments, hydraulic structures, drainage systems, and road furniture against the combined effects of traffic, climate and topography, with a view to prevent premature failures by ensuring the road projects last the design life and includes preventive maintenance activities required every year before structural, functional and safety deficiencies arise as specified in the Standard Operating Procedure;
- (n) **Road Asset Management Directorate@** means the Road Asset Management Directorate established under the National Highway Authority as recommended by the Executive Board and approved by the Federal Government;

- (o) **Rehabilitation** means the activities required to reinstate the pavement and hydraulic structures to the same conditions they were at the time of construction or subsequent reconstruction and essentially includes strengthening activities specified in the Standard Operating Procedure to restore structural strength and functional performance for continued serviceability;
- (p) **Revenues** means revenues accruing to the National Highway Authority from road users and other sources specifically for maintenance and road safety; and
- (q) "Standard Operating Procedure" means the Standard Operating Procedure approved by the Executive Board for executing Roads Maintenance Account related activities.

3. Roads Maintenance Account.- (1) The National Highway Authority shall maintain a commercial non-lapsable account in Pakistani scheduled banks designated as Roads Maintenance Account.

(2) All revenues from road users accruing to the National Highway Authority, from the following sources, net of collection costs, shall be expeditiously transferred into the Roads Maintenance Account, namely:-

- (a) Tolls on roads and bridges;
- (b) road use related fines (e.g., overloading, traffic offence);
- (c) axle load charges;
- (d) supplementary heavy vehicle fee;
- (e) international transit fees; and
- (f) border fees.

(3) The National Highway Authority shall also transfer all revenues accruing to it, from time to time, from the following other sources into the Roads Maintenance Account, namely:-

- (a) Charges for commercial use of right of way;
- (b) profits on bank deposits and income on investment of moneys in the Roads Maintenance Account;
- (c) annual maintenance grant from the Federal Government;
- (d) maintenance funds provided by international donor agencies;
- (e) loans secured to finance any maintenance work shortfall; and
- (f) endowments and donations for maintenance and road safety from any organization, group or person.

4. Administrative management of Roads Maintenance Account. (1) The Road Asset Management Directorate shall manage and administer the Roads Maintenance Account using approved disbursement procedures detailed in the Standard Operating Procedure.

(2) The Road Asset Management Directorate shall prepare an annual

report on the policies and main activities of the Roads Maintenance Account during the preceding financial year, in coordination with the Revenue and Accounts Section.

(3) The Road Asset Management Directorate shall assist the Regional Offices of the National Highway Authority in organizing regular, at least annual, structured consultations as detailed in the Standard Operating Procedure with key stakeholders, including road users representatives, on proposed maintenance plan and past year's performance, and in reporting on the feedback received during these consultations in its annual report.

(4) Each year, following endorsement by the Executive Board, the Road Asset Management Directorate shall post the annual report and audited accounts along with the auditor's report relating to the Roads Maintenance Account on website of the National Highway Authority, and make copies available to the public at Head Office of the National Highway Authority and its Regional Offices.

5. Review and revision of Roads Maintenance Account.- (1) the Road Asset Management Directorate shall regularly review the level of tolls, and other levies being channeled into the Roads Maintenance Account and recommend adjustments to the Chairman, to match revenues with expenditures needed to fully address the network-level maintenance needs of the National Highway Authority.

(2) Toll levels shall be adjusted over time to reflect the following as far as possible, namely:-

- (a) Extent of road use;
- (b) damage caused to network; and
- (c) level of service provided.

(3) Any upward or downward adjustment or revision in the level of tolls and other levies shall be duly disseminated to the public through the press.

6. Revenue Collection arrangements for Roads Maintenance Account.- (1) The National Highway Authority shall ensure cost-effective, transparent, and accountable arrangements for the collection of the Roads Maintenance Account revenues.

(2) Contract-based revenue collection arrangements shall be pursued to the extent possible and such arrangements shall include,-

- (i) payments through bank transactions directly into the Roads Maintenance Account in designated bank by various public and private sector agencies responsible for the collection of the Roads Maintenance Account revenues after deduction of their commission, charges and expenditure in accordance with the terms and conditions of the contract; and
- (ii) an effective internal control system and regular internal audit for verifying amounts collected and for resolving any dispute

between the National Highway Authority and its collecting agents and any other concerned party.

(3) The Road Asset Management Directorate shall oversee implementation of all arrangements for collecting revenues in the Roads Maintenance Account and advise the top management of the National Highway Authority where changes are needed in such arrangements.

7. Disbursement of Roads Maintenance Account.- (1) Funds shall only be withdrawn from the Roads Maintenance Account for the purposes of financing eligible expenditures, described in rule 9.

(2) The Road Asset Management Directorate shall disburse a payment after receiving certification from the "Engineer" that the works, goods and services have been carried out and delivered according to the specifications.

Explanation.- For the purposes of this sub-rule, the word "Engineer" means any person employed by the Chairman for supervision and execution of a contract between the National highway Authority and a contractor.

(3) Payments to a contractor shall only be made either through a mailed "Payee's A/c Only" cheque or by transfer into bank account of beneficiary through bank, signed by two authorized signatories nominated by the Member (Finance) of the National Highway Authority.

8. Maintenance plan.- (1) The Road Asset Management Directorate shall prepare a maintenance plan, and the budget in consultation with the Regional Offices and various stakeholders by the 31st March every year, using the Road Asset Management System described in the Standard Operating Procedure.

(2) The Steering Committee comprising of the Member (Planning); the Member (Operations); the Member (Finance); the Regional General Managers; the General Manager (Contracts); the General Manager (Operations); and the Director, Road Asset Management Directorate shall review the maintenance plan and the budget

(3) The Steering Committee shall, after due deliberations, forward the maintenance plan, and the budget along with its final recommendations to the Chairman for approval.

9. Eligible expenditures.- (1) Eligible expenditures from the Roads Maintenance Account shall only comprise expenditures for the following, namely:-

- (a) Maintenance Plan;
- (b) rehabilitation of existing network assets of the National Highway Authority which have acceptable net present value and economic rates of return;

- (c) geometric Improvements of the existing network assets of the National Highway Authority up to a maximum of six per cent of annual revenues;
- (d) highway safety improvements up to a maximum of five per cent of annual revenues;
- (e) establishment of new toll plazas with automated electronic toll and traffic management system, access control, and weigh stations up to a maximum of two and half per cent of annual revenues; and
- (f) expenditure related to corridor management up to a maximum of one and half per cent of annual revenues including related surveys and studies.

(2) The works, goods and services referred to in sub-rule (1) shall be procured through competitive contracting procedures pursuant to the requirements of the Financial Manual, the National Highway Authority Code and the Conditions of the contract between a contractor or, as the case may be, consultant or supplier and the National Highway Authority.

(3) The Roads Maintenance Account resources shall not be withdrawn to bridge finance non-eligible expenditures or be allocated or reappropriated for the development projects and capital works.

10. Charges on Roads Maintenance Account.- (1) Eligible expenditures from the Roads Maintenance Account shall have the following priority, namely:-

- (a) First charge: Routine and periodic maintenance.
- (b) Second charge: Rehabilitation.
- (c) Third charge: Geometric Improvements and highway safety improvements.
- (d) Fourth charge: New toll plazas and weigh stations.
- (e) Fifth charge: Corridor management

11. Financial management of Roads Maintenance Account.- (1) A specifically designated " Revenue and Accounts Section" under the Finance Wing of the National Highway Authority shall maintain the Roads Maintenance Account using International Accounting Standards as accepted in Pakistan for financial reporting and would be responsible for internal controls and auditing arrangements.

- (2) The Revenue and Accounts Section shall be responsible to,-
 - (i) keep proper books of the Roads Maintenance Account (cash and bank books, ledgers, asset register), and maintain records of all receipts and all disbursements into and from the Roads Maintenance Account;

- (ii) prepare and submit for audit in respect of each financial year a balance sheet, a statement of income and expenditure, and a statement of cash flow, along with annual report of the Roads Maintenance Account prepared by the Road Asset Management Directorate pursuant to rule 4;
- (iii) prepare the annual financial statements within three months of the close of financial year; and
- (iv) submit the annual financial statements to the Executive Board for its approval.

(3) Subject to section 24 of the Act, a firm of chartered accountants appointed as independent auditors by the Executive Board shall audit the Roads Maintenance Account and financial statements annually. In addition, the Executive Board shall periodically engage an independent, reputable professional firm or individual for undertaking a technical audit of the activities financed by the Roads Maintenance Account.

(4) Subject to statutory provision in the Act, the auditors shall complete the audit within three months of submission of financial statement to them but not later than the 31st December each year.

(5) The auditors shall include in their report, assessments relating to achievement of the objectives of the Roads Maintenance Account, compliance with approved policies, rules and the Standard Operating Procedure.

(6) The report of the auditors shall contain detailed appraisements on the following, namely:-

- (a) The accuracy of the record and financial accounts of the Roads Maintenance Account;
- (b) the completeness of income of the Roads Maintenance Account;
- (c) whether the level of tolls and other revenues are in accordance with rule 5;
- (d) whether disbursements are in accordance with rule 7;
- (e) the conformity of payments with the eligible expenditures as laid down in rules 7 and 9;
- (f) the conformity of payments with the priorities laid down in rule 10;
- (g) accuracy of accounting and internal control procedures;

- (h) the effectiveness of the administration of the Roads Maintenance Account; and
- (i) analysis of variances between the budgeted and actualities.

(7) The Executive Board shall review and endorse the annual report referred to in sub-rule (2) of rule 4, and audited accounts of the Road Maintenance Account along with the auditors report and forward the same, within one month, to the Auditor General of Pakistan through the administrative Ministry.

(8) The financial year of the National Highway Authority and the Roads Maintenance Account shall be the period of twelve months commencing on the 1st July each year and ending on the 30 June of the following year.

[No. 4(4)/96-Roads]

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ANNEXURE – 2

**Standard Operating Procedure for
Road Maintenance Account (RMA) – 2002,
Revised in 2005**

Government of Pakistan
Ministry of Communications

NATIONAL HIGHWAY AUTHORITY



STANDARD OPERATING PROCEDURE

FOR

**ROAD MAINTENANCE ACCOUNT
(RMA) - 2002**

Revised in 2005



OPERATION WING

**ROAD ASSET MANAGEMENT DIVISION
(RAMD)**

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CHAPTER ONE

INTRODUCTION

1.1 Role of Road Transportation in Pakistan

Pakistan's national transport system consists primarily of three modes of transportation namely road, rail and air. Inland water transportation system is basically nonexistent and coastal shipping only serves minor local movements. Pipeline transportation is in its initial stages of development.

Of the three primary transportation modes, road transportation overwhelmingly dominates the other two transport systems. Modal split data shows that roads approximately carry:

- , 107,000 million ton-kilometers of freight annually compared to 5,000 million ton-kilometers and 25 million ton-kilometers by rail and air respectively, and
- , 90% of passenger traffic compared to 8% and 2% by rail and air respectively.

Clearly, roads are the backbone or lifelines of Pakistan's economy.

The total length of the road network in the country is approximately 258,000⁺ kms consisting of about 153,000 kms of paved roads (high type) and 105,000 kms of gravel roads (low type).

Length of National Highways is 9516 kms and comprises primarily of the strategic and principal arterial routes that serve inter-provincial long distance traffic, including important commercial cities and major freight terminals. Though, the length of National Highways is only 3.7% of the entire road network of the country but they carry more than 80% of the country's traffic.

The present asset replacement value of National Highways exceeds Rupees 600 billion. This amount represents largest single asset investment in Pakistan.

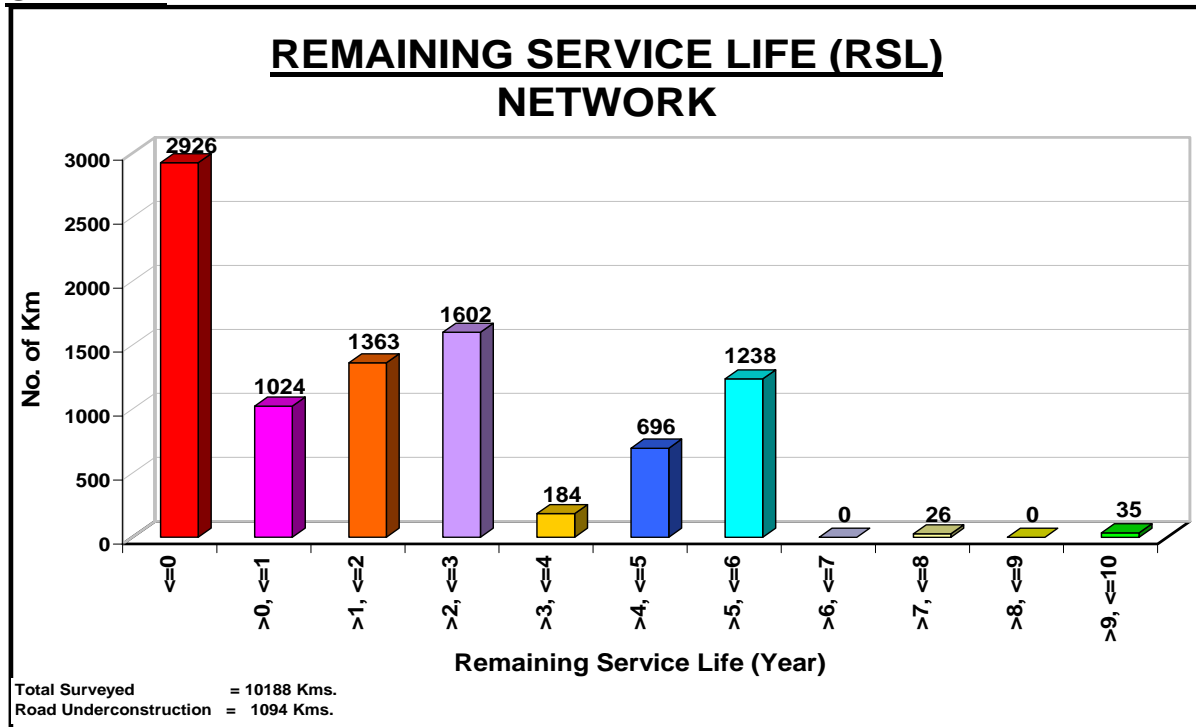
1.2 Present Condition of National Highways

Unfortunately, with the growth in traffic volume and axle load levels, and inadequate maintenance, this large asset investment is deteriorating at an alarming rate.

Results of pavement condition surveys conducted in year 2005 by NHA show that 43% of the existing NHA's network has remaining service life from 0 to 1 year which requires major rehabilitation or reconstruction. The remaining will be lost in the

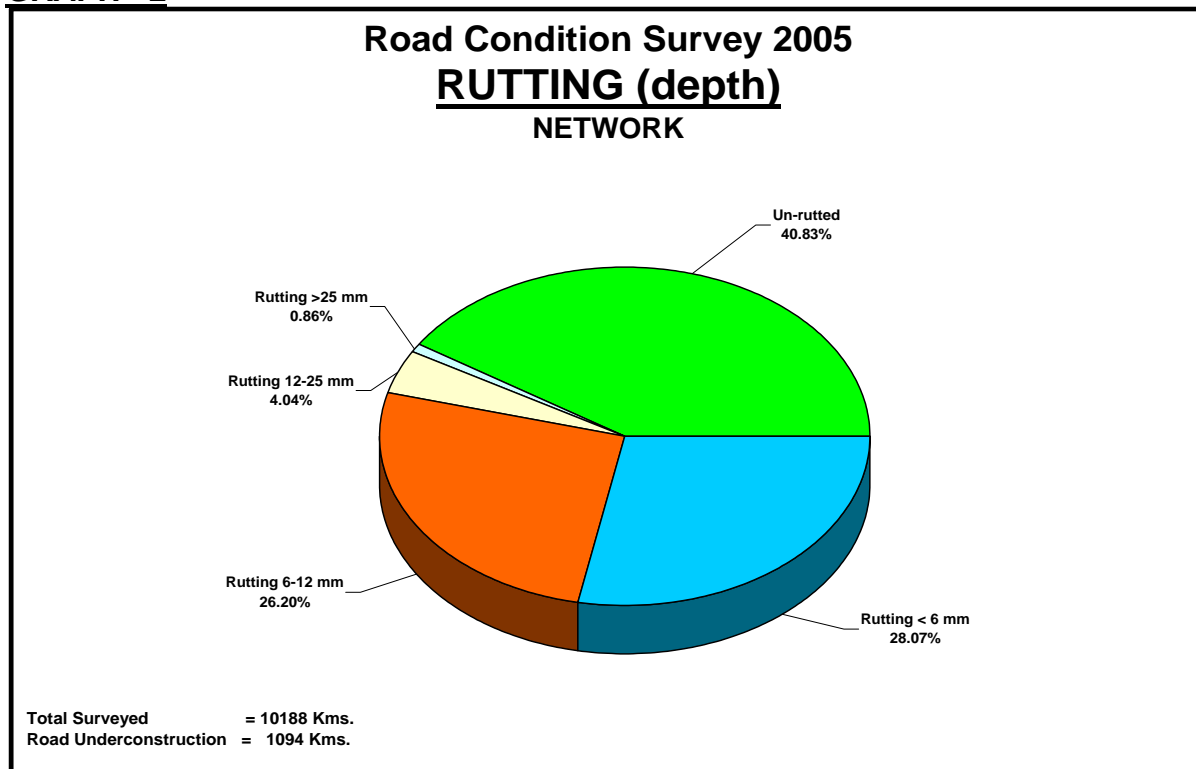
near future if adequate maintenance and rehabilitation actions are not taken in a timely and effective manner. The graph shows Remaining Service Life of the national highway network is as under (**Graph - 1**)

GRAPH - 1

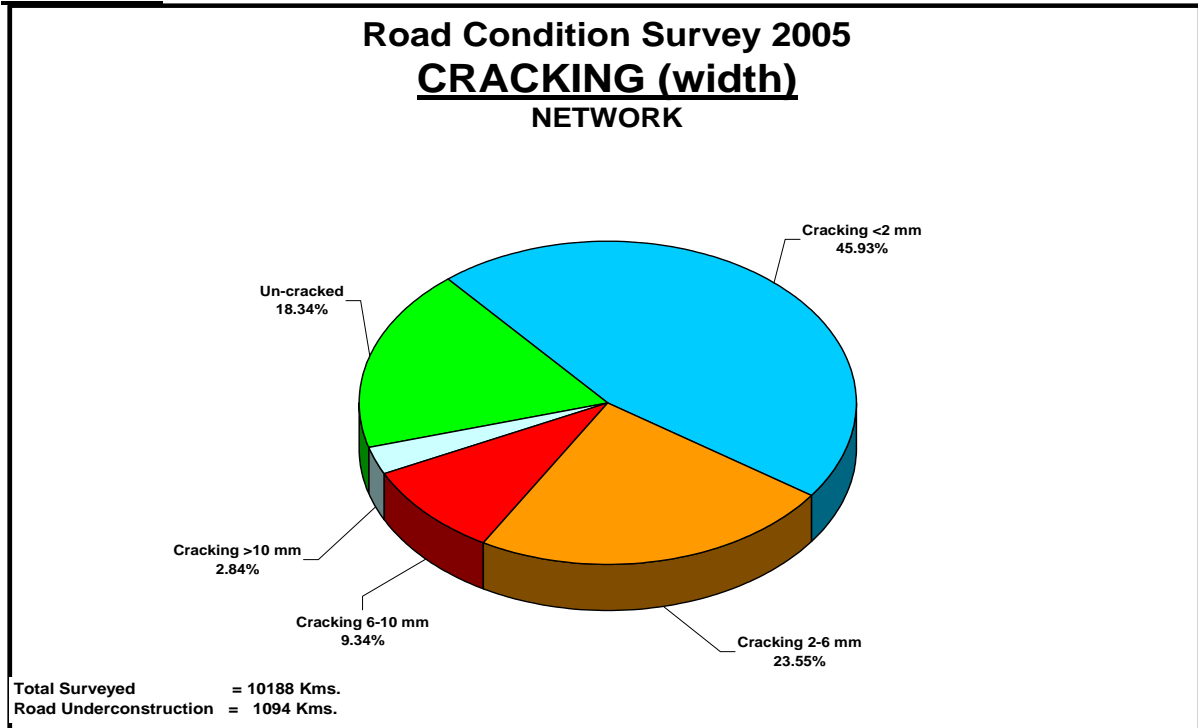


Pavement condition data 2005 comprising of Rutting (Depth) and Cracking (Width) is shown in the form of pie charts (**Graph - 2 & 3**) as follows:

GRAPH - 2



GRAPH - 3

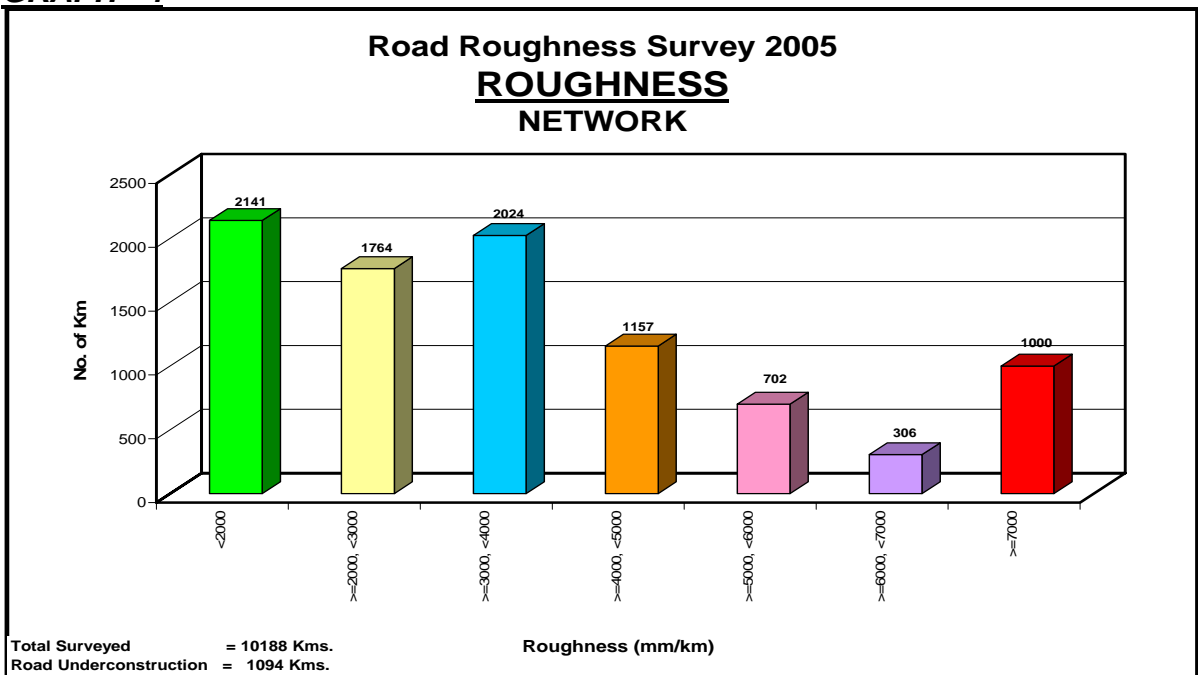


1.3 Adverse Effects on Economy

Cracks and ruts cause roughness in Asphalt Concrete (AC) pavements. Roughness, a measure of pavement ride quality (functional performance), greatly influences the vehicle operating costs such as fuel and oil consumption, tires wear, parts replacement, vehicle depreciation, travel time and accidents.

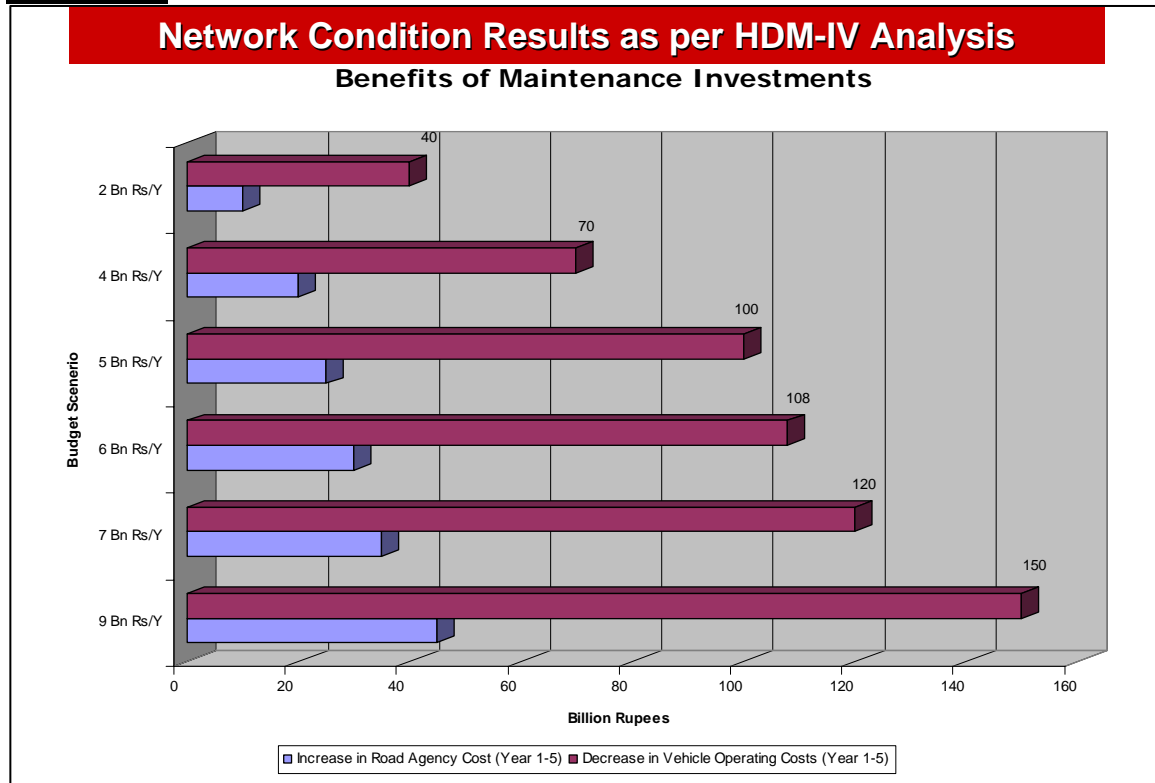
Results of year 2005 Pavement Roughness Survey are shown in the following graph (Graph - 4):

GRAPH - 4



With regard to the benefits of maintenance investments, various budget scenarios have been plotted in the following graph (**Graph – 5**). For example, if NHA spends Rs. 7 billion per annum, the decrease in VOC is about Rs. 120 billion/years. This shows about 113 billion rupees saving to national exchequer in the form of fuel import bill, etc.

GRAPH - 5



As per HDM-VI analysis 2005, about Rs. 9 Billion per year is required for the next five (05) years to reduce the average roughness to 4 IRI for present NHA road network, and this strategy will result in a saving of Rs 240 billion (NPV) in road transportation costs alone.

1.4 Root Cause of the Present Situation

The present situation of the road network is due to disinterest (political expediency) and neglect (unawareness of economic consequences of deferred and/or under funded maintenance). These two factors resulted in a tendency that promoted disproportionate budgeting that resulted in a vast imbalance in development and maintenance expenditures.

NHA's annual development expenditure has seen a manifold increase since the 1990's, whereas its maintenance allocations have stagnated at less than 4% of the annual development budgets. Consequently, the gap between maintenance funds demand and allocation has broadened every passing fiscal year. More alarmingly, the proportion of maintenance allocations actually released has declined sharply during the last decade, from almost 60 percent to just over 20 percent of the allocated amounts.

1.5 Recognition of the Problem

The natural outcome of the tendency to neglect maintenance in favour of development projects is a huge maintenance backlog. The Government of Pakistan (GOP) recently realized that if it continues to neglect maintenance and rehabilitation, the remaining road network will also crumble prematurely and the associated avoidable costs will form a formidable obstacle to the socioeconomic development of Pakistan.

Thus, GOP concluded that NHA must undertake preservation of the road network, which not only is an asset worth hundreds of billions of Rupees but also is absolutely vital to growth of the national economy.

This preservation strategy inherently incorporates pavement ride quality and highway safety improvements that will help reduce overall transportation costs to the economy, and increase competitiveness of the country's exports.

1.6 Vision 2001

Accordingly, NHA has articulated a new vision that envisages transition from the network expansion phase to a consolidation phase. The focus is now on preservation of road assets through timely maintenance and rehabilitation of the network.

NHA is using its best efforts to maximize Off-Budget financing for road maintenance to ensure that it does not repeat the past mistake of under funded road maintenance again. It is actively devising innovative Off-Budget financing solutions for effective and sustainable road maintenance. A country workshop in 1997 on "Dedicated Highway Fund" for road maintenance marked the commencement of the new vision.

1.7 Commercialization of the Road Sector

Vision 2001 also states that NHA must grow into an efficient service provider to road users in Pakistan for safe and comfortable travel on National Highways and Motorways. To realize Vision-2001, NHA is following the concept of commercialization of the road sector embodying the following principles:

- , bring road maintenance into market economy,
- , put road maintenance on fee-for-service basis, and
- , manage road maintenance like a business rather than a bureaucracy and promote corporate structure.

In this regard, NHA organized a country workshop, co-sponsored by the Ministry of Finance and the World Bank to develop the consensus among the various stakeholders on achieving financial self-sufficiency and to win public support for the principle that road users should pay for the maintenance requirements that arise due to their usage of roads. All the participants reached a consensus on the following:

- , Additional revenues should come from road users, and
- , Maintenance money should be channeled through a road fund.

Accordingly, NHA has commenced implementation of fee-for-use concept on the National Highways and Strategic Roads Network under its jurisdiction. Tolls are being collected from road users on N-5, N-25, N-35, N-40, N-45, N-55, N-65, N-70, M-1, M-2, M-3 & M-9.

In addition, NHA has implemented Operations and Management (O&M) system on all National Highways and Motorways under three categories:

- i) Collection by public sector organizations i.e. FWO & NLC on services based contract with penalty system on performance.
- ii) Collection by Private sector with advanced investment in ETTM system and guaranteed enhanced revenue.
- iii) Collection by NHA staff.

1.8 Road Maintenance Account

NHA has established a Road Maintenance Account (RMA), financed by road user revenues and earmarked other sources to ensure a stable and secure source of maintenance and operations funding.

Government of Pakistan has notified RMA Rules known as National Highway Authority Roads Maintenance Account Rules, 2003. The Rules are attached as APPENDIX A.

1.9 Road Asset Management Division

NHA has established a Road Asset Management Division (RAMD) to cope with the requirements of fee-for-service/value-for-money concept embodied as the guiding principle of RMA.

NHA Executive Board accorded its approval of RAMD in its 92nd meeting held on 22nd March 2000. National Highway Council has approved its organization in its 16th meeting held on 4th October 2005.

The approved organizational structure, objectives and functions, and charters of duties of various personnel of RAMD are contained in APPENDIX B.

This Standard Operating Procedure (SOP) provides a process for operating the RMA in accordance with the National Highway Authority Roads Maintenance Account Rules, 2003.

1.10 National Highway Improvement Program (NHIP)

National Highway Improvement Program (NHIP) has been developed for preserving and enhancing the asset value of Existing Network. The financing plan from implementation of NHIP is given in Table 1.

Table 1: NHIP - Summary of Financing Plan for Year 2001-2008 (funded from World Bank + GOP + Toll Receipt)

(Rs. in Billion)

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	Total
World Bank assisted + GOP								
World Bank (civil works)	-	2.3	1.9	1.5	1.3	-	-	7
World Bank (T.A) *	-	0.2	0.3	0.3	0.2	-	-	1
GOP	-	0.2	0.2	0.2	0.2	-	-	0.8
Toll	-	0.9	0.9	0.85	0.8	-	-	3.45
Sub-Total	0	3.6	3.3	2.85	2.5	0	0	12.25
GOP + Toll								
GOP	0.8	0.5	0.4	0.3	0.3	0.3	-	2.6
Toll	1.9	1.4	1.7	2	2.3	3.7	4	17
Sub-Total	2.7	1.9	2.1	2.3	2.6	4	4	19.6
GRAND TOTAL	2.7	5.5	5.4	5.15	5.1	4	4	31.85

* Technical Assistance TA includes Design & Supervision, Capacity Building of NHA and Capacity Building of MOC

CHAPTER TWO

DEFINITIONS

RAMD shall use the following definitions for developing Maintenance Plan and Programmes:

2.1 Routine Maintenance

Means the act of preserving the pavement structures, shoulders, embankments, hydraulic structures, drainage systems, and road furniture against the combined effects of traffic, climate and topography, with a view to prevent premature failures by that ensuring that the road projects last the design life. It includes preventive maintenance activities required every year before structural, functional and/or safety deficiencies arise, including but not limited to:

- sealing of cracks (sealant, slurry and sand seal coats) to prevent water infiltration into the pavement structure,
- patching of potholes,
- evaluation of skid resistance data for detection of loss in pavement friction and, if needed, application of chip seals to prevent skid-related accidents,
- application of fog seal coats on granular/surface dressed shoulders to prevent/reduce raveling,
- re-compaction of earthen shoulders,
- grading of embankment edges,
- re-instatement of stone-pitching and/or grassing of side slopes to prevent embankment erosion,
- reshaping and/or cleaning of the side and median longitudinal ditches, and cross-drains to prevent water pounding and reaching the pavement structural layers,
- re-painting of faded lane markings, traffic signs, and parapets of hydraulic structures, and
- vegetation control.

2.2 Periodic Maintenance

Means the act of reinstating the pavement structures, shoulders, embankments, hydraulic structures, drainage systems, and road furniture to some minimum acceptable structural, functional and safety condition levels. It includes corrective maintenance activities required in any given year after structural, functional and/or safety related deficiencies have arisen requiring urgent localized maintenance intervention, including but not limited to:

- patching with thin hot mix overlay,
- cold milling of ruts or level-up overlay in wheel paths,
- replacement of localized swell and heave stretches,
- application of chip seals to restore skid resistance,
- removal of edge steps (lane/shoulder drop off) and re-instatement of granular/surface-dressed shoulders,
- repair and/or replacement of broken pipe culverts/drains, and kerb, gutter, chute system,
- re-sealing of joints in hydraulic structures,
- mortar repairs of brick and stone masonry hydraulic structures including parapets,
- mortar repairs of retaining structures, and
- refurbishment of traffic control and safety devices (damaged or missing chain-link fence, traffic signs, guardrail, impact attenuator, new jersey median barrier, delineators, cat eyes, pavement lane markings, and faulty lighting fixtures and traffic signals, and toll collection hardware and software facilities.
- Stabilization of slopes
- direct Asphalt Concrete functional/structural overlays on pavement sections that are still in reasonably good condition,
- hot recycling to produce structural or functional Asphalt Concrete overlays using reclaimed asphalt pavement from a cold milling operation, new aggregate, new asphalt cement, and a recycling agent, if needed,

2.3 Rehabilitation

Means the activities required to reinstate the pavement and hydraulic structures to the same conditions they were at the time of construction or subsequent reconstruction. It essentially includes strengthening activities to restore structural strength and functional performance for continued serviceability, including but not limited to:

- full-depth patching with bituminous mixtures to repair alligator cracking, rutting, and corrugation,
- cold recycling of failed pavement structural layers (particularly base/subbase courses) overlaid with structural or functional Asphalt Concrete overlays,
- direct Asphalt Concrete structural overlays on pavement sections that are still in reasonably good condition,
- reconstruction that is removal and replacement of existing badly deteriorated pavement structures, and
- major repairs/reconstruction of drainage structures & bridges.

2.4 Emergency Maintenance

Means the works urgently needed to ensure (i) road user safety, and (ii) continued traffic flow on the network, which cannot be foreseen in the normal maintenance planning cycle in addition to damages caused due to:

- landslides,
- snow,
- flash flood, and
- road accidents.

2.5 Geometric Improvements

Means the improvements related to width, curvature, or gradient of roadway, shoulders or structures to enhance traffic capacity, speed, and safety, including:

- provision of service roads to segregate local and through traffic,
- provision of separate climbing lanes for trucks,
- provision of properly designed on- and off-ramps at petrol pumps and such like locations along the roadway, and
- provision of properly designed bus bays for drop and pick up of the passengers

2.6 Highway Safety Improvements

Means the improvements related to accident-prone locations (black spots), traffic and road engineering measures, and emergency maintenance operations related to public safety and uninterrupted flow of traffic, including:

- immediate removal of any debris (e.g., glass, parts of a blown tyre etc.) left on the road from an accident or other incident
- provision of properly constructed and marked bays for the parking of highway police vehicles along the roadside,
- provision of properly designed U-turns for the highway police, and emergency rescue/para medical vehicles,
- provision of anti-glare devices particularly in the case of new jersey median barrier,
- provision of overhead pedestrian crossings, and
- provision of other traffic safety devices where not installed.

2.7 Corridor Management

Means the act of carrying out NHA's regulatory functions as custodian of the public asset, including:

- management of right of way and building line (encroachments, ribbon development, utilities, access/approach roads, afforestation, commercialization, proposal for busbays, commercial underpasses/overpasses etc on Build-Operate, Own & Transfer (BOOT) basis,
- roadside facilities (service and rest areas, filling stations, amenities),
- traffic and highway safety operations (public awareness campaigns, enforcement of traffic laws and rules, roadside emergency telephone service, mobile vehicle repairs and rescue service, para medical service), and
- weigh station operations, toll operations and related studies and activities.

2.8 RMA Technical Scrutiny Party

Means the RMA Technical Scrutiny Party (RMA-TSP) comprising the following:

- General Manager (Operation) Chairperson
- General Manager (Finance) Member
- General Manager (Planning and Design) Member
- General Manager (Contracts) Member
- Respective/Concerned Regional GM Member
- Representative of NH&MP Member
- Representative of NTRC Member
- Director (RAMS) Secretary

2.9 RMA Steering Committee

Means the RMA Steering Committee comprising the following:

- Member (Operations) Chairperson
- Joint Secretary (MOC) Member
- Member (Finance) Member
- Member (Planning) Member
- Chief (T&C) Planning Commission Member
- Rep NH&MP Member
- Deputy Chief NTRC Member
- GM (Operations) Secretary

2.10 Administrative Approval

Means the formal acceptance by the competent authority of proposal for incurring expenditure on a work connected with the requirements of the RMA. It is, in effect, an order to execute a specified work or to procure specified goods and services at a stated cost.

2.11 Technical Sanction

Means the order of the competent authority sanctioning a properly detailed estimate of the cost of a work, good, or service related to RMA.

Technical sanction shall be construed as a guarantee that the proposal is structurally sound and that the estimates are accurately calculated and based on adequate data.

2.12 Annual RMA Program

Means the works, goods, and services related to the implementation of the approved RMA activities, stipulated in Rule-9 of the National Highway Authority Roads Maintenance Account Rules, 2003.

CHAPTER THREE

DESCRIPTION OF KEY PAVEMENT DISTRESS TYPES

RAMD shall use **ADistress Identification Manual for the Long-Term Pavement Performance Project - SHRP-P-338** developed by Strategic Highway Research Program, National Research Council for conducting pavement distress surveys related to RMA. The following descriptions are for general guidance of survey teams.

3.1 Alligator Cracking

Alligator or fatigue cracking is a series of interconnecting cracks caused by fatigue failure of the asphalt concrete surface under repeated traffic loading. Cracking begins at the bottom of the asphalt surface (or stabilized base) where tensile stress and strains are highest under a wheel load. The cracks propagate to the surface initially as a series of parallel longitudinal cracks. After repeated traffic loading, the cracks connect, forming many-sided, sharp-angled pieces that develop a pattern resembling chicken wire or skin of an alligator. The pieces are generally less than 0.6 meter on the longest side.

Alligator cracking occurs only in areas subjected to repeated traffic loading, such as wheel paths. Therefore, it would not occur over an entire area unless the entire area was subjected to traffic loading.

3.2 Block Cracking

Block cracks are interconnected cracks that divide the pavement into approximately rectangular pieces. The blocks may range in size from approximately 0.3 by 0.3 meter to 3 by 3 meter. Block cracking is caused by shrinkage of the asphalt concrete and daily temperature cycling (which results in daily stress/strain cycling). It is not load associated. Block cracking usually indicates that the asphalt has hardened significantly. Block cracking normally occurs over a large portion of the pavement area, but sometime will occur only in non-traffic areas.

3.3 Rutting

A rut is a surface depression in the wheel paths. Pavement uplift may occur along the sides of the rut. Rutting stems from a permanent deformation in any of the pavement layers or subgrade, usually caused by consolidation of un-bound as well as bound layers with change in volume or plastic flow of asphalt-bound layers with constancy of volume.

3.4 Potholes

Potholes are bowl-shaped depressions usually less than 0.9 meter in diameter. They generally have sharp edges and vertical sides near the top of the hole. Potholes most often are structurally related distress.

CHAPTER FIVE

ROAD ASSET MANAGEMENT

5.1 Mission Statement

RAMD will aim to maintain and operate the National Highways and Strategic Roads to minimize the road transportation costs, provide driving comfort and safety to the road users at all times, and preserve the asset investment in roads, bridges and appurtenances cost effectively.

5.2 Specific Objectives

RAMD will endeavour and ensure that:

- i) Network-level roughness on National Highways and Strategic Roads progressively reduces to 3.0 IRI by the year 2010.
- ii) NHA's road network is maintained and operated, as far as budgets will allow, in a way that maximizes the road user/taxpayer benefits at the least possible cost.
- iii) Road users are provided value for money, and demonstrate this through user willingness to pay for such services and third party audits of expenditure on works carried out to meet defined road maintenance standards and assessed needs.

5.3 Implementation Tool

To achieve the above-stated mission and specific-objectives, RAMD will use Road Asset Management System (RAMS) as a tool to provide the decision and policy makers and highway manager's timely information to the following and/or similar questions in a systematic, coordinated, consistent and an objective manner:

- i) What are current average road transport costs on the NHA network, and how do these compare with regional/global benchmarks?
- ii) To what extent road transport costs on NHA's network are impacted by road infrastructure?
- iii) How do our customers (road users) view NHA's performance, and what are the key areas needing improvement?
- iv) What is the present condition of NHA's road asset, and how does this compare with NHA's medium to long-term vision for the network?

- v) What are the short, medium and long-term steps that NHA needs to take to improve the present health of the network?
- vi) What are medium to long term forecasts of NHA's funding requirements for specified target road maintenance and safety standards?
- vii) What are forecasts of NHA's road network long term performance under varying levels of funding?
- viii) What is optimal budget level required to maintain and operate the NHA's network in safe and comfortable driving conditions?
- ix) What would be the short, medium and long term effects on the condition of NHA's road asset if optimal budget level is not used in an efficient, effective and timely manner or not made available?
- x) How can NHA stretch the available resources to cover as many kilometers as possible while maximizing the benefit to cost ratio?
- xi) How can NHA work more effectively with legislators and road users to mobilize additional resources, if needed?
- xii) Which project or projects should NHA undertake next year and in future years as to maximize the benefits within the given resources?
- xiii) Which maintenance strategy will result in the highest rate of return (benefits) to society on the investment made to preserve the highway network?
- xiv) When is the right time to rehabilitate or reconstruct individual sections?

5.4 Road Asset Management System (RAMS)

Detailed Terms of Reference for Road and Bridge Asset Management System are attached as Appendix 'C'. The salient features are described as under:

RAMD shall embody the following guiding principles in its RAMS:

- , Road user (customer) focused and transparent,
- , Mission driven,
- , System oriented,
- , Long term in outlook,
- , Accessible and user friendly, and
- , Flexible.

RAMS shall consist of the following four components, developed and regularly updated:

1. Data Collection,
2. Central Database,

3. Decision Support System (Analytical Framework), and
4. Management Processing and Information (including key performance indicators).

5.5 Data Collection

RAMD will collect and regularly update the following data from 1st July through 15th September every calendar year:

5.5.1 Inventory Data

Roadway Inventory

- < Network Classification
- < Route Description
 - National Highway/Motorway/Strategic Road Number
 - Termini (kilometer posts)
 - At Grade Intersections and Grade-Separated Interchanges
 - Railroad Crossing Locations
 - Bypasses
- < Route Length
- < Right of Way
- < Building Line (and encroachments)
- < Number of Lanes in Each Direction
- < Lane Width
- < Surface Type
- < As-Built Layer Thicknesses
- < Shoulder Type
- < Shoulder Width
- < Median Type
- < Median Width
- < Estimated Road Gradient
- < Estimated Road Alignment
- < Location and Type of Retaining Walls
- < Embankments and Cuttings
- < Location and Description of:
 - Bridges
 - Culverts
 - Causeways
 - Irish Crossings
 - Tunnels
- < Location and Description of:
 - Fence
 - Guardrail
 - Cat eyes and delineators
- < Construction Start and Completion Dates

- < Construction and Project Cost
- < Maintenance and Rehabilitation Information and Cost

Bridge Inventory

- < Bridge Number and Name
- < Bridge Length, Width and Number of Spans
- < River or Stream Spanned, or Road or Rail Crossed
- < Type of Sub and Super Structure
- < Posted Load Rating (where applicable)
- < Construction Start and Completion Dates
- < Construction and Project Cost
- < Past Maintenance and Rehabilitation Information and Cost
- < Present Condition and Maintenance Requirements

Traffic Sign Inventory

- < Location (based upon the highway reference system)
- < Side of Roadway and Offset Distance
- < Type of Sign (by code)
- < Size and Height of Sign
- < Type of Support (pole, gantry etc)
- < Installation Date
- < Sign Condition, Last Date of Maintenance and Cost

5.5.2 Traffic Data

Vehicle Fleet

Types of vehicles (by category) and their basic characteristics such as gross vehicle weight, number of axles, number of tyres, seating capacity, payload, break horsepower etc.

Basic characteristic information for each vehicle category will be collected to meet all the input data requirements of HDM-4 for calculating vehicle speeds, operating costs, and travel time costs. The vehicle characteristic data include prices, taxes, custom duties etc.

◆ Traffic Volume

24-hour, 7-day classified traffic count surveys at strategic locations on NHA's network (initially 50) including all the main line and interchange toll plazas, and weigh stations. RAMD shall use NTRC traffic survey forms.

Traffic surveys and analysis shall be so designed and scheduled to allow estimating of seasonal correction factors, annual average daily traffic (AADT), directional distribution of AADT, and traffic volume growth rates for each vehicle classification.

Truck Loads

Truck gross and individual axle loads, and tyre pressures for each category of truck at all the weigh stations and at 10 randomly selected strategic locations on NHA's network.

Load surveys and analysis shall be so designed to allow estimates of percentage of empty and loaded trucks, and a truck damage factor that is the number of 18-Kip ESALs applied by each truck type classified according to axle configurations. RAMD shall use NTRC survey forms.

5.5.3 Pavement Condition Data

Distress

Alligator Cracking

< Severity Levels

- Low: Fine, longitudinal hairline cracks running parallel to each other with no, or only a few, interconnecting cracks (the cracks are not spalled)
- Medium: Further development of light alligator cracks into a pattern or network of cracks that may be lightly spalled.
- High: Network or pattern cracking has progressed so that pieces are well defined and spalled at the edges. Some of the pieces may rock under traffic.

< Measurement

Alligator cracking shall be measured in square meters of affected area at each severity level. Percentage cracked area for each severity level shall also be recorded.

Note that the major difficulty in measuring this type of distress is that two or three levels of severity often exist within one distressed area. If these portions can be easily distinguished from each other, they shall be measured and recorded separately. However, if the different levels of severity cannot be divided easily, the entire area shall be rated at the highest severity present.

Block Cracking

< Severity Levels

- Low: Blocks are defined by low-severity cracks with mean width less than 6 mm.
- Medium: Blocks are defined by medium-severity cracks with mean width 6 to 19 mm.
- High: Blocks are defined by high-severity cracks with width more than 19 mm.

< Measurement

Block cracking shall be measured in square meters of affected area at each severity level. Percentage cracked area for each severity level shall also be recorded.

Rutting

< Severity Levels

- Low: Rut depth 6 to 13 mm.
- Medium: Rut depth more than 13 to 25 mm.
- High: Rut depth more than 25 mm.

< Measurement

Rutting shall be measured as maximum rut depth in millimeters, at 15-meter intervals for each wheel path, as measured with a 1.2 meter straight edge. The mean rut depth shall be the average of the measured depth at 100 meter intervals along the length. Percentage rutting for each severity level shall also be recorded.

Potholes

< Severity Levels

- Low: Depth less than 25.4 mm.
- Medium: Depth 25.4 to 50.8 mm.
- High: Depth more than 50.8 mm..

< Measurement

Potholes shall be recorded by counting the number that are low, medium, and high-severity and affected area shall be measured in square meters at each severity level. Percentage potholes and affected area for each severity level shall also be recorded.

Ride Quality

Automated road roughness measurements.

The survey and analysis shall be so designed to allow calculation of International Roughness Index (IRI).

Structural Capacity

Falling Weight Deflectometer (FWD) testing.

The survey and analysis shall be so designed to allow determination of NHA-s networks structural capacity and its ability to support present and future traffic. Detailed deflection studies may be carried out at localized areas to ascertain causes of distress, and to locate inadequate support.

Surface Friction

Skid resistance measurement using a locked wheel equipped with a specific tyre at 64 kph.

5.5.4 Cost Data

User Cost

Vehicle's operating cost data.

User cost information for each vehicle category will be collected to meet all the input data requirements of HDM-4 for carrying out cost-benefit analysis.

Agency Cost

Unit costs for all maintenance, rehabilitation, and safety work items.

Initially latest CSR shall be used as the baseline. However, a copy of the Bill of Quantities (BOQ-s) of tenders submitted to NHA by contractors for the award of maintenance contracts shall be obtained and recorded separately in the database.

Comparison of latest CSR unit costs and tender costs shall be carried out to derive information on current market price trends.

RAMD shall develop a unit cost calculation software, update unit costs on an annual basis, and as required by a significant change in the Consumer Price Index (CPI).

5.6 Central Database

◆ Data Storage

- < The data shall be stored on a high-capacity central computer that is accessible from several personal computer terminals.
- < Each type of data shall be stored in a separate block of the database.
- < Each block shall be properly coded for easy access by the users and connected to other blocks using a common referencing system.
- < Inputs to the central database shall be accomplished using an automated management system and a data manager (editor).
- < The data manager (editor) shall verify and check that the data is uniform, accurate and properly coded before entry.

Data Retrieval

- < In order to maintain the integrity of database, access for data input from all users shall be protected, by appropriate levels of security (read, write access, etc.). Users, other than the data manager (editor), shall be able to only view or retrieve the data.

- < Data shall be accessible from personal computer terminals linked with the central computer through Local Area Network (LAN). RAMD shall endeavour to provide access through Wide Area Network (WAN) and NHA website in the future.

5.7 Maintenance and Improvement Standards

RAMD shall develop, review and update annually maintenance and improvement standards based on observed performance in the field.

However, till such time RAMD develops a set of alternatives based on long term pavement performance monitoring, it shall initially use the following maintenance and improvement standards on NHA's road network.

- , Maintenance of shoulders, drainage ditches, road markings, roadside furniture and vegetation control, as required.
- , Patching potholes, as required.
- , Sealing cracks of low and medium-severity level, as required.
- , Resealing (triple surface dressing) on surface treated sections with cracking on more than 25% of the pavement surface area. This work includes crack sealing, pothole patching prior to resealing.
- , Resealing (5-cm asphalt concrete) on asphalt concrete pavement sections with cracking on more than 25% of the pavement surface area. This work includes full-depth repair, crack sealing, and pothole patching prior to resealing.

Treatment Intervention Levels

Traffic Band: AADT < 1000
Road Type: Asphalt Concrete

Operational Class	Treatments Operation Description	Distresses (Triggering Value)	
		IRI	Cracking
Routine Maintenance		≤5	20%
Functional Overlays	5 cm Overlay	≥.5	≥25
Structure Overlays	12 cm Overlay	≥7	≥40
Rehabilitation	30cm Gran. Base / 16 cm AC	≥10	≥50
	25 cm WBM / 16 cm AC		
	25 cm WBM / 5 cm AC		

Traffic Band: 1000 <= AADT < 2000
 Road Type Asphalt Concrete

Treatments		Distresses (Triggering Value)	
Operational Class	Operation Description	IRI	Cracking
Routine Maintenance		<=4.5	20%
Functional Overlays	5 cm Overlay	>=6	>=25
Structure Overlays	12 cm Overlay	>=10	>=40
Reconstructions	30cm Gran. Base / 16 cm AC	>=12	>=50
	25 cm WBM / 16 cm AC		
	25 cm WBM / 5 cm AC		

Traffic Band: 2000 <= AADT < 3000
 Road Type Asphalt Concrete

Treatments		Distresses (Triggering Value)	
Operational Class	Operation Description	IRI	Cracking
Routine Maintenance		<=3.5	20%
Functional Overlays	5 cm Overlay	>=4	>=25
Structure Overlays	12 cm Overlay	>=6	>=40
Reconstructions	30cm Gran. Base / 16 cm AC	>=10	>=50
	25 cm WBM / 16 cm AC		
	25 cm WBM / 5 cm AC		

Traffic Band: AADT > 3000
 Road Type Asphalt Concrete

Treatments		Distresses (Triggering Value)	
Operational Class	Operation Description	IRI	Cracking
Routine Maintenance		<=3	20%
Functional Overlays	5 cm Overlay	>=3.5	>=25
Structure Overlays	12 cm Overlay	4	>=40
Reconstructions	30cm Gran. Base / 16 cm AC	>=8	>=50
	25 cm WBM / 16 cm AC		
	25 cm WBM / 5 cm AC		

5.8 Decision Support System

RAMS shall incorporate HDM-4 and subsequent updates as its Decision Support System.

RAMD will conduct the following studies using the updated data during September/October every calendar year:

Strategy Analysis

The objective of this study is to determine the required funding levels for the specified maintenance and improvement

standards, and to monitor the effect of budget constraints on the long-term network performance trends.

Programme Analysis

The objective of this study is to select a short list of projects for NHA that can be carried out within the funding likely to be available for the next maintenance year, and select that combination of treatment options that maximizes Net Present Value (NPV).

RAMD shall follow the following steps to achieve the above-stated objective:

- Prepare a long list of candidate projects selected as discrete segments of NHA's road network based on the results of latest network-level data analysis, typical uniform sectioning techniques, and recommendations made by the Regions on highest priority sections requiring attention during the next maintenance cycle.
- Assign multiple maintenance and improvement standards to the candidate road sections together with the unit costs.
- Determine the unconstrained work programme results giving the total funding required for the long list of candidate road sections.
- Carry out budget optimization to prioritize and select the short list of projects that can be carried out within available resources, employing **NPV/Cost ratio** as the ranking index.
- Prepare the Annual Maintenance Plan that shall include Routine Maintenance contracts covering the entire length of NHA's network, Periodic Maintenance contracts and Rehabilitation contracts. The said Plan shall include projects based on economic analysis and prioritization, except that up to 1/3rd of the projects (by value) may be included on the basis of regional equity considerations.
- Develop a multi-year rolling programme for the projects in the long list that could not make the short list due to budgetary constraints.
- Only those projects shall be included in the Annual Maintenance Plan and multi year rolling programme that show a positive NPV/Cost ratio.

Annual RMA Programme

- Concurrently, RAMD shall carry out detailed appraisal of other eligible expenditures stipulated in Rule 10 of National Highway Authority Roads Maintenance Account Rules, 2003.

- RAMD shall combine the above prepared Annual Maintenance Plan and the appraised other eligible expenditures to develop Draft-1 Annual RMA Programme.

RAMD will undertake a formal road stakeholder consultation on the above Draft-I Annual RMA Programme following the Terms of Reference attached as APPENDIX 'D' at each of the NHA's Regional Headquarters during October/November every calendar year.

RAMD shall carry out the following activities during November/December every calendar year:

- < incorporation of the stakeholders feedback in Draft-I Annual RMA Programme,
- < detailed project-level appraisal of the Annual RMA Program,
- < development of Draft-II Annual RMA Programme along with its cost, and
- < preparation of PC-I (for works and goods costing over Rs 100 million) in cooperation with the regions, as required for works, goods, and services forming part of Draft-II Annual RMA Programme.

5.9 Management Processing and Information

5.9.1. Administrative Approval

For all eligible expenditures (except emergency maintenance operations described in 5.10), it shall be mandatory to obtain prior administrative approval of the competent authority. This approval shall be based on the scope of work and rough cost estimate based on latest NHA Composite Schedule of Rates.

Before according administrative approval, the competent authority shall ensure that:

- The work is of real necessity,
- The work is in line with the fundamental purposes of the RMA, and
- The work is taken up in order of priority.

Administrative powers for approval of the works, goods, and services related to the RMA are:

- Chairman: up to Rs 100 million
- Executive Board: over Rs 100 million

RAMD shall submit the Draft-II Annual RMA Programme and its cost, along with PC-I (for works and goods costing over Rs 100 million) and PC-II's to the RMA Technical Scrutiny Party (**RMA-TSP**) for works, goods and services for Rs. 20 to 100 million.

RMA-TSP will scrutinize estimates of works, goods, and services forming the Draft-II Annual RMA Programme during the 1st week of January of each calendar year.

RAMD shall submit the scrutinized Draft-II Annual RMA Programme, its cost, and contract packaging along with comments from RMA-TSP to the RMA Steering Committee.

RMA Steering Committee shall review the above submissions during the 2nd week of January of each calendar year, and shall forward the Draft-II Annual RMA Programme and PC-I/PC-II's with its recommendations, as it may deem fit for approval by the Chairman or Executive Board, as the case may be.

RMA Steering Committee shall be responsible for obtaining administrative approval of its above-mentioned submissions, from the Chairman and/or the Executive Board, during the period 15th to 31st January every calendar year.

5.9.2 Technical Sanction

RAMD will convey administrative approvals of the projects finally included in the annual RMA program by 31st January to the following for detailed preparations and competitive procurement, following codal rules:

- < the Regions (for contracts up to Rs 20 million)
- < the Head Quarter RAMS Section (for contracts above Rs. 20 million) or the procurement may also be carried out at Regional offices with the approval of Chairman NHA.

Regions and Head Quarters Contract Section shall update enlistment of maintenance contractors (according to NHA Code 1999 as revised in 2005 and PPRA Rules 2004) by 28th February every calendar year.

Regions and Head Quarters RAMS Section (where instructed) shall prepare detailed Tender Packages including detailed drawings in accordance with NHA's General Specifications, based on jointly recorded field condition, and maintenance and improvement standards prescribed by RAMD. They shall send one copy of the tender packages to RAMD for record by 31st March every year. (Note that where type plans conforming to the general specifications are available, these may be used in lieu).

For all eligible expenditures (except emergency maintenance works), it shall be mandatory to obtain prior technical sanction of the Member Operations.

NHA Headquarters Contract Section and Regional Offices shall obtain prior Technical Sanction of the Member (Operations) through RAMD for the works, goods, and services forming part of the administratively approved Annual RMA Programme provided the costs are within 15% of the estimates contained in the original administrative approval and/or PC-I/PC-II.

However, in extremely rare situations where implementation of the works/goods/services requires an excess of more than 15% over the original administrative approval, NHA Headquarters Contracts Section and/or NHA Regional Offices will prepare and submit documentation detailing reasons and justification for the excess to the RMA-TSP.

Valid reasons/justifications for excess may include further deterioration of site conditions due to traffic and/or environmental effects during the 6¹/₂ months time-lag between original field data collection and detailed tender preparation.

While forwarding the case for technical sanction, the need for revised administrative approval shall be pointed out and obtained expeditiously.

RMA-TSP will scrutinize the excess case and forward its recommendations to the RMA Steering Committee that, in turn, shall make its own recommendations as deemed appropriate, and will obtain revised administrative approval of the original approving authority.

No works/goods/services shall be advertised involving expenditures in excess of 15% over the original administrative approval with out obtaining the prior revised administrative approval of the competent authority.

Where a consultant has been engaged for preparation of the drawings, specifications and/or project estimates etc., the Member (Operations) shall accord technical sanction after obtaining views of the consultant in writing. In case of disagreement, decision of the next higher authority will be final.

The period, for which a technical sanction will be valid, shall be clearly mentioned in the technical sanction.

5.9.3 Implementation of Annual RMA Programme

Regions and Head Quarters RAMS Section shall invite bids, carry out evaluation and award contracts by 31st May every calendar year.

In exceptional circumstances, where high bid prices were the result of lack of “effective” competition, the competent authority may instruct seeking fresh bids from a wider contractor pool.

Maintenance works shall commence from 1st July of every calendar year and be completed during the financial year (that is by 30th June of the next calendar year).

Except where notified by the competent authority at the time of administrative approval, Regions shall supervise maintenance contracts financed from RMA and will forward monthly progress reports to RAMD (under an agreed format).

No change, in specifications shall be made after the work has been awarded, however, if such a change is warranted on extremely solid technical grounds, it will require prior approval of the competent authority. Revised technical sanction and administrative approval shall be necessary if the project cost exceeds by more than 15%.

5.9.4 Management Information and Performance Indicators

RAMD shall carry out performance monitoring of the works through review of monthly progress reports and random field visits during the currency of each maintenance year; and shall regularly submit summary of these reports to the Chairman and the NHA Executive Board.

RAMD shall submit summary outputs of HDM strategy analysis and recommendations for adjustments in resource mobilization, if any, to the NHA Executive Board through the Chairman.

RAMD shall monitor key performance indicators at the network level and include them in its Annual Report to the Chairman and the Executive Board. These indicators shall include results of survey carried out during the four Regional stakeholder consultations (refer to Appendix ‘E’ for a preliminary list of key performance indicators).

RAMD in its Annual Report shall include details of data collection, RMA program development including strategy and prioritization, stakeholder consultations, RMA program appraisal, scrutiny, review and approval process, procurement of works, goods and services, implementation of approved RMA program, achievement of targets, and all other activities stipulated in the RMA Rules.

5.10 Emergency Maintenance

Situations may crop up in exceptional circumstances where a particular work has to be carried out in such an emergency that the formalities mentioned for works to be executed in normal manner may not be possible. Such circumstances may arise / necessitate due to:

- a. Earthquakes, floods or heavy rains.
- b. Breakage of dam or a bund of a river or canal or nullah.
- c. Major damage caused by riots or strikes.
- d. Occurrence of accident (s) on roads.
- e. Need for removal of road safety hazards.
- f. Failure of culverts / bridge structures.
- g. Spillage of dangerous fluids causing hindrance to traffic flow or any other threat to safety of road users.
- h. Any other similar reason which affects the safety of road users.

Road user safety endangered due to reasons enunciated above should be met as follows:

- a. Operational Emergency; should be immediately taken up with the approval of GM (Region)/(Project). Later, however, approval in writing should be obtained from the Member (Ops) / (Const) (operational emergency qualify as restoration of traffic).
- b. Work Emergency; should be taken up after obtaining formal approval from Member (Ops)/(Const) (work emergency qualify as the work carried out/required to restore the road to pre-emergency condition)

In the said situations, normal procedure laid down in this Code such as call deposits/performance security may be dispensed with under intimation to the Member (Ops)/Const.) and the emergency works in question may be undertaken by the General Manager concerned through one of the following methods:

- a) Tenders may be issued direct to a limited number of contractors already borne on the approved list of NHA for the category in which the proposed work falls, subject to the following conditions:
 - i) The estimated value of the work does not exceed Rs. 2.0 million.
 - ii) The tenders are issued to at least five contractors borne on the approved list.
 - iii) Only those contractors are selected for issuance of tenders which are, in the opinion of the competent authority, in a position to mobilize the resources immediately.
 - iv) The exact nature of emergency involved in the case shall invariably be recorded.
- b) Work order may be issued without formally inviting any tenders to a single contractor born on the approved list, provided:-

- i) The estimated value of the work in question does not exceed Rs. 1.0 million in each case.
- ii) The contractor selected for the purpose is considered by the competent authority to be in a position to mobilize on short notice.

The Member (Operations)/(Construction) may approve the emergency work after consulting Member (Finance) about the budget position.

Any emergency work valuing over Rs. 2.0 million shall be dealt with prior approval of Member (Operations)/(Construction) within the allocated budget in the approved maintenance plan (approved by Executive Board). However, in all such cases the Chairman NHA shall be informed in writing.

An annual allocation of funds amounting to Rs 0.3 million shall be given to the field DD (Ops) to meet emergency requirements on site, in the situation of public safety emergency works at site (as specified in Clause 56). The allocation of funds to each field DD shall be as per site requirement. It shall be recommended by the Director concerned with the approval of the GM (Region) and this fund shall be incorporated in annual maintenance plan prepared by RAMD from within their annual allocation of funds. Work order may be issued without formally inviting tender to a single pre-qualified contractor but the amount of work shall not be more than 0.02 million in each case (the rate of each item in the work order shall not be more than NHAs CSR).

CHAPTER SIX

FINANCIAL MANAGEMENT

6.1 Maintenance of RMA Bank Accounts

A dedicated account titled as “Road Maintenance Account (RMA)” shall be opened, maintained and operated by NHA Head Office at Islamabad in a scheduled bank (hereinafter referred as Central RM Account).

Regional Headquarters of NHA shall maintain a separate/dedicated RMA sub-accounts, in a branch of the same scheduled bank of Pakistan at their respective Regional Headquarter locations.

Specifically designated sections shall operate the RM Account and its sub-accounts as follows:

- the RMA (Revenue and Account) Section at the Head Office, and
- the RMA (Revenue and Account) Sections at the Regional Headquarters.

6.2 Collection of the RMA Revenues

NHA shall collect RMA revenues from the designated sources mentioned in Rule 3(2) & (3) of the National Highway Authority Roads Maintenance Account Rules, 2003. NHA may either do this directly or may enter into a contract with another party for the same. In the cases where NHA shall be collecting the revenue directly anywhere in Pakistan, all receipts shall be deposited in the RMA revenue sub-account in the region on weekly basis. The regional General Manager shall ensure transfer of all the money in the regional RMA revenue sub-account to the Central RMA account within 7 days of the beginning of every calendar month.

In the cases of collection of the revenue through another party, the revenue transfer shall be as per the contract signed between NHA and the party concerned.

The Operation and Management Unit (OMU) of RAMD shall ensure effective monitoring in both cases.

Member Finance shall submit monthly statement of receipts into the RMA to the Chairman, NHA by 10th of every month. The said statement shall include monthly performance report containing comparison with projected receipts and suggestions for improvement (if any). On the 10th of January and 10th of July every year, a consolidated account statement shall be made available by the Finance wing to all the members and the Chairman for budgeting purposes. Central and Regional RM Accounts shall be reconciled on regular basis every month and statement to this effect shall be submitted to the Chairman by Finance wing of NHA by 7th of every month.

6.3 Disbursement of Funds

NHA Head Office shall disburse funds from the Central RM Account in the form of “releases” to the Regional Headquarters and “payments” directly to the party(ies) as per contract.

Payments to any party shall be made through mailed “Payee’s A/c only” cheques signed by two authorized signatories nominated by Chairman, NHA. The first choice nominees shall be:

- **NHA Head Office:** the General Manager (Operations) of RAMD and the Director RMA (Budget and Account) Section of the NHA Finance Wing.
- **NHA Regional Headquarters:** the General Manager (Region) and the Director /Dy. Director (RMA Revenue and Accounts) Section of the respective region.

The procedure for releases and payments shall be as described below:

Releases

Disbursement to the Regional Headquarters shall be on quarterly basis as per the following schedule:

1. First Week of September: 30% of allocated budget (i.e., Regional Office share of the approved annual RMA program)
2. First Week of December: 20% -do-
3. First Week of March: 20% -do-
4. First Week of June: 30% -do-

NHA Head Office shall release funds for third and fourth quarter only after the receipt of expenditure statement and its supporting documentation duly verified by the regional General Manager from Regional Headquarters for the first and second quarter disbursements respectively.

NHA Regional Headquarters shall return all unutilized monies in the said account to the Head Office RM Account after closing the books of accounts on 30th June of Financial Year by 3rd July every year along with reconciliation statement for the previous financial year.

Payments

Payments shall be made by NHA Head Office RM Account and NHA Regional office RM Account within the limits of contract agreement as per para 5.9.2 after the invoice/bills have been reviewed and approved according to the procedure laid down below:

Detailed measurements will be recorded in the Measurement Book (MB) stating the entire facts: (i) full name of work, (ii) location of work, (iii) name of the contractor, (iv) number and date of the contract, (v) date of written order, if any, to commence work, (vi) date of actual completion or revised completion and date of measurement.

Detailed measurement will be certified by the Project Engineer/Manager (i.e., supervisory consultant), if appointed or Project Director/ Deputy Director (Maintenance) in case NHA staff is supervising the works.

Engineer/Project Manager or Project Director/ Deputy Director (Maintenance) in the case of NHA supervised works, as the case may be, will exercise necessary checks as per NHA code, Financial Manual & RMA SOP and certify that work has been executed as per drawings and specifications. The invoice/bill along with **certified copy of the MB** and other supporting documents will be forwarded to the concerned General Manager (Region).

General Manager (Region) will ensure (i) 25% physical verification of the work to verify that the work has actually been executed and (ii) scrutiny by the Regional RMA (Revenue and Account) Section to ascertain that payment is according to the terms and conditions of the contract and necessary deductions if any, in respect of taxes and advances made have been accounted for; and then the General Manager of the respective region shall:

- < approve the invoice/bill, if the amount falls within his financial powers, and endorse it to the Regional RMA (Revenue and Account) Section for processing the payment with a copy to General Manager (Operations) of RAMD,
- < or forward the invoice/bill to the Member (Operations) through RAMD with his recommendations.

Member (Operations) will approve the invoice/bill and endorse it to the Head Office RMA (Revenue and Account) Section for further processing leading to payment.

The RMA (Revenue and Account) Sections will exercise the following checks, in accordance with the Financial Manual and NHA Code:-

1. Payment is in accordance with the terms and conditions of contract, work order or other relevant documents.
2. Invoice/Bill has been certified by the Engineer/Project Manager (if appointed) or Project Director/Deputy Director (Maintenance), and has been recommended for approval by the concerned General Manager (Region).
3. Bank Guarantee (if Mobilization Advance is availed), Performance Bond Guarantee and Contract Period is valid.
4. Necessary deductions have been incorporated in the MB such as secured advance, mobilization advance, retention money and income tax or any other deduction under the contract or Laws of Pakistan.
5. Conformity to planned resource allocation and completion time or an approved variation.

After Scrutiny, the concerned RMA (Revenue and Account) Section will record pass order on the MB by giving certificate to the effect that the invoice/bill is:

1. 100% arithmetically checked by the Superintendent Accounts, and 25% arithmetically checked by the Assistant Director and found correct.
2. prescribed checks have been correctly exercised and the invoice/bill has been found in order by the Deputy Director.

All disbursements shall be routed through the Bank Accounts.

6.4 Books of Accounts

Bank Book

All receipts collected from designated sources mentioned in Rule 3 of the National Highway Authority Roads Maintenance Account Rules, 2003 (including road user sources, Government grants, loans secured and funds provided by donor agencies - where applicable), shall be deposited into the Head Office RM Account. These deposits into the Bank Account shall be recorded in the "Bank Book" maintained by the Head Office RMA (Revenue and Account) Section according to the account code assigned to each source as well as by the Regional RMA (Revenue and Account) Sections.

All disbursements made to the Regional Headquarters and contractors, and supplier of goods and services shall be recorded in the bank book according to the account code.

All cheques issued for administrative expenses incidental to the RMA shall be recorded in the bank book.

The transactions recorded in the bank book shall be summarized at the end of each month and shall be recorded in the General Ledger and the subsidiary ledgers.

The Bank Account shall be reconciled with the statement of accounts obtained from the Bank, and any discrepancies shall be resolved immediately.

Journal Book

All provisions in respect of outstanding liabilities for expenses and goods shall be routed through the Journal Book into the General Ledger.

General Ledger

All financial transactions of the RMA shall find their way into the General Ledger from the Cash Book, Bank Book and the Journal Book in summarized form. Trial Balance for the same shall be taken at the end of each month.

Subsidiary Ledgers

- < For receipts
- < For maintenance/operations and road activity expenses
- < For miscellaneous expenses (stakeholder consultations, annual report)

The details of the above shall be kept in the subsidiary ledgers for each class and type of account. These shall be reconciled with the control accounts maintained in the General Ledger.

Asset Register

Details of all tangible fixed assets financed from the RMA shall be maintained in the Fixed Asset Register and reconciled with the control account maintained in the General Ledger.

6.5 RMA Statements

At the closing of every financial year the following annual financial statements shall be prepared by the Finance Wing [Head Quarter RMA (Revenue and Account) Section], latest by 31st October, and submitted for audit, along with the Annual Report prepared by the RAMD:

1. Balance Sheet
2. Statement of Expenditure
3. Cash Flow Statement.

6.6 RMA Financial and Technical Audit

The Annual Financial Statements and accounts of the RMA shall be audited annually by an independent and reputable firm of Chartered Accountants engaged by the Chairman NHA (indicative TOR attached as APPENDIX 'F'). Printed Audited Report shall be submitted to the NHA Executive Board within 5 months of the closing of every financial year.

The Chairman NHA shall also periodically engage an independent reputable firm or a professional individual for undertaking a Technical Audit of the activities financed by the RMA (indicative TOR attached as APPENDIX 'G').

Each year, within 6 months of the close of the financial year, following endorsement by the Executive Board, the RAMD will post the RMA Annual Report, Audited Accounts along with the Auditors Report(s) on NHA's website and make copies available to the public at NHA Head Office and Regional Offices. One copy will be forwarded to the Auditor General of Pakistan through the Ministry of Communications.

APPENDIX “A”

National Highway Authority Roads Maintenance Account Rules, 2003

(Pages 1 - 8)

Immediate

Government of Pakistan
Ministry of Communications

No. 4(4)/96-Roads

Islamabad, the August 20, 2003

Office Memorandum

Subject: National Highway Authority Roads Maintenance Account Rules, 2003

The undersigned is directed to forward herewith Notification on the above subject for publication in the next issue of Gazette of Pakistan.

M. Shoaib Dogar
(M. SHOAIB DOGAR)
Deputy Director (Roads)

The Manager,
Printing Corporation of Pakistan Press,
Government of Pakistan,
Karachi.

CC: ✓ Chairman, NHA -- For kind information please along with a copy of rules.

Chairman *24/8*

good *(M. Shoaib Dogar)*

→ *M (S)*

(M. Shoaib Dogar)

22/8

6(84)

NB: M (Ops) NHA
Dated *25/8*

By His *24/8/03*
Director *24/8/03*

**TO BE PUBLISHED IN THE NEXT ISSUE
OF GAZETTE OF PAKISTAN**

**Government of Pakistan
Ministry of Communications**

Islamabad, the 21st Aug. 03

NOTIFICATION

S.R.O. (I)/2003. In exercise of the powers conferred by Section 31 of the National Highway Authority Act, 1991 (XI of 1991), the Federal Government is pleased to make the following rules, namely:-

1. Short title and commencement:- (1) These rules may be called the National Highway Authority Roads Maintenance Account Rules, 2003.

(2) These shall come into force at once.

2. Definitions:- In these rules, unless there is anything repugnant in the subject or context;-

- (a) "Act" means the National Highway Authority Act, 1991 (XI of 1991);
- (b) **AChairman@**means the Chairman of National Highway Authority;
- (c) **Acorridor management@** means carrying out regulatory functions of the National Highway Authority as custodian of the public assets including management of right of way and building line (removal of encroachments, ribbon development, utilities, access or approach roads, afforestation, commercialization), roadside facilities (service and rest areas, filling stations, amenities), traffic and highway safety operations (enforcement of traffic laws and rules, roadside emergency telephone service, mobile vehicle repairs and rescue service, para medical service), weigh station operations, and toll operations;
- (d) **AExecutive Board@**means the Executive Board of the National Highway Authority established under section 7 of the Act;
- (e) **Ageometric improvements@** means improvements related to width, curvature, or gradient of roadway, shoulders or structures specified in the Standard Operating Procedures to enhance traffic capacity, speed, and safety;

- (f) **Highway safety improvements@** means improvements specified in the Standard Operating Procedures related to accident-prone locations (black spots), and traffic and road engineering measures;
- (g) **Maintenance plan@** means prioritized annual network-level maintenance program of the National Highway Authority prepared using the Road Asset Management System described in the Standard Operating Procedures;
- (h) **National Highway Authority@** means the National Highway Authority established under section 3 of the Act;
- (i) **Roads Maintenance Account@** means the Roads Maintenance Account established under rule 3;
- (j) **Periodic maintenance@** means the act of reinstating the pavement structures, shoulders, embankments, hydraulic structures, drainage systems, and road furniture to some minimum acceptable structural, functional and safety condition levels and includes corrective maintenance activities specified in the Standard Operating Procedure required in any given year after structural, functional and safety related deficiencies have arisen requiring urgent localized maintenance intervention;
- (k) "Revenue and Accounts Section" means the Revenue and Accounts Section referred to in sub-rule (1) of rule 11;
- (l) **Road Asset Management System@** means the Road Asset Management System described in the Standard Operating Procedure;
- (m) **Routine maintenance@** means the act of preserving the pavement structures, shoulders, embankments, hydraulic structures, drainage systems, and road furniture against the combined effects of traffic, climate and topography, with a view to prevent premature failures by ensuring the road projects last the design life and includes preventive maintenance activities required every year before structural, functional and safety deficiencies arise as specified in the Standard Operating Procedure;
- (n) **Road Asset Management Directorate@** means the Road Asset Management Directorate established under the National Highway Authority as recommended by the Executive Board and approved by the Federal Government;

- (o) **Rehabilitation** means the activities required to reinstate the pavement and hydraulic structures to the same conditions they were at the time of construction or subsequent reconstruction and essentially includes strengthening activities specified in the Standard Operating Procedure to restore structural strength and functional performance for continued serviceability;
- (p) **Revenues** means revenues accruing to the National Highway Authority from road users and other sources specifically for maintenance and road safety; and
- (q) "Standard Operating Procedure" means the Standard Operating Procedure approved by the Executive Board for executing Roads Maintenance Account related activities.

3. Roads Maintenance Account.- (1) The National Highway Authority shall maintain a commercial non-lapsable account in Pakistani scheduled banks designated as Roads Maintenance Account.

(2) All revenues from road users accruing to the National Highway Authority, from the following sources, net of collection costs, shall be expeditiously transferred into the Roads Maintenance Account, namely:-

- (a) Tolls on roads and bridges;
- (b) road use related fines (e.g., overloading, traffic offence);
- (c) axle load charges;
- (d) supplementary heavy vehicle fee;
- (e) international transit fees; and
- (f) border fees.

(3) The National Highway Authority shall also transfer all revenues accruing to it, from time to time, from the following other sources into the Roads Maintenance Account, namely:-

- (a) Charges for commercial use of right of way;
- (b) profits on bank deposits and income on investment of moneys in the Roads Maintenance Account;
- (c) annual maintenance grant from the Federal Government;
- (d) maintenance funds provided by international donor agencies;
- (e) loans secured to finance any maintenance work shortfall; and
- (f) endowments and donations for maintenance and road safety from any organization, group or person.

4. Administrative management of Roads Maintenance Account. (1) The Road Asset Management Directorate shall manage and administer the Roads Maintenance Account using approved disbursement procedures detailed in the Standard Operating Procedure.

(2) The Road Asset Management Directorate shall prepare an annual

report on the policies and main activities of the Roads Maintenance Account during the preceding financial year, in coordination with the Revenue and Accounts Section.

(3) The Road Asset Management Directorate shall assist the Regional Offices of the National Highway Authority in organizing regular, at least annual, structured consultations as detailed in the Standard Operating Procedure with key stakeholders, including road users representatives, on proposed maintenance plan and past year's performance, and in reporting on the feedback received during these consultations in its annual report.

(4) Each year, following endorsement by the Executive Board, the Road Asset Management Directorate shall post the annual report and audited accounts along with the auditor's report relating to the Roads Maintenance Account on website of the National Highway Authority, and make copies available to the public at Head Office of the National Highway Authority and its Regional Offices.

5. Review and revision of Roads Maintenance Account.- (1) the Road Asset Management Directorate shall regularly review the level of tolls, and other levies being channeled into the Roads Maintenance Account and recommend adjustments to the Chairman, to match revenues with expenditures needed to fully address the network-level maintenance needs of the National Highway Authority.

(2) Toll levels shall be adjusted over time to reflect the following as far as possible, namely:-

- (a) Extent of road use;
- (b) damage caused to network; and
- (c) level of service provided.

(3) Any upward or downward adjustment or revision in the level of tolls and other levies shall be duly disseminated to the public through the press.

6. Revenue Collection arrangements for Roads Maintenance Account.- (1) The National Highway Authority shall ensure cost-effective, transparent, and accountable arrangements for the collection of the Roads Maintenance Account revenues.

(2) Contract-based revenue collection arrangements shall be pursued to the extent possible and such arrangements shall include,-

- (i) payments through bank transactions directly into the Roads Maintenance Account in designated bank by various public and private sector agencies responsible for the collection of the Roads Maintenance Account revenues after deduction of their commission, charges and expenditure in accordance with the terms and conditions of the contract; and
- (ii) an effective internal control system and regular internal audit for verifying amounts collected and for resolving any dispute

between the National Highway Authority and its collecting agents and any other concerned party.

(3) The Road Asset Management Directorate shall oversee implementation of all arrangements for collecting revenues in the Roads Maintenance Account and advise the top management of the National Highway Authority where changes are needed in such arrangements.

7. Disbursement of Roads Maintenance Account.- (1) Funds shall only be withdrawn from the Roads Maintenance Account for the purposes of financing eligible expenditures, described in rule 9.

(2) The Road Asset Management Directorate shall disburse a payment after receiving certification from the "Engineer" that the works, goods and services have been carried out and delivered according to the specifications.

Explanation.- For the purposes of this sub-rule, the word "Engineer" means any person employed by the Chairman for supervision and execution of a contract between the National highway Authority and a contractor.

(3) Payments to a contractor shall only be made either through a mailed "Payee's A/c Only" cheque or by transfer into bank account of beneficiary through bank, signed by two authorized signatories nominated by the Member (Finance) of the National Highway Authority.

8. Maintenance plan.- (1) The Road Asset Management Directorate shall prepare a maintenance plan, and the budget in consultation with the Regional Offices and various stakeholders by the 31st March every year, using the Road Asset Management System described in the Standard Operating Procedure.

(2) The Steering Committee comprising of the Member (Planning); the Member (Operations); the Member (Finance); the Regional General Managers; the General Manager (Contracts); the General Manager (Operations); and the Director, Road Asset Management Directorate shall review the maintenance plan and the budget

(3) The Steering Committee shall, after due deliberations, forward the maintenance plan, and the budget along with its final recommendations to the Chairman for approval.

9. Eligible expenditures.- (1) Eligible expenditures from the Roads Maintenance Account shall only comprise expenditures for the following, namely:-

- (a) Maintenance Plan;
- (b) rehabilitation of existing network assets of the National Highway Authority which have acceptable net present value and economic rates of return;

- (c) geometric Improvements of the existing network assets of the National Highway Authority up to a maximum of six per cent of annual revenues;
- (d) highway safety improvements up to a maximum of five per cent of annual revenues;
- (e) establishment of new toll plazas with automated electronic toll and traffic management system, access control, and weigh stations up to a maximum of two and half per cent of annual revenues; and
- (f) expenditure related to corridor management up to a maximum of one and half per cent of annual revenues including related surveys and studies.

(2) The works, goods and services referred to in sub-rule (1) shall be procured through competitive contracting procedures pursuant to the requirements of the Financial Manual, the National Highway Authority Code and the Conditions of the contract between a contractor or, as the case may be, consultant or supplier and the National Highway Authority.

(3) The Roads Maintenance Account resources shall not be withdrawn to bridge finance non-eligible expenditures or be allocated or reappropriated for the development projects and capital works.

10. Charges on Roads Maintenance Account.- (1) Eligible expenditures from the Roads Maintenance Account shall have the following priority, namely:-

- (a) First charge: Routine and periodic maintenance.
- (b) Second charge: Rehabilitation.
- (c) Third charge: Geometric Improvements and highway safety improvements.
- (d) Fourth charge: New toll plazas and weigh stations.
- (e) Fifth charge: Corridor management

11. Financial management of Roads Maintenance Account.- (1) A specifically designated " Revenue and Accounts Section" under the Finance Wing of the National Highway Authority shall maintain the Roads Maintenance Account using International Accounting Standards as accepted in Pakistan for financial reporting and would be responsible for internal controls and auditing arrangements.

(2) The Revenue and Accounts Section shall be responsible to,-

- (i) keep proper books of the Roads Maintenance Account (cash and bank books, ledgers, asset register), and maintain records of all receipts and all disbursements into and from the Roads Maintenance Account;

- (ii) prepare and submit for audit in respect of each financial year a balance sheet, a statement of income and expenditure, and a statement of cash flow, along with annual report of the Roads Maintenance Account prepared by the Road Asset Management Directorate pursuant to rule 4;
- (iii) prepare the annual financial statements within three months of the close of financial year; and
- (iv) submit the annual financial statements to the Executive Board for its approval.

(3) Subject to section 24 of the Act, a firm of chartered accountants appointed as independent auditors by the Executive Board shall audit the Roads Maintenance Account and financial statements annually. In addition, the Executive Board shall periodically engage an independent, reputable professional firm or individual for undertaking a technical audit of the activities financed by the Roads Maintenance Account.

(4) Subject to statutory provision in the Act, the auditors shall complete the audit within three months of submission of financial statement to them but not later than the 31st December each year.

(5) The auditors shall include in their report, assessments relating to achievement of the objectives of the Roads Maintenance Account, compliance with approved policies, rules and the Standard Operating Procedure.

(6) The report of the auditors shall contain detailed appraisements on the following, namely:-

- (a) The accuracy of the record and financial accounts of the Roads Maintenance Account;
- (b) the completeness of income of the Roads Maintenance Account;
- (c) whether the level of tolls and other revenues are in accordance with rule 5;
- (d) whether disbursements are in accordance with rule 7;
- (e) the conformity of payments with the eligible expenditures as laid down in rules 7 and 9;
- (f) the conformity of payments with the priorities laid down in rule 10;
- (g) accuracy of accounting and internal control procedures;

- (h) the effectiveness of the administration of the Roads Maintenance Account; and
- (i) analysis of variances between the budgeted and actualities.

(7) The Executive Board shall review and endorse the annual report referred to in sub-rule (2) of rule 4, and audited accounts of the Road Maintenance Account along with the auditors report and forward the same, within one month, to the Auditor General of Pakistan through the administrative Ministry.

(8) The financial year of the National Highway Authority and the Roads Maintenance Account shall be the period of twelve months commencing on the 1st July each year and ending on the 30 June of the following year.

[No. 4(4)/96-Roads]

(M. Shoaib Dogar)
Deputy Director (Roads)
Phone No. 9216279

The Manager,
Printing Corporation of Pakistan Press,
Karachi

APPENDIX “B”

ROAD ASSET MANAGEMENT DIVISION (RAMD)

**SETUP AS APPROVED BY NATIONAL HIGHWAY COUNCIL IN ITS
16TH MEETING HELD ON 4TH OCTOBER 2005**

(Pages 1 – 10)

1. Introduction

1.1 Road Asset Management Division plays Pivotal role in NHA as service provider. Road Asset Management Division was established after approval of Executive Board in its 104th meeting on May 29, 2002. The revised organization was accorded anticipatory approval by Minister of Communication as President of NHC with the direction that it shall be placed before NHC for approval. The reorganization envisages that RAM Division will be headed by GM (RAMD, BS-20) and shall comprise the following sections. The first **five** shall be headed by officers of the level of Directors and the **last one** by a Deputy Director:-

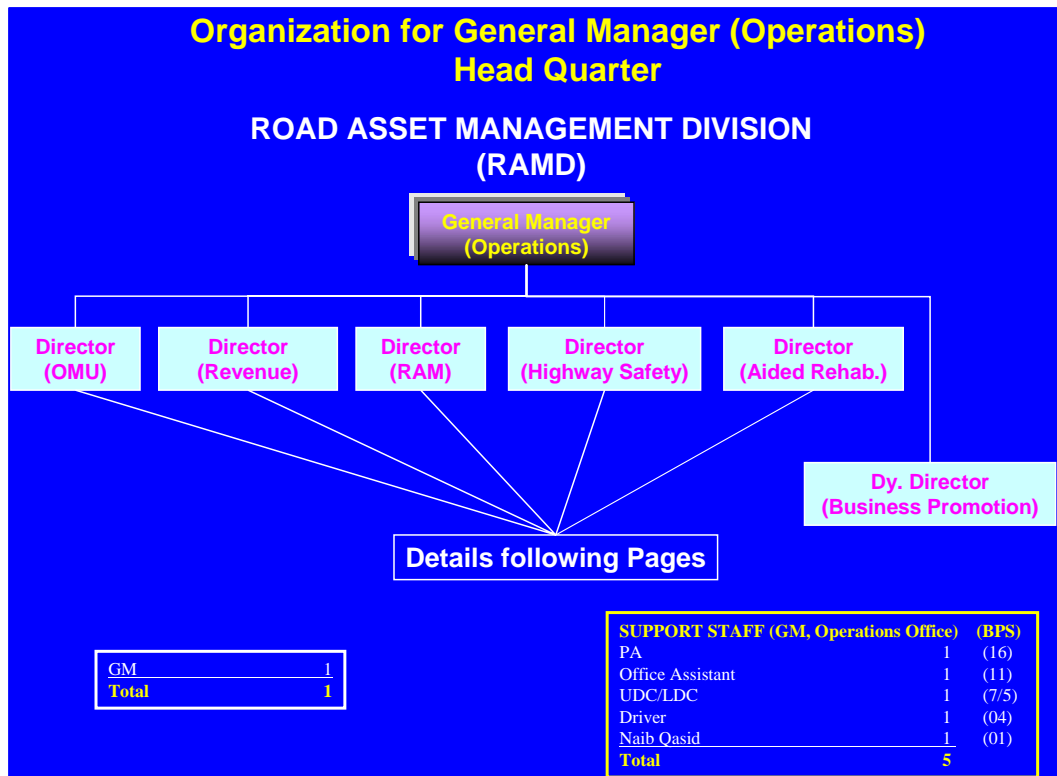
- a. Operation & Management
- b. Revenue Management
- c. Road Asset Management System
- d. Highway Safety
- e. Aided Rehabilitation
- f. Business Promotion

2. Functions of GM (Operation)

2.1 The duties and functions to be performed by GM (Operation) shall be as briefly summarized below:-

- a. Implement and monitor national road policies.
- b. Planning and implementation with regard to highway safety.
- c. Prepare, implement & monitor road management plans, maintenance strategy, quality assurance program, axle overload control regime, etc.
- d. Ensure execution of Technical and Financial audit for Road Maintenance Account.
- e. Define and issue guidelines to systematic approach for road asset management.
- f. Advise on ways and means to optimize revenue generation, maximize private sector participation & commercial operations.
- g. Advise on institutional reforms and policy improvement.
- h. Guide Regional GMs and Maintenance Units in planning and implementation of the assigned tasks and ensure regular monitoring of progress.
- i. Coordinate implementation of RAM System (RAMS) with the Regional GMs. This includes Technical / Financial audit and cyclic up gradation of Performance indicators.
- j. Prepare and submit progress, periodic and annual reports.

- k. Ensure implementation of regulatory framework with respect to tolling and commercial use of RoW.
- l. Ensure timely submission of reports as per requirement of RAMS including financial reports, balance sheets, audit reports, etc.



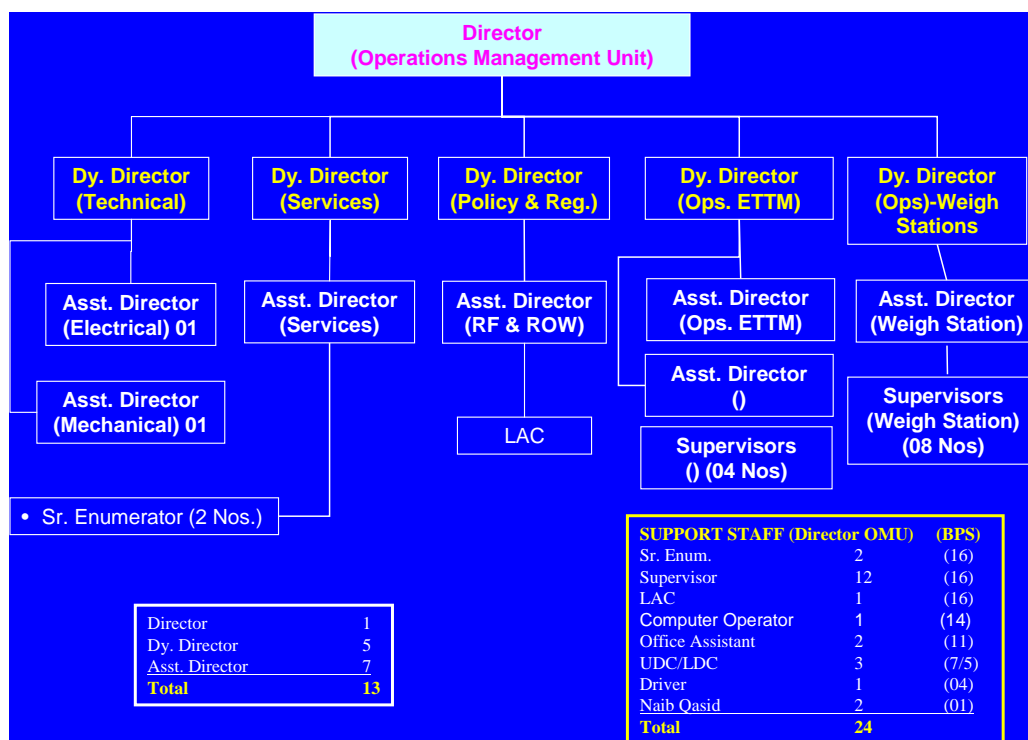
3. Director Operation & Management (O&M)

3.1 The Director Operation and Management (O&M) shall be responsible for overall monitoring & coordination of O&M contracts and contract administration besides preparation of annual performance reports as also monitoring of commercial operations. He shall be having under his command **five** Deputy Directors dealing with the subjects as indicated below:-

- a. Deputy Director (Technical): He shall be managing smooth toll policy implementation and regulatory framework, liaison with local administrative authorities and shall also be responsible for resolving technical and legal issues concerning O & M contracts. He shall be assisted by **two** Assistant Directors.
- b. Deputy Director (Services): He shall be handling RoW management of commercialization operations (including relevant BOT cases for underpasses and bus bays etc) and ancillary development, liaison with government agencies and local administration, provision of media advisory services and organizing public relation and awareness campaigns particularly that concerning coordination with stakeholders such as truck & bus owners association, etc, with regard to toll

operations and axle load management. He shall be assisted by **one** Assistant Director and **two** Senior Enumerators.

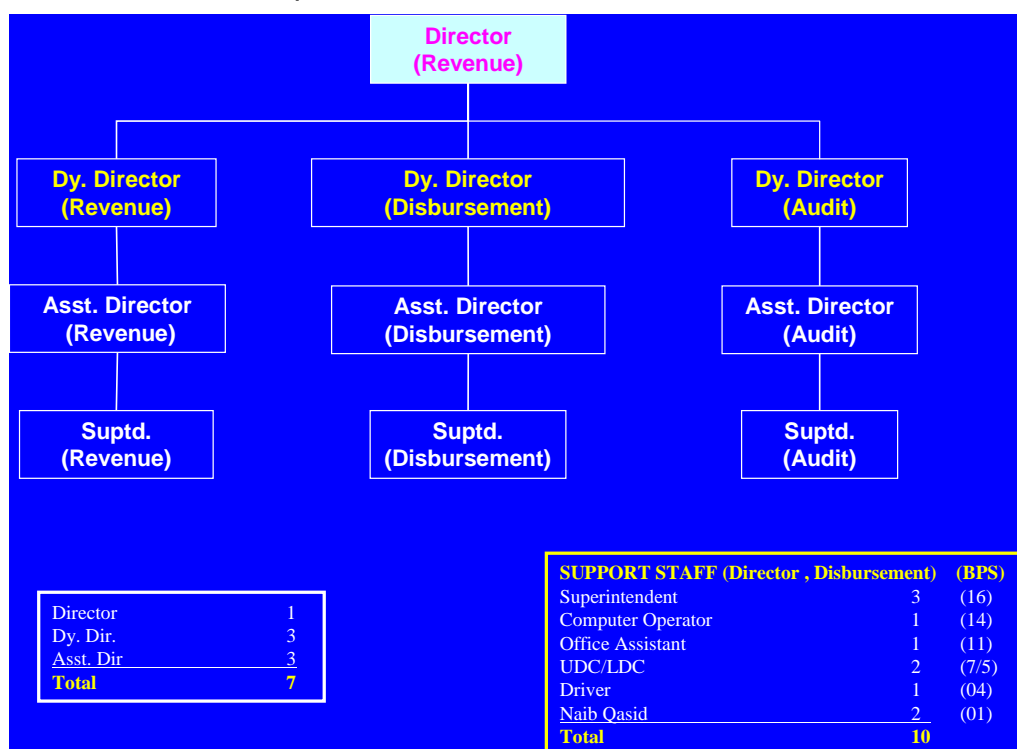
- c. Deputy Director (Policy & Regulations): He shall be responsible for assessment of toll rates, leasing of assets, proposals for updating the policies and SOPs and their proper implementation besides fixation of rentals. He shall be assisted by **one** Assistant Director and **one** LAC.
- d. Deputy Director (Ops-ETTM): He shall be handling all matters concerning planning, installation and operation of Electronic Traffic & Toll Management (ETTM) System on the national highway network including coordination with ETTM operators for verification of ETTM data and submission of toll data on periodic basis. He shall also look after the online operations. He shall be assisted by **two** assistant Directors and **four** Supervisors.
- e. Deputy Director (Ops-Weigh Stations): He shall be handling all matters concerning installation, operation, repair and maintenance of Weigh Stations on the national highway network and implementation of the axle load management policy. He shall be assisted by **one** Assistant Director and **eight** Supervisors.



4. Director (Revenue Management)

4.1 He shall be responsible for revenue collection working, tolling & commercial use of RoW, expenses statement & accountancy and providing feedback to RAMS Section of the available revenue resources. He shall be having under his command, **three** Deputy Directors dealing with the following subjects:-

- a. Deputy Director (Revenue): He shall be responsible to manage & maintain revenue data and its transfer to RMA, keep track & record of profits on bank deposits and income on investment of RMA funds, preparation of annual maintenance demand from the GOP, record of maintenance funds provided by the international donor agencies and also manage loans secured to finance any maintenance work shortfalls besides preparation of financial statements. He shall be assisted by **one** Assistant Director and **one** Superintendent.
- b. Deputy Director (Disbursement): He shall ensure that operations of RMA are in conformity with existing policies and regulations and funds are withdrawn for financing eligible expenditures only. He shall process payments cleared from RAMD, keep record of disbursements, RMA cash and bankbooks, bridges and asset registers. He shall also maintain records of all disbursements from RMA. He shall be assisted by **one** Assistant Director and **one** Superintendent.
- c. Deputy Director (Audit): He shall be responsible for internal and external financial auditing of RMA and preparation of annual financial report. He shall also be responsible for preparation and submission of balance sheets statements of income / expenditure and statement of cash flow for scrutiny by audit. He shall also conduct audit of Toll plazas and Weigh Stations. He shall be assisted by **one** Assistant Director and **one** Superintendent.



5. Director Road Asset Management (RAM)

5.1 He shall be responsible for strategic business plan development, road central data bank operation & development and HDM4 (project & network level) analysis.

He shall be having under his command **four** Deputy Directors and **one** Database Officer dealing with the subjects as indicated below:-

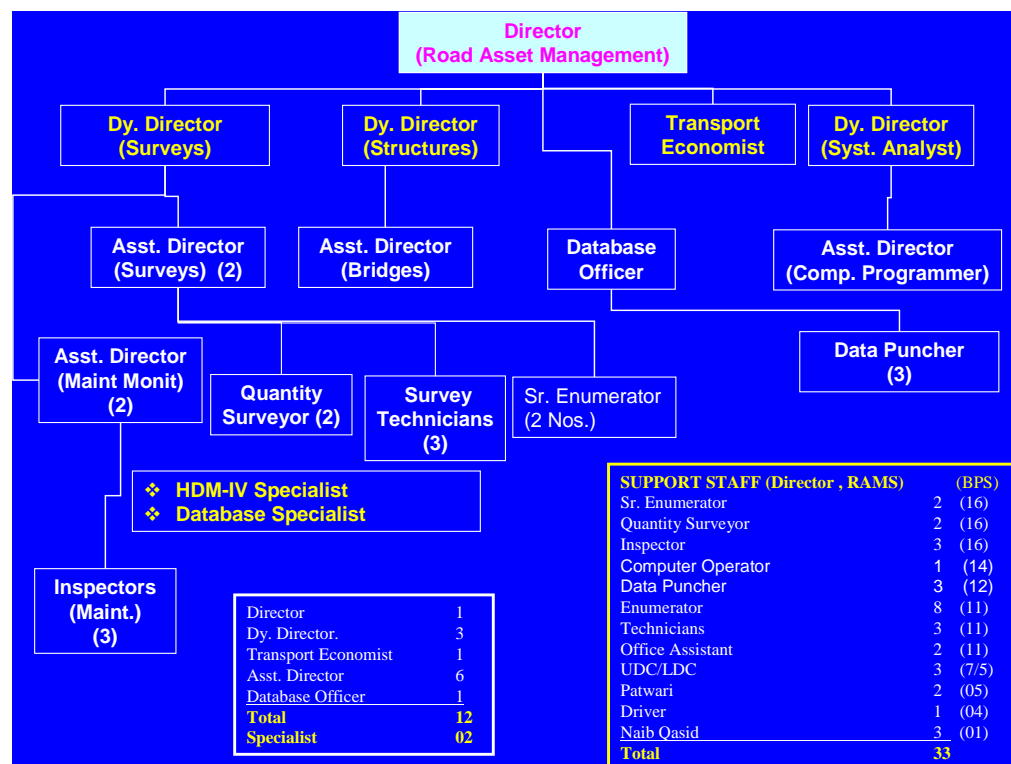
- a. Deputy Director (Surveys): He shall be organizing road condition and roughness surveys, ongoing/planned projects coordination, updating other road data through asset inventory, road structures surveys, traffic surveys, etc.

Because of the peculiar nature of the job, he shall be assisted by **four** Assistant Directors, **three** Inspectors, **two** Quantity Surveyors and **two** Senior Enumerators.

- b. Deputy Director (Structures): He shall be handling annual bridge/structural appraisal, development of standardized designs for highway apprentices including drainage, complementing the pavement rehabilitation project with structural component, etc. He shall be assisted by **one** Assistant Director.

- c. Deputy Director (System Analyst): He shall be handling road data evaluation, preparation of annual maintenance budget plan besides training & research. He shall be assisted by **one** Assistant Director.

- d. Database Officer: He shall be handling data analysis and report generation, data backup in the form of CDs & zip tapes for keeping the existing pavement management system operational besides operating and updating the existing data bank of NHA and data representation in the form of AutoCAD's maps and other computer software. He shall be assisted by **three** Data Punchers.

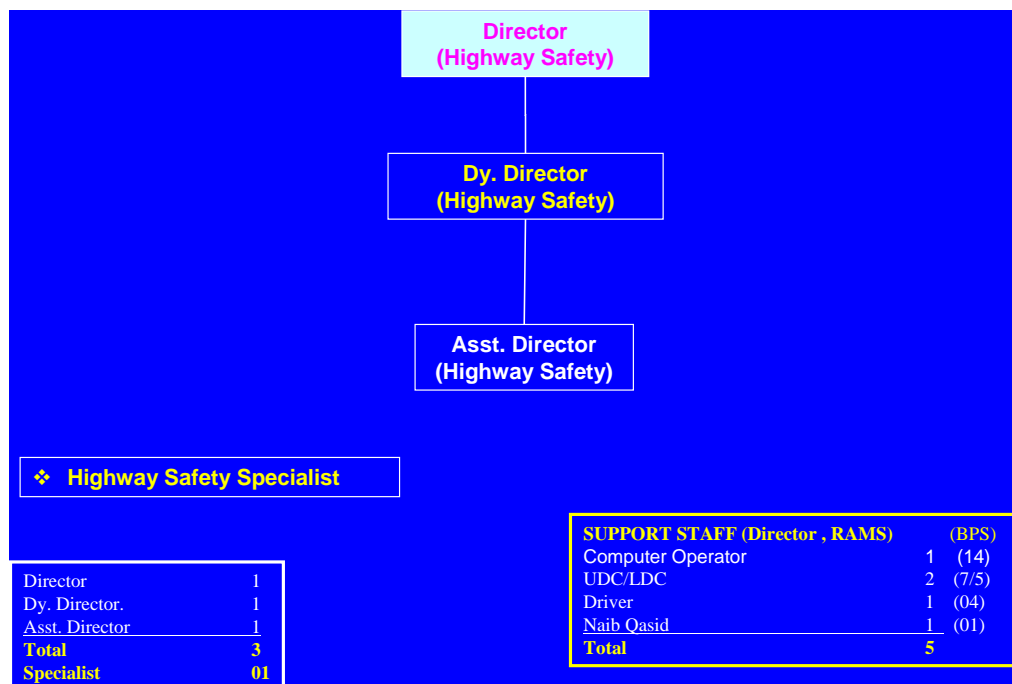


6. Director (Highway Safety)

6.1 The Director (Highway Safety) shall be responsible for the highway safety work carried out within NHA, following the guidelines and objectives set and duties assigned by the NHA Board, Chairman, Member (Operations) and GM (Operations). He/She shall coordinate NHA's efforts to improve highway and traffic environment in order to decrease number and severity of highway accidents. He/She shall liaise with other stakeholders in the highway and road safety arena, like the Ministry of Communication, Regional Governments (CNW), Traffic Police etc. He/She shall ensure that highway safety aspects are sufficiently considered and implemented in road planning and design, construction, rehabilitation and maintenance, and that high priority highway safety improvement projects are planned for and included in the Annual Maintenance Plan. He /She shall hold overall responsibility for proper functioning of road accident data collection on NHA side, accident report compilation, safety analysis (especially black spot identification) and road safety improvement planning and design, as well as coordinate highway safety awareness training within NHA (including regional offices)

6.2 The Director (Highway Safety) shall be assisted by one Deputy Director as under,

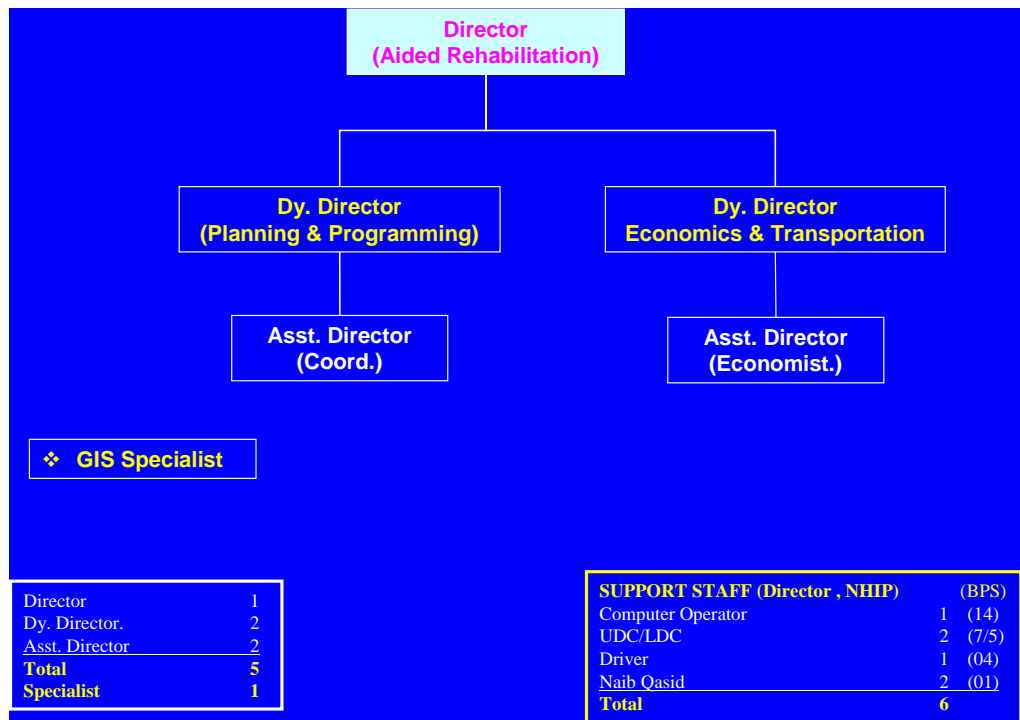
- a. Deputy Director (Highway Safety): Shall be handling the accident data collection, accident report compilation and analysis of the accident data. Especially he/she shall apply and develop the methodology on identifying and analyzing of accident black spots and, based on the analysis, plan and design safety improvements to be considered for inclusion in the Annual Maintenance Plan. He/She will arrange and organize detailed additional safety surveys as necessary in order to investigate and confirm reasons for accidents. He/She shall be assisted by one assistant Director.



7. Director (Aided Rehabilitation)

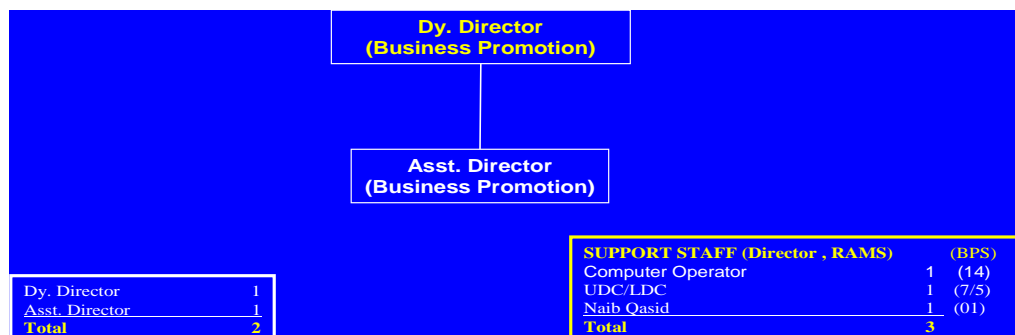
7.1 The Director (Aided Rehabilitation) shall be having be having under his command **two** Deputy Directors dealing with the subjects as indicated below:-

- a. Deputy Director (Planning & Programming): He shall be responsible for making financial models and work programs besides progress updates and record. He shall be assisted by **one** Assistant Director.
- b. Deputy Director (Economics & Transportation): He shall be responsible for evaluation of project economics and shall act as coordinator between aided projects and maintenance through toll. He shall be assisted by **one** Assistant Director.



8. Deputy Director (Business Promotion)

8.1 He shall devise low cost strategies for business promotion and enhancement of revenue by preparing electronic documents comprising business information, preparation of articles and press releases for media campaigns and publicity. He shall also arrange the conduct of stakeholder consultations for RAMD. He shall be assisted by **one** Assistant Director:-



9. Consolidated Strength

9.1 The consolidated strength of RAMD shall be as follows:-

<u>Post</u>	<u>GM</u>	<u>Dir O&M</u>	<u>Dir Rev</u>	<u>Dir RAM</u>	<u>Dir (HS)</u>	<u>Dir (AP)</u>	<u>DD (B.Pr)</u>	<u>Total</u>
GM (BS-20)	1	-	-	-	-	-	-	1
Dir (BS-19)	-	1	1	1	1	1	-	5
DD (BS-18)	-	5	3	3	1	2	1	15
TE (BS-18)	-	-	-	1	-	-	-	1
DBO (BS-17)	-	-	-	1	-	-	-	1
AD (BS-17)	-	7	3	6	1	2	1	20
Supdt (BS-16)	-	12	3	-	-	-	-	15
Insp (BS-16)	-	-	-	3	-	-	-	3
SE (BS-16)	-	2	-	2	-	-	-	4
QS (BS-16)	-	-	-	2	-	-	-	2
LAC (BS-16)	-	1	-	-	-	-	-	1
PA (BS-16)	1	-	-	-	-	-	-	1
CO (BS-14)	-	1	1	1	1	1	1	6
DP (BS-12)	-	-	-	3	-	-	-	3
OA (BS-11)	1	2	1	2	-	-	-	6
Enu (BS-11)	-	-	-	8	-	-	-	8
Tech (BS-11)	-	-	-	3	-	-	-	3
UDC/LDC (BS 7 / 5)	1	3	2	3	2	2	1	14
Patwari (BS-5)	-	-	-	2	-	-	-	2
Driver (BS-4)	1	1	1	1	1	1	-	6
Naib Qasid (BS-1)	1	2	2	3	1	2	1	12
Total:	6	37	17	45	8	11	5	129

10. Specialist Cell

10.1 The RAMD, because of the peculiar nature of technical and specialized functions assigned to it, shall be having at its disposal the following **four** Specialists:-

- RAM System
- HDM-IV
- Highway Safety
- Database

- Aided Rehabilitation
- GIS

10.2 These Technical Specialists shall be appointed on contract basis on negotiated terms and conditions of service on need basis.

NATIONAL HIGHWAY COUNCIL (NHC) DECISION

(As per Minutes of the 16th National Highway Council Meeting held at Islamabad on October 4, 2005)

Minutes issued vide letter No. 16(2)/NHC/DS/NHA/05/477 dated November 12, 2005

30.6. The NHC approved the following establishment for NHAs Road Assets Management Directorate:-

<u>Posts</u>	<u>No</u>
BS-20	1
BS-19	5
BS-18	16
BS-17	21
BS-16	26
BS-1 to 15	60
Total:	129

30.7. Detailed break-up of the above establishment is given in **Annex-IV**.

30.8. The NHC also approved placement of the services of the following Specialists at the disposal of the RAMD in view of the peculiar nature of technical and special functions assigned to this Division. These technical Specialists shall be appointed on contract on negotiated terms and conditions of service but on need basis only:-

RAM System

- a) HDM-IV
- b) Highway Safety
- c) Database

Aided Rehabilitation

- d) GIS

Annex-IV

ORGANIZATION STRUCTURE OF ROAD ASSET MANAGEMENT DIVISION (RAMD) OF NHA								
<u>Post</u>	<u>GM</u>	<u>Dir O&M</u>	<u>Dir Rev</u>	<u>Dir RAM</u>	<u>Dir (HS)</u>	<u>Dir (AP)</u>	<u>DD (B.Pr)</u>	<u>Total</u>
GM (BS-20)	1	-	-	-	-	-	-	1
Dir (BS-19)	-	1	1	1	1	1	-	5
DD (BS-18)	-	5	3	3	1	2	1	15
TE (BS-18)	-	-	-	1	-	-	-	1
DBO (BS-17)	-	-	-	1	-	-	-	1
AD (BS-17)	-	7	3	6	1	2	1	20
Supdt (BS-16)	-	12	3	-	-	-	-	15
Insp (BS-16)	-	-	-	3	-	-	-	3
SE (BS-16)	-	2	-	2	-	-	-	4
QS (BS-16)	-	-	-	2	-	-	-	2
LAC (BS-16)	-	1	-	-	-	-	-	1
PA (BS-16)	1	-	-	-	-	-	-	1
CO (BS-14)	-	1	1	1	1	1	1	6
DP (BS-12)	-	-	-	3	-	-	-	3
OA (BS-11)	1	2	1	2	-	-	-	6
Enu (BS-11)	-	-	-	8	-	-	-	8
Tech (BS-11)	-	-	-	3	-	-	-	3
UDC/LDC (BS 7 / 5)	1	3	2	3	2	2	1	14
Patwari (BS-5)	-	-	-	2	-	-	-	2
Driver	1	1	1	1	1	1	-	6
Naib Qasid	1	2	2	3	1	2	1	12
Total:	6	37	17	45	8	11	5	129

APPENDIX “C”

TERMS OF REFERENCE

FOR

ROAD AND BRIDGE ASSET MANAGEMENT SYSTEM

(Pages 1 - 89)

THE ROAD ASSET MANAGEMENT SYSTEM (RAMS)

General Introduction

In a broad based and up to date approach, the NHA is embarking upon a programme of Resource and Road Asset Management in its endeavors to improve the serviceability and value for money that it requires from its highway network.

This is the modern approach to road management much favored in the countries where budgets for the care and repair of roads are always in deficit.

Every road network has a Book Asset Value at the start of the year. This is made up of:

- The value of the existing pavements as constructed, and then down valued according to (i) their present condition and (ii) the cost of putting them in the minimum acceptable condition.
- The stock value of the structures based upon their replacement value. [There is no known model that can interpolate the down valuing based upon condition. They either are up to the job or need replacing].

Based upon available resources and the priorities of serviceabilities, an annual programme of care, conservation and upgrading of the road network then takes place. This programme of works are the investments being made in the road network.

An analysis at the end of the following year of the road conditions and hence the prevailing asset values-reflects the downward valuation of roads that have deteriorated further (due to no intervention) and the upward valuation of those sections receiving investments in the form of conservation or improvement programmes and gives an overall picture of profit or loss.

A Profit/Loss Statement combined with an annual Balance Sheet then gives the Road Owner his up to date Stock of Assets.

The Management Organization

For the RAM System the whole concept of who manages, and is responsible for what, also requires updating.

The first step is to define the key roles.

Definition of Functionary Roles

The main roles in the Road Asset Management System are:

- The "Government"- responsible for the taxpayers interest.
- The "Road Owner/Client"- responsible for all highway management resources, works and services.
- The "Programme Designer"- selected by the Client to design a programme to follow the strategies and plans that the Road Owner requires.
- The "Service Provider"- Selected by the Client to carry out the works and related services to complete the requirements of the Designed Programme in compliance of his overall strategies and plans.

The following are these same definitions internalized within the National Highway Authority of Pakistan.

The Road Owner & Client

The Road Owner and Client is the National Highway Authority.

He is represented by his Board of Members.

The Client either employs externally or selects from within his own organization, the Programme Designer.

The Road Owner/Client gives clear strategies, plans and objectives to the Programme Designer with the request that he should design a programme that will achieve the stated objectives.

The Programme Designer

For NHA the Programme Designer role has been allotted to Road Asset Management Division (RAMD).

The Service Provider (Public & Private Sector)

In an effort to move towards the Government's Policy of privatization, some Service Providers will be drawn from the private sector where this is practical and feasible. They will be under concessionary arrangements which will be detailed separately. Elsewhere the Service Provider will be designated from within the existing NHA organization.

Types of Service Provider

There will be at least two distinct types of Service Provider:

The management of works and contracts within the Annual Road Conservation Programme will be undertaken by both Private & Public sector organizations.

i). Service Provider – Public Sector

For the public sector Service Provider the NHA will use the Authority's own Regional offices.

ii) Service Provider – Private Sector

A cross section of private sector organizations will be given the chance to undertake responsibilities as Service Provider for nominated sections of National Highway.

In the case of this latter provision special operating rights will be granted to undertake resource mobilization in the form of Tolls etc.

For the Service Provider drawn from the private sector, the role of the Client will be strictly limited to fixing strategies, plans and policies and the imposition of the required Designed Programme.

Indication of Performance and Established Standards

For both the private and public sector Service Providers a standard set of Performance Indicators will be placed within the programme as part of the standard design.

Reasons for Implementing RAMS

The necessity for undertaking this programme is the poor overall performance and delivery of road maintenance and works programmes over the past 5 to 6 years and the measurable decline in the value for money being realized from available maintenance resources.

It is intended to obtain better value for money in the future, all works – no matter how small or ordinary – will be clearly targeted and justified and qualified before any funding is allocated and notice to proceed is given.

Details of the Annual Road Conservation Programme as Applied to NHA

A. For all the Regions and on sections of national highway where no privatized concessions apply

Road Owner is the NHA – Represented by the Board of Members

Service Provider - Regional Offices

Providing all the Highway Services for the Road Owner/Client and undertaking the role of “The Engineer”.

With responsibilities for:-

- Quality Assurance Programme
- Works Planning and Scheduling
- Traffic engineering and temporary arrangements.
- Provisions of Safety and the Suitability of any equipment used.
- Managing all sub-contracting procurement arrangements.

B. For the Private Sector Concessionaires

Road Owner and Client is the NHA – Represented by the Board of Members

Service Provider - A Management Contractor
or Engineering Consortium

Providing all the Highways Services for the Road Owner/Client and undertaking the role of “The Project Manager”.

The private sector will provide within their management organization:

- i) Full time

Engineer as Project Manager (named) with detailed organizational setup.

ii) Part time

A Quality Assurance Advisor/Designer
A Works Programme Manager

General Methodology of the Annual Road Conservation Programme

The situation at present on the national highways is not routine or ordinary, rather its extraordinary and needs extraordinary measures to optimize all resources.

Even the smallest or ordinary works activity will have to be qualified as a measure that conserves the existing Asset Value of the road or its environs.

There will be no ad-hoc procedures or emergency measures. All works, no matter how urgent, will have a clear and concise process placed before them to justify. The Programme Design will outline all these various aspects.

The previously referred to routine maintenance programme is renamed as the Annual Road Conservation Programme (ARCP)

The role of Service Provider as undertaken by the Regional Management Units will only apply to the Annual Road Conservation Programme.

An Investment/Performance Statement will be prepared annually for submission to the Board. These management statements will clearly indicate where performance targets were not met and give reasons for the shortfall with suggested solutions to the problems to be addressed in the next time slice of the programme.

The overall objective is to see if the provision of highway services can be best obtained from the private sector or a streamlined public sector authority with clear and corporate strategies.

STRATEGIC BUSINESS PLAN (SBP)

The Road Asset Management System (RAMS) fits within the NHA's overall Strategic Business Plan.

The RAMS mainly focusing on an annual time slice of the long term strategies and plans of the authority.

The Strategic Business Plan will incorporate long term policies and programming. It will show the planned expansion of the national network. Investments in new highways and roads and enhanced facilities. Such developments of the network following on, and according to, overall Government policy and development plans.

The SBP will also show:

- Resource generation and planned investments from the budget.
- Planned privatization programmes.
- Non budgeting finance and investments.
- Human Resource development.
- Overheads, running costs and general levels of administrative expenditures.
- Operating costs.

Functional Classification

For planning and programming purposes each 1 kilometer of every road link will be given a Functional Classification.

This Functional Classification will be based upon its method of design and construction and hence its physical asset value, coupled with its current traffic value.

The 'desirable' road network characteristics and functional classifications to reflect the projected growth of traffic resulting from national industrial and commercial development programmes will be defined as the required standards.

These standards will be the basis of planned programmes for the development, improvement and reconstruction of the existing network to establish road improvement targets for each five year programme.

The functional classifications will also be the basic of the asset management format that is to be adopted in the annual maintenance programme.

The basic matrix of standards required for National Highway classifications will be the following which are based on the definitions adopted in the IBRD 1998 study:

Categories of Functional Classifications :	Poor
:	Fair
:	Good

Minimum Standards of Functional Classifications				
Traffic Volumes	Asphalt Surface with Aggregate Base PA	Asphalt Surface with Granular Base PG	Surface Treated with Aggregate "designed" Base SA	Surface Treated with Granular Base SG
< 1000	Fair	Fair	Poor	Poor
1000 – 2000	Fair	Fair	Poor	Poor
2000 – 3000	Fair	Fair	Poor	Poor
3000 – 4000	Fair	Fair	Fair	Poor
4000 – 5000	Good	Good	Fair	Fair
5000 – 6000	Good	Good	Fair	Fair
6000 – 7000	Good	Good	Fair	Fair
> 7000	Good	Good	Fair	Fair

Each Five Year Programme will therefore produce a list of road and highway links whose condition is, according to up to date traffic volumes/characteristics, falling below the desirable Minimum Standards.

These road links will then, according to a priority listing from the model which should include sectorial interest and development plans as well as current and projected traffic volumes, be placed in a Road Investment Portfolio.

The Individual Road Investment Portfolios Contained in the SBP

The first part road investment portfolio will be broadly based and not only focus on upgrading sections or links that are falling way below their required functional classification, but also those links which, for a relatively minor investment, can be improved to the next level of classification.

i) Development Investment Portfolio

This part of the investment portfolio is concerned with the improvement and development highway network programmes. It is known as the Road Development Investment Portfolio – Development.

The second programme foresees on what restrengthening and rehabilitation programmes are required in order to maintain and improve the overall serviceability of the network.

ii) Medium Term Maintenance Investment Portfolio

The second and equally important part of the investment portfolio will deal with the five year planned maintenance programmes. This key investment programme will be directly linked to, and supportive of, the development programme. Each and every maintenance strategy and action being complimentary to the overall Business and Investment Plan. This part of the Portfolio will be called the Medium Term Maintenance Investment Portfolio.

The final programme in the SBP is what previously would have been called the routine maintenance programme.

iii) Annual Road Conservation Investment Programme (ARCP)

For the RAM System to be truly effective in its outputs, there cannot be a “routine” approach to road care and conservation.

All maintenance works, no matter how ordinary or apparently small (or insignificant) must be qualified as an investment.

This final programme is therefore containing all the targeted works intended to conserve what asset values the existing national highway network possesses. The programme is referred to as a Road Conservation Programme.

Categorizing of Road Network

In order to develop a global road category, equally applicable in all parts of country, following five road categories have been defined (see attached Figure 1 - 1 and 1 - 2).

Road Category Class I	:	Motorway	6 Lane
Road Category Class II	:	Primary Highway	4 Lane
Road Category Class III	:	Secondary Highways	2 Lane
Road Category Class IV	:	Minor Collector Roads	2 Lane
Road Category Class V	:	Feeder Roads	Single Lane

ROAD ASSET MANAGEMENT SYSTEM (RAMS)

Network Analysis Process

Figure 1 - 1: The Road Category Index RCI

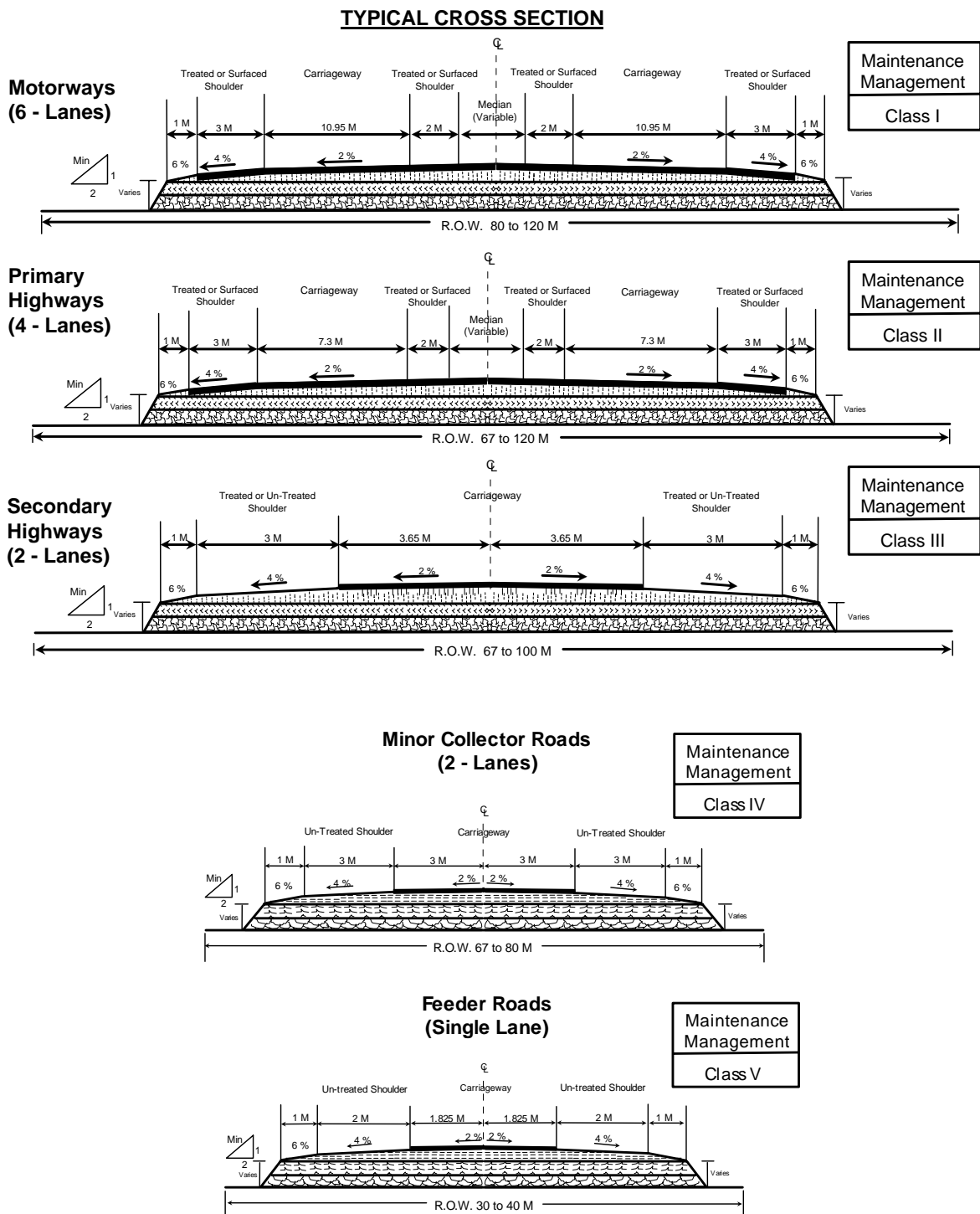
ROAD CATEGORY	ROAD TYPE	RCI
I	Motorway (6 – Lane)	4.0
II	Primary Highway (4 – Lane)	3.5
III	Secondary Highways (2 - Lane)	3.0
IV	Minor Collector Roads (2 - Lane)	2.5
V	Feeder Roads (Single Lane)	2.0

ROAD ASSET MANAGEMENT SYSTEM (RAMS)

Typical Cross Section

Figure 1 - 2:

The following 5 categories apply to National Highways and are used for all analysis purposes:-



NETWORK ANALYSIS PROCESS IDENTIFICATION CODES FOR ROAD MAINTENANCE MODELING

The HDM Model Applied to National Highways

For the 1998 study by NHA and IBRD a matrix of defect conditionalities was equated to two types of road, asphaltic concrete and surface treated. These were cross-referenced against four different defect scenarios.

For the further design required in the RAM System and utilizing the new HDM IV model the original traffic bands have been compressed to four and the types of pavement enlarged to differentiate between aggregate bases and water bound macadam bases.

The cross referencing of road asset values against road conditionalities is important when managing the various resources.

This is also the case in applying the Maintenance Management System (model) that is to be adopted.

The attached sheets show the parts of the analysis process 1-5 with the standard matrix applied to various functions.

Figure No.	Description
2 - 1	Identification Codes Based upon Defect Severity
2 - 2	Maintenance Management Focus to Reflect Asset Values and Road User Interests
2 - 3 & 2 - 4	Functional Classifications Based upon Construction Value and Traffic Volumes
2 - 5 & 2 - 6	Application of Maintenance Analysis Levels

PRIORITIZATION OF PROGRAMME DESIGNERS CONDITION SURVEYS

General

The annual exercise of analyzing the national highway network should also be managed in the most efficient manner and with due regard to available human and equipment resources.

To simply collect data that is not needed or not a priority would not be conducive to good asset management.

There have to be some guideline principles used as a basis for the process.

The major influence on survey and analysis priorities has to be the hierarchy of road categories. Motorways for instance have to receive the first and highest level of analysis compared to minor roads.

The hierarchy of road categories will also generally reflect the highest level of customer focus. It can generally be expected that the higher the category of road the higher the volume of traffic.

Other factors however need also to be considered.

- When was the last time that the full condition survey was undertaken on any specific length?
- Was all the data collected or only selected items?
- Is there a special focus development programme expected on the local network in question – and does this demand more urgent or detailed information?
- Was the link placed at the bottom of a previous priority listing and as a result the survey never took place as planned?

When all these questions are considered a prioritized list of links for survey can be drawn up.

Prioritized Listing of Links for Annual Condition Survey

The following are the broad based priorities that the Programme Designer should consider first:

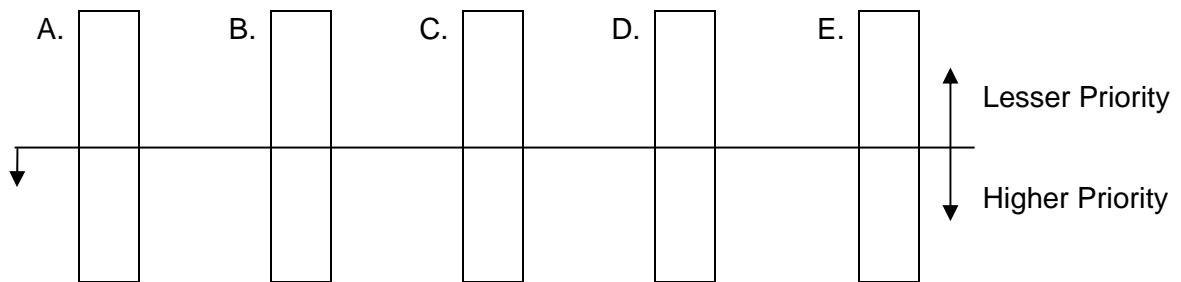
A. Road Category	V IV III II I	<table border="1" style="border-collapse: collapse; width: 50px; height: 100px;"> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> </table>						Indicate X										
B. Traffic Volume	1 2 3 4 5 6 7 8 9 10 11 12 > 12	<table border="1" style="border-collapse: collapse; width: 50px; height: 150px;"> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> </table>																Indicate X
C. Construction Asset Value/Km (Rs. Million) to	<table border="1" style="border-collapse: collapse; width: 50px; height: 100px;"> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> </table>						Indicate X										
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D. The last survey was carried out :-

1 year ago	<input type="checkbox"/>
2 years ago	<input type="checkbox"/>
3 years ago	<input type="checkbox"/>
> 3 years ago	<input type="checkbox"/>

Indicate X

From The evaluation



From carrying out this process through the computer, it will be possible to prepare the priority list of the 171 links used on the national highway network for modeling analysis.

From this list must be drawn up a programme of surveys that will show how many teams are required and for what period of time and with what equipment.

Any special measurements or specialized equipment will also have to be shown in the programme.

Level of Analysis

The Programme Designer must also relate the level or complexity of his network analysis according to certain parameters. Condition surveys involving detailed studies on safety or environmental issues, are not applicable to low cost, low traffic volume, feeder roads (Category V).

The level and depth of the surveys must therefore also be set. Highway Network Analysis – 4 shows the suggested levels of analysis according to a combination of Asset values and existing conditionalities.

The 1999 list of condition surveys must be concluded after review of the existing data (and how up to date it is) and the application of HDM IV to determine which links are in which Identification Code. (See Highway Network Analysis – 1 & 4).

HIGHWAY NETWORK ANALYSIS PROCESS - 1

IDENTIFICATION CODES FOR ROAD MAINTENANCE MANAGEMENT PROGRAMMES (BASED UPON DEFECT SEVERITY)

Asphalt Surface with Aggregate Base		Good				Fair				Poor				Very Poor				Roughness
		< 3.5 IRI < 2500 BI				3.5 < IRI < 5.0 2500 < BI < 3500				5.0 < IRI < 7.0 3500 < BI < 5000				> 7.0 IRI > 5000 BI				
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	Cracks (Length)
Asphalt	< 2000	PA1AW	PA1AX	PA1AY	PA1AZ	PA1BW	PA1BX	PA1BY	PA1BZ	PA1CW	PA1CX	PA1CY	PA1CZ	PA1DW	PA1DX	PA1DY	PA1DZ	
Concrete	2000 - 5000	PA2AW	PA2AX	PA2AY	PA2AZ	PA2BW	PA2BX	PA2BY	PA2BZ	PA2CW	PA2CX	PA2CY	PA2CZ	PA2DW	PA2DX	PA2DY	PA2DZ	
Base	5000 - 7000	PA3AW	PA3AX	PA3AY	PA3AZ	PA3BW	PA3BX	PA3BY	PA3BZ	PA3CW	PA3CX	PA3CY	PA3CZ	PA3DW	PA3DX	PA3DY	PA3DZ	
ABC	> 7000	PA4AW	PA4AX	PA4AY	PA4AZ	PA4BW	PA4BX	PA4BY	PA4BZ	PA4CW	PA4CX	PA4CY	PA4CZ	PA4DW	PA4DX	PA4DY	PA4DZ	

Asphalt Surface with Granular Base		Good				Fair				Poor				Very Poor				Roughness
		< 3.5 IRI < 2500 BI				3.5 < IRI < 5.0 2500 < BI < 3500				5.0 < IRI < 7.0 3500 < BI < 5000				> 7.0 IRI > 5000 BI				
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	Cracks (Length)
Asphalt	< 2000	PG1AW	PG1AX	PG1AY	PG1AZ	PG1BW	PG1BX	PG1BY	PG1BZ	PG1CW	PG1CX	PG1CY	PG1CZ	PG1DW	PG1DX	PG1DY	PG1DZ	
Concrete	2000 - 5000	PG2AW	PG2AX	PG2AY	PG2AZ	PG2BW	PG2BX	PG2BY	PG2BZ	PG2CW	PG2CX	PG2CY	PG2CZ	PG2DW	PG2DX	PG2DY	PG2DZ	
Base	5000 - 7000	PG3AW	PG3AX	PG3AY	PG3AZ	PG3BW	PG3BX	PG3BY	PG3BZ	PG3CW	PG3CX	PG3CY	PG3CZ	PG3DW	PG3DX	PG3DY	PG3DZ	
WBM	> 7000	PG4AW	PG4AX	PG4AY	PG4AZ	PG4BW	PG4BX	PG4BY	PG4BZ	PG4CW	PG4CX	PG4CY	PG4CZ	PG4DW	PG4DX	PG4DY	PG4DZ	

Surface Treated with Aggregate "designed" Base		Good				Fair				Poor				Very Poor				Roughness
		< 3.5 IRI < 2500 BI				3.5 < IRI < 5.0 2500 < BI < 3500				5.0 < IRI < 7.0 3500 < BI < 5000				> 7.0 IRI > 5000 BI				
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	Cracks (Length)
Surface	< 2000	SA1AW	SA1AX	SA1AY	SA1AZ	SA1BW	SA1BX	SA1BY	SA1BZ	SA1CW	SA1CX	SA1CY	SA1CZ	SA1DW	SA1DX	SA1DY	SA1DZ	
Treatment	2000 - 5000	SA2AW	SA2AX	SA2AY	SA2AZ	SA2BW	SA2BX	SA2BY	SA2BZ	SA2CW	SA2CX	SA2CY	SA2CZ	SA2DW	SA2DX	SA2DY	SA2DZ	
Base	5000 - 7000	SA3AW	SA3AX	SA3AY	SA3AZ	SA3BW	SA3BX	SA3BY	SA3BZ	SA3CW	SA3CX	SA3CY	SA3CZ	SA3DW	SA3DX	SA3DY	SA3DZ	
ABC	> 7000	SA4AW	SA4AX	SA4AY	SA4AZ	SA4BW	SA4BX	SA4BY	SA4BZ	SA4CW	SA4CX	SA4CY	SA4CZ	SA4DW	SA4DX	SA4DY	SA4DZ	

Surface Treated with Granular Base		Good				Fair				Poor				Very Poor				Roughness
		< 3.5 IRI < 2500 BI				3.5 < IRI < 5.0 2500 < BI < 3500				5.0 < IRI < 7.0 3500 < BI < 5000				> 7.0 IRI > 5000 BI				
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	Cracks (Length)
Surface	< 2000	SG1AW	SG1AX	SG1AY	SG1AZ	SG1BW	SG1BX	SG1BY	SG1BZ	SG1CW	SG1CX	SG1CY	SG1CZ	SG1DW	SG1DX	SG1DY	SG1DZ	
Treatment	2000 - 5000	SG2AW	SG2AX	SG2AY	SG2AZ	SG2BW	SG2BX	SG2BY	SG2BZ	SG2CW	SG2CX	SG2CY	SG2CZ	SG2DW	SG2DX	SG2DY	SG2DZ	
Base	5000 - 7000	SG3AW	SG3AX	SG3AY	SG3AZ	SG3BW	SG3BX	SG3BY	SG3BZ	SG3CW	SG3CX	SG3CY	SG3CZ	SG3DW	SG3DX	SG3DY	SG3DZ	
WBM	> 7000	SG4AW	SG4AX	SG4AY	SG4AZ	SG4BW	SG4BX	SG4BY	SG4BZ	SG4CW	SG4CX	SG4CY	SG4CZ	SG4DW	SG4DX	SG4DY	SG4DZ	

HIGHWAY NETWORK ANALYSIS PROCESS - 2
MAINTENANCE MANAGEMENT FOCUS TO REFLECT
ASSET VALUES AND ROAD USER INTERESTS

Asphalt Surface with Aggregate Base		Good				Fair				Poor				Very Poor				Roughness	Cracks (Length)	Road Construction Asset Value
		< 3.5 IRI < 2500 BI				3.5 < IRI < 5.0 2500 < BI < 3500				5.0 < IRI < 7.0 3500 < BI < 5000				> 7.0 IRI > 5000 BI						
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%			
PA																				
Asphalt	< 2000	PA1AW	PA1AX	PA1AY	PA1AZ	PA1BW	PA1BX	PA1BY	PA1BZ	PA1CW	PA1CX	PA1CY	PA1CZ	PA1DW	PA1DX	PA1DY	PA1DZ			
Concrete	2000 - 5000	PA2AW	PA2AX	PA2AY	PA2AZ	PA2BW	PA2BX	PA2BY	PA2BZ	PA2CW	PA2CX	PA2CY	PA2CZ	PA2DW	PA2DX	PA2DY	PA2DZ			
Base	5000 - 7000	PA3AW	PA3AX	PA3AY	PA3AZ	PA3BW	PA3BX	PA3BY	PA3BZ	PA3CW	PA3CX	PA3CY	PA3CZ	PA3DW	PA3DX	PA3DY	PA3DZ			
ABC	> 7000	PA4AW	PA4AX	PA4AY	PA4AZ	PA4BW	PA4BX	PA4BY	PA4BZ	PA4CW	PA4CX	PA4CY	PA4CZ	PA4DW	PA4DX	PA4DY	PA4DZ			
PG																				
Asphalt	< 2000	PG1AW	PG1AX	PG1AY	PG1AZ	PG1BW	PG1BX	PG1BY	PG1BZ	PG1CW	PG1CX	PG1CY	PG1CZ	PG1DW	PG1DX	PG1DY	PG1DZ			
Concrete	2000 - 5000	PG2AW	PG2AX	PG2AY	PG2AZ	PG2BW	PG2BX	PG2BY	PG2BZ	PG2CW	PG2CX	PG2CY	PG2CZ	PG2DW	PG2DX	PG2DY	PG2DZ			
Base	5000 - 7000	PG3AW	PG3AX	PG3AY	PG3AZ	PG3BW	PG3BX	PG3BY	PG3BZ	PG3CW	PG3CX	PG3CY	PG3CZ	PG3DW	PG3DX	PG3DY	PG3DZ			
WBM	> 7000	PG4AW	PG4AX	PG4AY	PG4AZ	PG4BW	PG4BX	PG4BY	PG4BZ	PG4CW	PG4CX	PG4CY	PG4CZ	PG4DW	PG4DX	PG4DY	PG4DZ			
SA																				
Surface	< 2000	SA1AW	SA1AX	SA1AY	SA1AZ	SA1BW	SA1BX	SA1BY	SA1BZ	SA1CW	SA1CX	SA1CY	SA1CZ	SA1DW	SA1DX	SA1DY	SA1DZ			
Treatment	2000 - 5000	SA2AW	SA2AX	SA2AY	SA2AZ	SA2BW	SA2BX	SA2BY	SA2BZ	SA2CW	SA2CX	SA2CY	SA2CZ	SA2DW	SA2DX	SA2DY	SA2DZ			
Base	5000 - 7000	SA3AW	SA3AX	SA3AY	SA3AZ	SA3BW	SA3BX	SA3BY	SA3BZ	SA3CW	SA3CX	SA3CY	SA3CZ	SA3DW	SA3DX	SA3DY	SA3DZ			
ABC	> 7000	SA4AW	SA4AX	SA4AY	SA4AZ	SA4BW	SA4BX	SA4BY	SA4BZ	SA4CW	SA4CX	SA4CY	SA4CZ	SA4DW	SA4DX	SA4DY	SA4DZ			
SG																				
Surface	< 2000	SG1AW	SG1AX	SG1AY	SG1AZ	SG1BW	SG1BX	SG1BY	SG1BZ	SG1CW	SG1CX	SG1CY	SG1CZ	SG1DW	SG1DX	SG1DY	SG1DZ			
Treatment	2000 - 5000	SG2AW	SG2AX	SG2AY	SG2AZ	SG2BW	SG2BX	SG2BY	SG2BZ	SG2CW	SG2CX	SG2CY	SG2CZ	SG2DW	SG2DX	SG2DY	SG2DZ			
Base	5000 - 7000	SG3AW	SG3AX	SG3AY	SG3AZ	SG3BW	SG3BX	SG3BY	SG3BZ	SG3CW	SG3CX	SG3CY	SG3CZ	SG3DW	SG3DX	SG3DY	SG3DZ			
WBM	> 7000	SG4AW	SG4AX	SG4AY	SG4AZ	SG4BW	SG4BX	SG4BY	SG4BZ	SG4CW	SG4CX	SG4CY	SG4CZ	SG4DW	SG4DX	SG4DY	SG4DZ			

	Traffic
Road User Focus II	< 5000
Road User Focus I	> 5000

SAFETY / SOCIAL II		SAFETY / SOCIAL I	
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HIGHWAY NETWORK ANALYSIS PROCESS - 3/1
FUNCTIONAL CLASSIFICATIONS BASED UPON
CONSTRUCTION VALUE AND TRAFFIC VOLUMES

Route	PA1		PA2		PA3		PA4	
	Kms		Kms		Kms		Kms	
N-5								
N-25								
N-35								
N-40								
N-50								
N-55								
N-65								
N-70								

Route	PG1		PG2		PG3		PG4	
	Kms		Kms		Kms		Kms	
N-5								
N-25								
N-35								
N-40								
N-50								
N-55								
N-65								
N-70								

HIGHWAY NETWORK ANALYSIS PROCESS - 3/2
FUNCTIONAL CLASSIFICATIONS BASED UPON
CONSTRUCTION VALUE AND TRAFFIC VOLUMES

SA SURFACE TREATED WITH AGGREGATE "DESIGNED" BASE SECTIONS AND LINKS								
Route	SA1	Kms	SA2	Kms	SA3	Kms	SA4	Kms
N-5								
N-25								
N-35								
N-40								
N-50								
N-55								
N-65								
N-70								

SG SURFACE TREATED WITH GRANULAR BASE SECTIONS AND LINKS								
Route	SG1	Kms	SG2	Kms	SG3	Kms	SG4	Kms
N-5								
N-25								
N-35								
N-40								
N-50								
N-55								
N-65								
N-70								

NETWORK ANALYSIS PROCESS
DEFINING THE LEVEL OF ANALYSIS
ACCORDING TO ROAD CATEGORY

ROAD CATEGORY	I	I/II	II	II/III	III	III/IV	IV	V
	PROGRAMME DESIGN ANALYSIS LEVEL							
	1	2	3	4	5	6	7	8
Safety Audits (i) Full	●	●	●	●				
Safety Audits (ii) Partial					●	●	●	●
Congestion Modeling (Study of Capacity Reduction)	●	●	●	●				
Geometric/Profile Surveys	●	●	●	●	●			
Basic Hydrographic/Drainage Surveys	●	●	●	●	●			
Environmental Damage Assessment	●	●	●	●	●	●		
Traffic Surveys (Volumes/Characteristics)	●	●	●	●	●	●	●	●
Traffic Surveys (Loading)	●	●	●	●				
Deflection Measurements F.W.D.	●	●	●	●	●			
Deflection Measurements Others						●	●	
Soil/Sub strata Tests	●	●	●	●				
Condition Survey (i) Full Parameter 1	●	●	●	●	●	●		
Condition Survey (ii) Partial Parameter 1							●	●
Condition Survey (i) Full Parameter 2	●	●	●	●	●	●	●	●
Condition Survey (ii) Partial Parameter 2								
HDM Modeling								
A. Every Year	●	●	●					
B. Every 2 or 3 Years				●	●	●		
C. > 3 Years							●	●

HIGHWAY NETWORK ANALYSIS PROCESS - 4

APPLICATION OF MAINTENANCE ANALYSIS LEVELS (1-8)

Asphalt Surface with Aggregate Base		Good				Fair				Poor				Very Poor				Roughness	Road Construction Asset Value
		< 3.5 IRI < 2500 BI				3.5 < IRI < 5.0 2500 < BI < 3500				5.0 < IRI < 7.0 3500 < BI < 5000				> 7.0 IRI > 5000 BI					
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	Cracks (Length)	
Asphalt Surface with Granular Base		Good				Fair				Poor				Very Poor				Roughness	Road Construction Asset Value
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	Cracks (Length)	
Asphalt	< 2000 →	5				5				5				4					I
Concrete	2000 - 5000 →																		
Base	5000 - 7000 →	4				3				2				1					
ABC	> 7000 →																		
Asphalt Surface with Granular Base		Good				Fair				Poor				Very Poor				Roughness	Road Construction Asset Value
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	Cracks (Length)	
Asphalt	< 2000 →	6				6				6				5					II
Concrete	2000 - 5000 →																		
Base	5000 - 7000 →	5				4				3				2					
WBM	> 7000 →																		
Surface Treated with Aggregate "designed" Base		Good				Fair				Poor				Very Poor				Roughness	Road Construction Asset Value
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	Cracks (Length)	
Surface	< 2000 →	7				7				7				6					III
Treatment	2000 - 5000 →																		
Base	5000 - 7000 →	6				5				4				3					
ABC	> 7000 →																		
Surface Treated with Granular Base		Good				Fair				Poor				Very Poor				Roughness	Road Construction Asset Value
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	Cracks (Length)	
Surface	< 2000 →	8				8				8				7					IV
Treatment	2000 - 5000 →																		
Base	5000 - 7000 →	7				6				5				4					
WBM	> 7000 →																		

	Traffic
Road User Focus II	⇔ < 5000
Road User Focus I	⇔ > 5000

↑ SAFETY / SOCIAL II	↑ SAFETY / SOCIAL I
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HIGHWAY NETWORK ANALYSIS PROCESS - 5

INDICATIVE TREATMENT SELECTIONS [IF HDM NOT APPLIED]

Asphalt Surface with Aggregate Base		Good				Fair				Poor				Very Poor				Roughness	Cracks (Length)	Road Construction Asset Value
		< 3.5 IRI < 2500 BI				3.5 < IRI < 5.0 2500 < BI < 3500				5.0 < IRI < 7.0 3500 < BI < 5000				> 7.0 IRI > 5000 BI						
Surface	Traffic (ADT)	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%	< 25%	< 50%	< 75%	> 75%			
PA																				
Asphalt	< 2000 →	E	E	E	E	E/D	E/D	D/E	D/E	D	C/D	C/D	C/A	D	C	A/C	A		I	
Concrete	2000 - 5000 →	E	E	E	E	E/D	E/D	D/E	D/E	D	C/D	C/D	C/A	D	C	A/C	A			
Base ABC	5000 - 7000 → > 7000 →	E	E	E	E	E/D	E/D	D/E	D/E	D	C/D	C/D	A	C	A/C	A/C	A			
PG																				
Asphalt Surface with Granular Base																				
Good: < 3.5 IRI, < 2500 BI; Fair: 3.5 < IRI < 5.0, 2500 < BI < 3500; Poor: 5.0 < IRI < 7.0, 3500 < BI < 5000; Very Poor: > 7.0 IRI, > 5000 BI																				
Asphalt	< 2000 →	E	E	E	E	E/D	E/D	C/D	C/D	C	D	B	B/A	D	C	A/C	A		II	
Concrete	2000 - 5000 →	E	E	E	E	E/D	E/D	C/D	C/D	C	D	B	B/A	D	C	A/C	A			
Base WBM	5000 - 7000 → > 7000 →	E	E	E	E	E/D	E/D	C/D	C/D	C	B/A	B/A	A	B/C	A/B	A/B	A			
SA																				
Surface Treated with Aggregate "designed" Base																				
Good: < 3.5 IRI, < 2500 BI; Fair: 3.5 < IRI < 5.0, 2500 < BI < 3500; Poor: 5.0 < IRI < 7.0, 3500 < BI < 5000; Very Poor: > 7.0 IRI, > 5000 BI																				
Surface Treatment	< 2000 →	E	E	E	E	E/D	E/D	E	E/D	E	D	D	D/C	D	D/C	C	C		III	
Base ABC	2000 - 5000 →	E	E	E	E	E/D	E/D	D	D	D	C	C	C	C	A/C	A	A			
Base ABC	5000 - 7000 → > 7000 →	E	E	E	E	E/D	E/D	D	D	D	C	C	C	C	A/C	A	A			
SG																				
Surface Treated with Granular Base																				
Good: < 3.5 IRI, < 2500 BI; Fair: 3.5 < IRI < 5.0, 2500 < BI < 3500; Poor: 5.0 < IRI < 7.0, 3500 < BI < 5000; Very Poor: > 7.0 IRI, > 5000 BI																				
Surface Treatment	< 2000 →	E	E	E	E	E/D	E/D	E	E/D	E	D	B	C/B	C/B	C/B	B	B		IV	
Base WBM	2000 - 5000 →	E	E	E	E	E/D	E/D	D	D	D	D	C	B/A	C	C	A	A			
Base WBM	5000 - 7000 → > 7000 →	E	E	E	E	E/D	E/D	D	D	D	D	C	B/A	C	C	A	A			

↑ SAFETY / SOCIAL II	↑ SAFETY / SOCIAL I
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	Traffic
Road User Focus II ⇔	< 5000
Road User Focus I ⇔	> 5000

MEASURED CONDITIONALITIES THAT ARE CONSIDERED FOR THE PROCESS OF ASSESSING THE ROAD NETWORKS SERVICEABILITY AND DESIGNING MAINTENANCE AND CONSERVATION PROGRAMMES

APPLIED CONDITIONALITIES

The network assessment process will consider the following key aspects of the road's various components.

I. The Existing Status of the Road

This will be assessed by the information supplied by the field office or agency, and should form part of the authorities network data bank or Highway Register.

The technical inputs of C and E are reasonably simple to assess and calculate. It is important that the engineers who will be responsible for representing the agency during the execution phase of any subsequent programme, clearly understand these basic elemental conditionalities.

II. The Assessment of the Road's Condition, Level of Maintenance Care and Resulting Serviceability

Whilst the detailed inputs to classify these particular conditionalities are not difficult to measure, to give a standardized approach to assessing the various criteria it is important that the conditionalities under this part of the process are measured and recorded, by an independent team. Because of the simplicity of these measurements on site, the agencies own representatives can easily check the severity rankings in the process of applying the quality assurance programme.

III The Forecast of the Performance of the Road under Existing Conditions

The measurements and assessments of this element of the assessment process are extremely important to those responsible for designing any subsequent programme of strengthening or rehabilitation works. The road's condition, after rectification works are completed, should ensure that it is capable of providing good functional serviceability for the traffic that it will be expected to carry. The designers should be in a position to forecast the remaining service life and, if applying their own maintenance management model, the anticipated maintenance interventions and expected costs.

DETAILED DESCRIPTION OF THE TECHNICAL CONDITIONALITIES

There are eleven subject conditionalities for consideration. However some of these are further subdivided into various different tests or categories of data. Altogether these will give a more detailed picture for analysis and are used also for further

assessment and for justifying funding provisions and maintenance interventions and operations.

In the following paragraphs, each conditionality that is available for consideration is described and the rationale for its inclusion in the process is given.

The final and detailed list of conditionalities can be seen in Annexure I. Also the severity parameters are shown.

From Parameters **1** - Selected Prevailing Environmental Conditions (See Annexure I)

A. Category and Classification of Road Within the Network

i) To establish the importance of the route in the local network and where appropriate the national network. Development projects and reconstruction schemes will consider these inputs as a primary element of information.

ii) “As Constructed“ Value of Road

This is important because it indicates the previous investment levels and the considered importance of the subject link. The higher the investment level the more important it is to both protect and capitalise on the pavement's existing and designed qualities and strengths.

In cases of reconstruction the constructed value enables the engineer to calculate the salvage value of the existing pavement structure.

iii) Existing Road Width

This input is especially important when considering safety. If the pavement edge is broken or eroded, or the step to the shoulder too great, either of these combined with a narrow pavement creates a serious safety consideration.

For the Development Planner, considering the pavement width in conjunction with the existing or projected traffic volumes, (B (i)) will show the inadequacies of capacity on the link in question and indicate where there are problems of under design.

iv) Existing Shoulder Width

The width of the available shoulder becomes a critical factor in circumstances where a narrow or inadequate carriageway exists.

B. Existing Traffic Characteristics

i) Traffic Volumes (A.A.D.T.)

The total volumes of all traffic are relevant when coupled with the conditionalities G to enable the Programme Designer to review highway safety considerations. The higher total volumes will create the higher incidence of possible accidents if combined with poor physical safety features or poor attention to lateral and longitudinal defects occurring on the carriageway. Also the Vehicle Operating Costs are directly proportional to Traffic volumes.

ii) Equivalent Axles (Daily)

The E.A. characteristics are the major inputs for pavement design purposes, and significantly important for long term development planning.

C. i) The Pavement's Calculated Structural Ability to Support Loading (Modified Structural No.)

This conditionality is used to complement the carriageway classification. It is an engineering qualification. This category of analysis also indicates if the combination of " as built " pavement layers is providing the desirable level of support for the loads that are being carried.

ii) Existing Ground Bearing / Subgrade Conditions

This indicator is included in the qualification list, to highlight those links where, given a poor structural subgrade, expensive surface treatments are inappropriate ways of strengthening weak pavements. The indication on such sites is for major reconstruction and subgrade strengthening.

Poor subgrade results also show the maintenance engineer where to intervene quickly in cases of cracked or disturbed surfaces. Water penetrating to poor subgrades, exploits such inherent weaknesses and accelerates the pavements eventual failure mechanisms.

D. Combined Climatic and Environmental Conditions that Effect Pavement Stability

i) Annual Rainfall Average

The combination of high rainfall coupled with poor subgrade strengths, creates a difficult environment for the management of highway pavements. If the high rainfall areas also have badly cracked pavements then serviceable life is greatly reduced. This conditionality can indicate special areas where roads are at an increased risk from water penetrating the pavement.

ii) Available Cross Drainage Width / km

The roads ability to cope with hydrological run off areas, and to dispose of water from the carriageway is important. The combination of poor cross drainage facilities and high rainfall figures is a potential threat to the strength of underlying layers. In the worst cases, flash floods and exceptional rains will cause erosion or wash-outs.

E. Pavement Behaviour Under Loading

This conditionality gives vitally important input factors to the system, in assessing the carriageways ability to perform the function it is intended to perform. This is a prime indicator of what remaining life expectancy the Programme Designer can expect from the road. Also indicates to the

maintenance engineer if major movement is detected, that designed overlays may be reaching critical strain levels in their design life.

The assessment of the strength of a road pavement structure can be undertaken by measuring how much the pavement deflects under a simulated standard load.

Several methods are used to determine this factor. The older and more widely known is the Benkleman Beam. In more recent years the Falling Weight Deflectometer has gained prominence, although the interpretation of results requires skill and experience to benefit from its application.

From Parameters **2** - Selected Pavement Condition Criteria

F. Existing Carriageway Surface Conditions that can affect Capacity & Safety

i) Erosion from Original Edge

If edge erosion is found in combination with a narrow pavement width, then the incidence of vehicles moving towards the centre line creates a serious safety consideration.

ii) Edge Step

This conditionality can be a serious defect in two major ways. Traffic will generally move towards the centreline and away from the edge where a significant step is continuous and / or deep. If a vehicle attempts to move onto a shoulder having an edge step, the effect on the handling stability of the vehicle is badly affected, especially at speed.

G. Surface Conditions that May Indicate the Necessity for Maintenance, Rehabilitation, Reconstruction, or Safety Measures

i) Wheel Tracking Rutting (Depth)

This condition makes the stability of vehicles vulnerable, especially at speed. Additionally if the ruts hold water then aquaplaning is a serious problem.

ii) Length of Rut Affected Pavement

This condition affects the capacity of the road, by reducing average speeds over continuous or long lengths. This is in addition to considerations of safety as mentioned in (i).

iii) Wheel Track Cracking

A sign that structural failures probably exist due to poor strengths in the lower layers. Indicates that some layers are inadequate to support loading. Necessity to seal as first stage intervention to stop the ingress of water.

iv) Wheel Track Cracking Length Affected

A conditionality that would in the worst case of severity indicate more major works of rehabilitation or possibly reconstruction especially if exhibited in conjunction with other conditionalities such as major rutting. Like so many defect

conditionalities in G and H categories, the intervention required would depend upon the classification of the original road and its salvage value and importance in the network.

v) Centerline Carriageway Cracking

Indicates failures of pavement layers that may not be due to traffic loading. Possibly the surfacing is old and has become brittle and is in need of rehabilitation, or there is a more fundamental problem with sub grades affected by moisture.

vi) Cracking Width

This is measured as the maximum value of any cracking that exists in the wheel tracks

vii) Ravelling Classification

Loss of surfacing material, that has not degenerated to the full depth of the surfacing layer.

viii) Potholes (repaired or open)

The first conditionality to indicate a requirement for maintenance intervention at the earliest time. Potholes, either open or repaired, are indicative of several things, the least not being that the cracked carriageway should have been arrested in its deterioration before the surfacing material began to disintegrate and become displaced.

The presence of open potholes is also the first trigger to public awareness of a maintenance intervention requirement.

A considerable number of repaired potholes, even over a number of years, indicates that the structural integrity of the upper pavement layer is compromised and cannot be expected to behave homogeneously.

H. Surface Conditions that Effect Vehicle Operating Costs (V.O.C.)

The roughness of the surface is the predominant condition to effect vehicle operating costs on normal road networks. It can be the result of a pavement losing its surface regularity and texture, but also be exacerbated by poorly carried out repairs.

Figure 3-1: PARAMETERS FOR

1

- TECHNICAL ASSESSMENTS AND AUDITS
- OPERATIONAL RESPONSE RATINGS
- TREATMENT SELECTION RULES

SELECTED

PREVAILING ENVIRONMENTAL CONDITIONS

	a	b	c	d
Primary Rating Value				

A. (i) Category or Classification of Road within the Network

Category of Road	Importance Factor	Localised feeder road	Roads linking two National Highways	National Roads to prov. capt./local ports	National Rd. Prov. Capt. int. Boundary/ports

A. (ii) The "As Constructed" Asset Value of Road.

Carriageway classification	Importance Factor	Surface dress with granular base	Surface dress with designed/stab. base	Asphaltic concrete with granular base	Asphaltic concrete with designed/stab. base

A. (iii)

Road width average (m)	Importance Factor	> 7.30	4.5 - 7.3	3.65 - 4.5	< 3.65

A. (iv)

Shoulder width (m)	Importance Factor	> 2.0	1.0 - 2.0	0.5 - 1.0	< 0.5

B. (i)

Traffic Volume A.A.D.T.	Importance Factor	< 2000	2000 - 5000	5000 - 7000	> 7000

B. (ii)

Equivalent axle daily	Importance Factor	< 3000	3000 - 6000	6000 - 12000	> 12000

C. (i) Pavements Structural Composition - Ability to Support Loading

S.N.C.	Importance Factor	> 4.5	3.5 - 4.5	2.5 - 3.5	< 2.5

C. (ii) Existing Ground Bearing Capacity / Sub grade Conditions - Ability to Support Road

Subgrade C.B.R. Value (%)	Importance Factor	> 25	10 - 25	5 - 10	< 5

D. Combined Climatic and Drainage Conditions that could effect Pavement Stability.

D. (i)

Annual Rainfall average (mm)	Importance Factor	Up to 500	500 - 1000	1000 - 1500	> 1500

D. (ii)

Available drainage width / km (m)	Importance Factor	> 250	100 - 250	15 - 100	< 15

E. Pavements Behaviour under loading

Deflection Mills (1/1000 inch)	Importance Factor	< 5	5 - 10	10 - 25	> 25

Figure 3-2: PARAMETERS FOR

2

- TECHNICAL ASSESSMENTS AND AUDITS
- OPERATIONAL RESPONSE RATINGS
- TREATMENT SELECTION RULES

SELECTED

PAVEMENT CONDITION CRITERIA

	a	b	c	d
Primary Rating Value				

F. Existing Carriageway Surface Conditions that can Affect Capacity and Safety

F. (i)

Erosion from original edge > 150 mm	Importance Factor	Up to 250 m	250 - 500 m	500 - 750 m	750 - 1000 m

F. (ii)

Edge Step > 50 mm	Importance Factor	Up to 250 m	250 - 500 m	500 - 750 m	750 - 1000 m

G. Surface Conditions that may indicate the necessity for Maintenance, Rehabilitation, Reconstruction or Safety Measures

G. (i)

Wheel track rutting depth (mm)	Importance Factor	6.0 - 12.0	12.0 - 25.0	25.0 - 40.0	> 40

G. (ii)

Wheel track rutting length effected/1 km	Importance Factor	Up to 250 m	250 - 500 m	500 - 750 m	750 - 1000 m

G. (iii)

Wheel track cracking (Importance Factor	0	< 2 m / m ²	< 5 m / m ²	> 5 m / m ²

G. (iv)

Wheel track cracking length effected/1 km	Importance Factor	Up to 250 m	250 - 500 m	500 - 750 m	750 - 1000 m

G. (v)

Centre line carriage way cracking (m/m ²)	Importance Factor	0	< 2 m / m ²	< 5 m / m ²	> 5 m / m ²

G. (vi)

Cracking Width (mm) as per G(iii)	Importance Factor	Hair Line < 2.0	2.0 - 6.0	6.0 - 10.0	Sev. Spalled edges > 10.0

G. (vii)

Ravelling Classification	Importance Factor	Agg. / binder has started to wear	+ Surface texture is Slightly rough & pitted	+ Surface texture is moderately rough & pitted	+ Surface texture is extremely rough & pitted

G. (viii)

Potholes (rep'd/open) Area effected in 1 km	Importance Factor	< 3 m ²	3 - 6 m ²	6 - 9 m ²	> 9 m ²

H. Surface Conditions that effect Vehicle Operating Costs.

Roughness Value (mm / km)	Importance Factor	< 2000	2000 - 3000	3000 - 5000	> 5000

THE PREPARATION OF ALL MAINTENANCE AND CONSERVATION WORKS PROGRAMMES TO A PREPARED DESIGN

The RAMS will provide a prioritized list of road links where the Service Provider will be required to prepare his proposed programme.

This list will have clear and concise reasons for the order in which works estimates should be prepared. It will be an integral part of an NHA approved Programme Design.

The design will give clear and concise guidelines on what should be addressed in the maintenance works, and what should be left out.

The whole process of estimating the maintenance works will follow a set procedure which will be open and transparent and will involve the senior management from both the Planning and Highways departments within NHA, working to one concerted programme.

Much of the determination of the level and depth of work to be included will be pre-determined by the Road Classification, the constructed Asset Value, and the recommended periodic intervention as given by the Maintenance Modeling System (HDM or similar).

To assist the Service Provider in firstly carrying out his estimating procedures and secondly presenting appropriate results as demanded by the programme, the Programme Designer will also have a process of survey verification in addition to the standard conditions surveys, should it be required. This verification process he will either carry out himself, or appoint others to do independently.

The whole process of preparing the maintenance works estimates will be recorded on the one form which will then become an integral part of the Annual Business Plan. This same form, showing the approved works, will also be placed inside each released contract as an integral part of the legal contract documentation.

The form is called the Maintenance Works Plan.

TREATMENT SELECTION RULES

General

The Road Asset Management System will require that all maintenance, no matter how small or ordinary, will be targeted and most importantly, qualified.

This will ensure that maintenance funds are not misdirected in repairs or interventions that are ambitious and expensive, later to be destroyed or superceded by an alternate or more imposing programme that comes along, on the same road link and within a relatively short time.

The Programme Designer will therefore advise the Client (annually) what treatment rules should apply to keep the whole RAM System homogenous and complimentary to the more major investment programmes.

The starting point for the Treatment Rule Selection process is the periodic programme of structural and functional overlays that are the result of applying whichever modeling maintenance modeling system is adopted.

The proposed maintenance categories listed go from simple safety measures (I) to localized reconstruction (VIII). It is worth pointing out that these categories indicate the expenditure of budgets for routine maintenance works. Where the category is localized reconstruction, it is intended to be very localized. No more than half carriageway for a distance of 20-30 meters for example.

Maintenance funding is always released under tight financial conditions and has to be utilized on a wide scale. It cannot be used for road reconstruction on a large scale.

Maintaining Standards of Serviceability

1. Pavement Rules

a) Materials to Specifications and Methods of Working

Repairs to any part of the constructed road must be made in the same material (or material of a better specification) as the original 'as constructed' road. The work also must be carried out according to the accepted conditions of contract and work methods. E.g. pavements with Asphalt Concrete wearing and Base courses must be repaired with the same materials (asphaltic concrete) at any site where material has been lost or has failed in potholes/patches and has to be cut out and replaced.

Surfaced shoulders must be repaired in prepared areas with SST, DST or TST to comply with original construction details.

[In cases of uncertainty small trial pits must be dug to determine construction details]

Where there is a requirement in the programme design for the application of seals to existing pavements, the selected treatment can then be surface dressing even on top

of existing Asphaltic Concrete. The Programme Designer will determine whether it is SST, DST or TST.

On Asphaltic Concrete roads all Surface Dressing must be mechanically applied.

The following detailed set of notes were prepared for the first application of the RAMS for preparing the routine maintenance contract in year 2000/2001.

ROUTINE MAINTENANCE CONTRACTS WITHIN THE ROAD ASSET MANAGEMENT SYSTEM

1.0 Background

When using computer modeling methods to produce annual maintenance programs there is always the assumption that routine maintenance is, or will be, carried out. This presupposes that all non pavement elements of the road will receive appropriate treatments and where there is no periodic maintenance intervention required on the pavement, this too will receive preventative measures in localized areas as required.

This is often not the case, and in almost all cases, usually on the grounds of inadequate funding, routine maintenance is deferred or disregarded.

The RAM System that has been adopted by the NHA provides a mechanism to ensure that there is a maintenance policy and works statement on each and every single kilometer of the road network.

This is very important. The existing practice of utilizing budgets that are allocated for ordinary or routine maintenance to carry out localized rehabilitation or reconstruction has proved extremely detrimental to keeping up general serviceability levels over the entire network. This process of non-maintenance spending has resulted in a viscous circle of "firefighting" as a reactive/repair system. All works being ordered or justified on an "emergency" basis.

Most highway agencies have limited budgets and there has to be some method of controlling and prioritizing work, even the so called ordinary maintenance.

The combination of fixed Treatment Rules, and a stated maintenance works policy will ensure that maintenance funds are used judiciously, and strictly in maintenance works, and therefore to the overall benefit of the network.

2.0 Principles behind the Treatment Rules

The Treatment Rules are a means of regulating where and how the most basic maintenance interventions are undertaken. Because there are stipulated limitations on the quantities that can be used in each of the routine maintenance activities, this compels the engineer to prioritize every works item. An area of pavement within a single kilometer may have cracked areas totaling 500 m² (The cracking of varying intensity) it is recognized however that within this area some of the cracking is very fine and not too serious. The Treatment Rules may apply a cut-off at 400 m² [depending on the level of intervention stated]. This therefore necessitates the engineer to find, in the various areas exhibiting cracking, the worst 400 m².

This is the first and most important level of a prioritized maintenance system. - It does not at present exist on the national highways.

Subsequent interventions the following year can then address the remaining cracked areas but again on a priority basis per each kilometer.

None of the leading for road management computer models prioritizes ordinary maintenance activities and this is where the problem of road conservation begins. **Prioritizing all conservation activities, including simple but necessary ordinary interventions, underpins and guarantees that the scheduled more major periodic maintenance interventions (as forecast by modeling tools) are fully optimized.**

This process of applying the Rules as they are designed and stipulated does however create certain difficulties. The following list identifies some of those difficulties.

- (i) The process of examining and carrying out appropriate works on every kilometer and according to the contract schedule, requires dedicated application by those responsible for planning and implementing the program.
- (ii) By carrying out only true routine maintenance, as per normally accepted definitions of such works, instead of working at sites that are requiring reconstruction, can upset the public's perception of what they understand is a maintenance system (based upon what they have seen in the past). It is always difficult to carry out important conservation work alongside or adjoining sections that are completely destroyed. There must be a parallel program of recon/rehab on the destroyed sections in order to offset the public fears.
- (iii) To reverse completely 180^o the "firefighting" practices that exist will require a major commitment by the road agency and all its operatives.
- (iv) The stipulation in the Treatment Rule that works intended at one location cannot be changed in either type or form or to a different location, requires strict discipline to ensure compliance. [It is however a crucial part of the Treatment Rules if there is to be a sound routine maintenance function on each kilometer].

SELECTION OF THE TREATMENT RULES

Within the RAMS selection process to determine the appropriate Treatment Rule - for what is normally considered routine maintenance - is a result of the overall computerized modeling process.

This is a major step forward towards regularizing the process of investing routine maintenance funding in the most economical manner.

By this systematic approach, the choice of what type of conservation (ordinary maintenance) investment and how much that investment should be, is closely allied to the forecasts produced by the model for the interventions of periodic, rehabilitation, or reconstruction.

The Treatment Rules as applied to routine or ordinary maintenance activities are first and foremost ensuring that only routine or ordinary works are undertaken, to appropriate levels and then only from the budgets specially allocated for this purpose.

Secondary, the Rules also ensure that even the works that are ordinary in nature are also a key part of the overall considerations of economic benefit.

The first Guideline Sheet **A** shows the eight levels of intervention that are, from the point of road conservation, considered to be the works tools available to the maintenance engineer. In the context of maintenance, the categories VII & VIII i.e., minor rehabilitation and localized reconstruction respectively, are, as the description on the form implies, only to be used in very short sections and only where a periodic or more major program of works is not stipulated by the model.

It is perhaps best to describe some of the measures in the conservation program as "reactive" maintenance, rather than routine. They are all however, intended to hold the overall serviceability levels as constant as possible over homogeneous road links.

The overall objective of the exercise therefore is to fix the appropriate Treatment Rule for routine maintenance activities according to the forecasted intervention from the HDM model and thereby to make optimum and justifiable use of even the most basic of maintenance budgets.

The basic principles behind this linkage of routine maintenance works programs directly to the HDM interventions for periodic maintenance forecasts, is to ensure that road conservation is concentrated, where the road is in reasonable condition. These are the sections where the model forecasts a periodic intervention some 3- - 4 years in the future, and the asset value is so high it must be conserved and protected. This is the reverse of the current tendency, where maintenance money is spent on road links that have predominately already failed and require a rehabilitation or reconstruction program right away or in the following year.

In this latter case, under the terms of the Treatment Rules the maintenance engineer can only justify expenditures from his routine maintenance budget for works directly related to basic safety measures.

THE TREATMENT RULES - USING THE GUIDELINES

(I) **Guideline Form** **A**

This form is used in the following way:

From the HDM/PRMS model determine what is the forecasted intervention in terms of periodic treatment and when that periodic treatment is recommended to take place.

The periodic treatments are numbered 1 - 16 and vary from simple seals to Improvement/Reconstruction Scenarios respectively. [See list attached].

The model also forecasts the intervention periods (between 1 to 6 years) when the periodic treatment should take place.

The HDM forecast will indicate which Treatment Rule 1 - VIII is the maximum that can be considered to be undertaken **under the routine maintenance budget allocation**.

e.g. A road requiring a functional overlay in 3 - 4 years time can justify conservation works up to Category V. [Major Conservation].

The same road requiring this functional overlay in 1 - 2 years time could only justify works in the Category III [Low Cost conservation].

If however this road requires improvement/reconstruction in 5/6 years time the maximum application of intervention from the routine/reactive maintenance budget is Category II [Safety + Minor Social Benefits].

The guiding principle is to conserve , with commensurate investments those good road links or sections having an anticipated life of several years and then only requiring sealing or functional overlays at the end of that time, to extend the anticipated life for a further number of years, by attending to the one or two localized spots that detract from the overall condition of the link.

The objective is not to waste constrained ordinary maintenance budgets on major repairs/rehabilitation on long stretches or links that overall are in such a deteriorated condition that they are ready for replacement anyway.

(ii) **Guideline Form** **B**

This form indicates the maximum values/limitations of use of the 18 items that are included in the routine maintenance contract Bill of Quantities.

Clearly some items should not be limited; clearing blocked or silted drainage for example. A similar approach has to be the repair of open potholes. They must be repaired.

Where the limitations are important is in the case of pavements showing overall signs of deterioration such as cracking. Here the routine maintenance intervention has to be limited. If a road is predominately cracked throughout its surface it clearly requires (and the HDM/PRMS modeling will show) a periodic seal or functional overlay.

The maintenance engineer however has to use his experience and skill to invest just enough of the routine maintenance funding available to him to keep serviceability levels at least constant over the link or section and within acceptable safety limits.

Consequently he uses his judgment to repair the areas of defect that he considers the "worst areas" of the overall areas showing deterioration, only up to the max^m value provided under the appropriate Treatment Rule Category.

This form gives those maximum values according to the Category that has been determined by using **A** the Model Form.

(iii) **Guideline Form** **C**

In fixing the Treatment Rules according to the forecasts of the model, we are using a standard road with certain widths and a certain functional level.

This gives a standard or "benchmark" level for placing economic benefit even to routine and reactive maintenance. There is however the requirement to "**mode**" this benchmark more finely to suit the different functional classifications within the network and even final tuning - either up or down - to reflect the Level of Use i.e., traffic volumes.

Form **C** has a matrix of the values for the Treatment Categories up to Medium Cost conservation M.C.C. and shows the limitations of use of quantities according to the Bill of Quantities item.

It also indicates the multiplying factors available for the maintenance engineer to "fine tune" the economic benefits according to the particular road link he is considering and its functional value, if it does not fit to the standard classification.

ANNUAL ROAD CONSERVATION PROGRAM

TREATMENT RULES



LEVEL OF ROUTINE/REACTIVE MAINTENANCE INTERVENTION THAT IS JUSTIFIED ACCORDING TO PERIODIC MAINTENANCE ANTICIPATED WORKS AND TIMING

Cat. Ref:	Maintenance Treatment Rule Function/Category	Timing of HDM/MMS Periodic Interventions (years)				Ref. No.	Type of HDM/MMS Intervention
		1-2	3-4	5-6	> 6		
I	Safety Measures Only	I	I	I	I	9-16	Improvement/Reconstruction - Asphalt
		I	I	I	I		Reconstruction - Surface Treatment
		I	I	I	I	5-8	Structural Overlays
		I	I	I	I	3-4	Functional Overlays
		I	I	I	I	1-2	Sealing
II	Safety and Minor Social Benefits	I Only		II	II	9-16	Improvement/Reconstruction - Asphalt
		II		II	II		Reconstruction - Surface Treatment
		II	II	II	II	5-8	Structural Overlays
		II	II	II	II	3-4	Functional Overlays
III	Low Cost Conservation	MIN ^m I		III	III	9-16	Improvement/Reconstruction - Asphalt
		MAX ^m II		III	III		Reconstruction - Surface Treatment
		III	III	III	III	5-8	Structural Overlays
		III	III	III	III	3-4	Functional Overlays
		III	III	III	III	1-2	Sealing
IV	Medium Cost Conservation	MIN ^m I		IV	IV	9-16	Improvement/Reconstruction - Asphalt
		MAX ^m III		IV	IV		Reconstruction - Surface Treatment
		IV	IV	IV	IV	5-8	Structural Overlays
		IV	IV	IV	IV	3-4	Functional Overlays
		IV	IV	IV	IV	1-2	Sealing
V	Major Conservation	MIN ^m I		V	V	9-16	Improvement/Reconstruction - Asphalt
		MAX ^m IV		V	V		Reconstruction - Surface Treatment
		V	V	V	V	5-8	Structural Overlays
		V	V	V	V	3-4	Functional Overlays
		V	V	V	V	1-2	Sealing
VI	Minor Restoration	MIN ^m I		VI	VI	9-16	Improvement/Reconstruction - Asphalt
		MAX ^m V		VI	VI		Reconstruction - Surface Treatment
		VI	VI	VI	VI	5-8	Structural Overlays
		VI	VI	VI	VI	3-4	Functional Overlays
		VI	VI	VI	VI	1-2	Sealing
VII	Minor Rehabilitation	MIN ^m I		VII	VII	9-16	Improvement/Reconstruction - Asphalt
		MAX ^m VI		VII	VII		Reconstruction - Surface Treatment
		VII	VII	VII	VII	5-8	Structural Overlays
		VII	VII	VII	VII	3-4	Functional Overlays
		VII	VII	VII	VII	1-2	Sealing
VIII	Localised Reconstructions	MIN ^m I		VIII	VIII	9-16	Improvement/Reconstruction - Asphalt
		MAX ^m VII		VIII	VIII		Reconstruction - Surface Treatment
		VIII	VIII	VIII	VIII	5-8	Structural Overlays
		VIII	VIII	VIII	VIII	3-4	Functional Overlays
		VIII	VIII	VIII	1-2	Sealing	

ANNUAL ROAD CONSERVATION PROGRAM

TREATMENT RULES

B

**THE APPROPRIATE ACTIONS AND LIMITS ON THE WORKS ITEMS - ACCORDING TO THE
JUSTIFIED INVESTMENT CATEGORY**

Treatment Rule	Description of Defects	Details of Treatment		
		Treatment Action	Relevant Bill Item No.	Limitation of Use
I Safety Measures (SM)	❶ Flooding caused by blocked culverts/ditches.	Clean drainage	2.1, 2.2, 2.3, 2.4, 2.5	None
	❷ Excessive silt/rubbish blocking channels on bridges/against kerbs.	Clean channel	2.6	None
	❸ Dangerously uneven/eroded shoulders	Grade shoulders	2.7	10 hrs/25k
	❹ Visibility reduced by overgrown vegetation.	Cut vegetation	2.8	500 m ² /25k
	❺ Open Potholes	Repair potholes	3.1, 3.2, 3.4	None
	❻ Pavement Edge Break > 150 mm.	Patch edge of pavement	3.1, 3.2, 3.3, 3.4	100 m ² /km
	❼ Edge Step between Pavement/Shoulder > 75 mm.	Add shoulder material	3.6	15 m ³ /km
	❽ Excessive and dense cracking with loose and fragmenting pavement material.	Cut out and patch	3.1, 3.2, 3.3, 3.4, 3.5	crack > 5 m/m ² + < 100 m ² /km
	❾ Excessive Rutting, liable to seriously effect the handling of small vehicles.	Fill in rut temporarily	3.1, 3.2	Rut > 50 mm < 250 m/km
	❿ Damage to Headwalls/Bridge Parapets/Vehicle Barriers.	Make local repairs	3.7, 3.8	None
	❶ Highway Structures/Furniture obscured by mud or dirt.	Clean + repaint	3.9, 3.10	None
II Safety + Minor Social Benefits (S + MSB)	As in I plus:			
	❶ Gravel/Earth shoulders that are rough and depressed or high in localized patches.	Provide + lay suitable material	3.6	< 30 m ³ /km
	❷ Pavement that is badly cracked and is becoming rough/bumpy.	Surface treatment	3.3, 3.4	< 200 m ² /km
III Low Cost Conservation (LCC)	As I & II plus:			
	❶ Deep localized depressions in the pavement associated with cracked areas.	Excav. To solid base replace with suitable material	3.1, 3.2, 3.4, 3.5	< 400 m ² /km
	❷ Shoulders that have lost their original shape and are loose and generally below the pavement edge.	Provide + lay gran. material in layers on prepared base	3.6	< 50 m ³ /km
	❸ Cracked or spalled concrete parapets/headwalls.	Break out and replace	3.8	< 10 m ³ /km
	❹ Drainage structures with broken aprons, wingwalls, outlet channels.	Repair as necessary	3.7, 3.8	< 10 m ³ /km
IV Medium Cost Conservation (MCC)	As I, II and III plus:			
	❶ Poor shape to shoulders preventing water run-off.	Grade to line + level Import Material	See Bill No. 4,5 & 6	< 1000 m ² /km
	❷ Loss of camber on road. Drainage of surface water poor.	Restore shape using Asphaltic material		< 1000 m ² /km
❸ Areas of minor cracking with localized deflection readings that are high or excessive.	Cut out WC + BC, relay	< 1000 m ² /km		
V Major Conservation (MC) VIII Localized Re-constructions (LR)	As I - IV plus:			
	❶ Shoulder material and construction layers inadequate for heavy vehicles.	Excav. All material and replace	Construction	depth < 200 mm < 2000 m ² /km
	❷ Parts of the pavement have reached a point of early life cycle failure. Probably have hairline cracking combined with rutting over longer lengths.	Excavate excessively rutted sections + patch + surface dress.	Items	< 2000 m ² /km
	❸ Embankments and slopes are eroded and have lost their original shape.	regrade and bench. Import and compact selected material		< 200 m ³ /km

ANNUAL ROAD CONSERVATION PROGRAM

TREATMENT RULES

C

**APPLICATION OF MULTIPLYING FACTORS FOR DIFFERENT ROAD CLASS/TRAFFIC PARAMETERS TO
DETERMINE MAXIMUM LIMITS OF WORK ITEMS**

ITEM	DESCRIPTION	UNITS	PROVISIONS				MULTIPLYING FACTORS								PPRMS/HDM							
			SAFETY	SAFETY + SB	LCC	MCC	ROAD CLASSIFICATION				TRAFFIC VOLUMES				PERIODIC MAINTENANCE INTERVENTION YEARS							
							AREA / LENGTH / VOLUME / TIME				1	2	3	4	4	3	2	1	1-2	3-4	5-6	>6
							Motorway (6 Lanes) + Primary Highways (4 lanes)	Secondary Highways (2 lanes) + Provincial Highways	Minor Collector Roads (2 lanes) + Secondary Roads	Feeder Roads (single lane) + Access and Farm to Market Roads	9000 and above	5000 to 8999	1000 to 4999	Less than 1000								
2.1	CLEAN EXISTING SIDE DRAIN EXCAV.< 100mm	M	✓	✓	✓	✓	1.2	1.0	0.8	0.6	1.2	1.0	0.8	0.6								
2.2	CLEAN EXISTING SIDE DRAIN EXCAV.> 100mm	M ²	✓	✓	✓	✓																
2.3	CLEAN EXISTING PIPE CULVERT EXCAV.	M	✓	✓	✓	✓																
2.4	CLEAN EXISTING BOX CULVERT EXCAV.< 100mm	M	✓	✓	✓	✓																
2.5	CLEAN EXISTING BOX CULVERT EXCAV.> 100mm	M ²	✓	✓	✓	✓																
2.6	SWEEP + CLEAN HIGHWAY STRUCTURES	M ²	✓	✓	✓	✓																
2.7	GRADING OF SHOULDERS AND EMBANKMENTS	Hrs.	10/25 K	20/25 K	✓	✓																
2.8	CUTTING,GRUBBING OUT OF ROADSIDE VEGETATION.	M ²	500/25K	500/25K	✓	✓																
2.9																						
2.10																						
3.1	ASPHALT CONCRETE PATCHES	M ²	100	200	400	800	1.2	1.0	0.8	0.6	1.2	1.0	0.8	0.6	0.6	0.8	1.0	1.2				
3.2	ROTARY MACHINE BITMAC TO PREPARED POTHOLES	M ²	100	200	400	800																
3.3	HOT BITUMEN SURFACE DRESSING DOUBLE COAT	M ²	100	200	400	800																
3.4	HOT BITUMEN SURFACE DRESSING TRIPLE COAT	M ²	100	200	400	800																
3.5	WATERBOUND MACADAM FOR ROAD BASE COURSE	M ²	5 m ²	10 m ²	15 m ²	20 m ²																
3.6	GRAVEL/GRANULAR TO SHOULDERS 150mm	M ²	15/K	30/K	60/K	120																
3.7	REPAIRS TO BRICK / STONE MASONRY 1:3 MORTAR	M ²	10 m ²	15 m ²	20 m ²	✓																
3.8	REPAIRS TO CONCRETE STRUCTURES	M ²	10 m ²	15 m ²	20 m ²	✓																
3.9	WHITE PAINT TO HIGHWAY STRUCTURES	M ²	✓	✓	✓	✓																
3.10	CLEAN & REPAINT FIGURE Km. POSTS/TRAFFIC SIGNS	No	✓	✓	✓	✓																

THE APPROVED DESIGN FOR THE VARIOUS WORKS PROGRAMMES

Once the network analysis is complete and the application of the various models has taken place, the Programme Designer will then be in a position to advise the Client the main details of his findings.

He will present the findings as recommendations covering the three main programmes as contained in the Strategic Business Plan.

If the first two programmes – Development Investment and Medium Term Maintenance Investment – have been previously fixed and are underway, the programme design will focus on the Annual Road Conservation Programme.

The application of provisional budgets will be used at this stage to prioritize the works indicated for the final conservation programme. A back-up list of works can be held in readiness in case extra funding is made available.

Once the Programme Design has been prepared and approved it is then passed to the Service Provider to prepare his corresponding works programme.

So that the Service Provider is fully aware of what the approved programme entails, the Road Details are given on the works form that is forwarded to the Service provider (see attached Fig.).

These clearly not only show items like class of road and pavement type but also the Asset Value/km and the intended overlays/treatments and the year in which it is intended that these treatments are to take place. The combination of these two parameters then determines the Treatment Rule that will apply to the section. [See separate Guideline Notes for Treatment Rules]

Figure 6-1

PROGRAMME DESIGNER ROAD CONSERVATION PROGRAMME

MAINTENANCE WORKS PLAN		YEAR _____ ROUTE NO. N-5	PPIU	PROVINCE.....			
	Link <u>Lahore</u> to <u>Rawalpindi - North Bound</u>	DISTRICT					
	Km <u>1425</u> to <u>1450</u>	Sheet of					
LOCATOR	1425	1430	1435	1440	1445	1450	KEY
TOWN ● VILLAGE ○ (name)							
JUNCTION ┘ (name)							

ROAD DETAILS							
ROAD CLASS	II	II	II	II	II	II	
PAVEMENT TYPE	PA	PA	PA	PA	PA	PA	
ASSET VALUE /NPV/Km.	2.8	2.8	4.2	4.2	4.2	4.2	
HDM INTERVENTION	04-5	04-5	04-3	04-3	04-3	04-3	
TREATMENT RULE	VII-LRC	VII-LRC	V-MC	V-MC	V-MC	V-MC	

ROAD CONDITIONS							
ENVIRON. RATING							
CONDITION RATING							

VERIFICATION PROCEDURES							
SURVEY LEVEL							

TREATMENT SELECTION RULES							
PERIODIC							
ROUTINE							
OTHERS							

Programme Designer Sign. _____
Name _____
Date _____
APPROVED: Member (Planning) _____

MAINTENANCE PROGRAMME APPROVALS

APPROVED WORKS

ITEM	DESCRIPTION	1425	1430	1435	1440	1445	1450	TOTAL	UNIT			
24	Clean Bx Oil v ert <100m m				60	30		60	200	M		
26	Clean Highway Structures			800	1000	1000	600	1000	200	M ²		
31	Asphalt Concrete - Patches				1				10	M ³		
32	Bitm acadm - Patches					4				4	M ³	
33	Hot bit. Surf Dress Double C.				100	100		60		260	M ²	
35	WBM for Road Base Course								3	3	M ³	
38	Repairs to Concrete Structures								2	2	M ³	
39	Paint to Highway Structures					30		30		60	M ²	
310	Repaint Fig Km . Posts/ Trf Signs			1	1	1	1	1	1	1	10	M ²

Contract Type	PC - I	Limits: Km..... To	APPROVED By C&S
Serial No.....	No.....	Eng. Est. Limit: Rs.....	Chairman/Member (H'way) Sign

Figure 6-2

SERVICE PROVIDER	ROAD CONSERVATION PROGRAMME
-------------------------	------------------------------------

ESTIMATED QUANTITIES	ROUTE NO.	N-5	Contract Type	ROUTINE
Link <u>Lahore</u> to <u>Rawalpindi - North Bound</u>			Year	19 /
PROPOSED WORKS	Km <u>1425</u> to <u>1450</u> Sheet _____ of _____		Prepared By:	_____

ITEM	DESCRIPTION	1425	1430	KM	1435	KM	1440	KM	1445	KM	1450	TOTAL	UNIT
2.1	CLEAN EXISTING SIDE DRAIN EXCAV.<100mm												M
2.2	CLEAN EXISTING SIDE DRAIN EXCAV.>100mm												M ³
2.3	CLEAN EXISTING PIPE CULVERT EXCAV.												M
2.4	CLEAN EXISTING BOX CULVERT EXCAV.<100mm												M
2.5	CLEAN EXISTING BOX CULVERT EXCAV.>100mm												M ³
2.6	SWEEP + CLEAN HIGHWAY STRUCTURES												M ²
2.7	GRADING OF SHOULDERS AND EMBANKMENTS												Hrs.
2.8	CUTTING,GRUBBING OUT OF ROADSIDE VEGETATION.												M ²
3.1	ASPHALT CONCRETE PATCHES												M ³
3.2	BITMACADAM PATCHES												M ³
3.3	HOT BITUMEN SURFACE DRESSING DOUBLE COAT												M ²
3.4	HOT BITUMEN SURFACE DRESSING TRIPLE COAT												M ²
3.5	WATERBOUND MACADAM FOR ROAD BASE COURSE												M ³
3.6	GRAVEL/GRANULAR TO SHOULDERS 150mm												M ³
3.7	REPAIRS TO BRICK / STONE MASONRY 1:3 MORTAR												M ³
3.8	REPAIRS TO CONCRETE STRUCTURES												M ³
3.9	WHITE PAINT TO HIGHWAY STRUCTURES												M ²
3.10	CLEAN AND REPAINT FIGURE Km.POSTS/TRAFFIC SIGNS												No.
3.11	REPAIRS TO ANGLE IRON BRIDGE PARAPETS												Kg.

ROAD DETAILS

ROAD CLASS	II	II	II	II	II	
PAVEMENT TYPE	PA	PA	PA	PA	PA	
ASSET VALUE /NPV/Km.	2.8	2.8 4.2	4.2	4.2	4.2	
HDM INTERVENTION	04-5	04-5 04-3	04-3	04-3	04-3	
TREATMENT RULE	VII-LRC	VII-LRC V-MC	V-MC	V-MC	V-MC	

LOCATOR

TOWN ● VILLAGE O ()															(name)
JUNCTION ⊥ ()															(name)

SKETCHES AND MAPPING

Project Manager Sign. [General Manager/Engineer]	Prepared by Sign.	Name	Date
---	-------------------	------	------

THE MAINTENANCE WORKS PLAN

The Maintenance Works Plan will be used to prepare all works that are included in the Annual Road Conservation Investment Programme.

The first five sets of boxes in Figure 7-1 – Locator to Treatment Selection Rules – will be completed by the Programme Designer based upon the information included in the Highway Databank, and the application of the HDM IV model. The Model will indicate the periodic and more major interventions that are necessary.

The Form in Figure 6-2, with all this relevant information included, will be forwarded to the Service Provider. The Service Provider could be a Private Sector or Public Sector organization. A blank form is given in Figure 7-1.

In the case of NHA, and where there are no private concessions, the Service Provider will be the Member (Highways) assisted by his Regional General Management organizations.

The Regional General Managers will be the Programme Managers as named in the Standard Contract Documents.

With due regard to the Guidelines on Asset Management Criteria and Treatment Selection Rules, the NHA site offices which are responsible for the length of National Highway shown on the Maintenance Works Plan, will indicate their proposals for the works on the section indicated and in accordance with the programme design.

This section is called the appropriate Maintenance Works Application. This will be duly signed by the responsible persons as indicated.

The Works Application will then be checked against the Guidelines issued to ensure it complies with the overall Annual Business Plan. Any required amendments will be indicated, but before finalization the Programme Designer may carry out a further verification survey on the link in question to ensure that all recorded details are correct and the solutions are the best or optimal.

ESTIMATED QUANTITIES Link _____ to _____ Km _____ to _____ Sheet _____ of _____	ROUTE NO.	N-5	Contract Type	ROUTINE
			Year	19 /
			Prepared By:	_____

ITEM	DESCRIPTION	KM		KM		KM		KM		TOTAL	UNIT
2.1	CLEAN EXISTING SIDE DRAIN EXCAV.<100mm										M
2.2	CLEAN EXISTING SIDE DRAIN EXCAV.>100mm										M ³
2.3	CLEAN EXISTING PIPE CULVERT EXCAV.										M
2.4	CLEAN EXISTING BOX CULVERT EXCAV.<100mm										M
2.5	CLEAN EXISTING BOX CULVERT EXCAV.>100mm										M ³
2.6	SWEEP + CLEAN HIGHWAY STRUCTURES										M ²
2.7	GRADING OF SHOULDERS AND EMBANKMENTS										Hrs.
2.8	CUTTING,GRUBBING OUT OF ROADSIDE VEGETATION.										M ²
3.1	ASPHALT CONCRETE PATCHES										M ³
3.2	BITMACADAM PATCHES										M ³
3.3	HOT BITUMEN SURFACE DRESSING DOUBLE COAT										M ²
3.4	HOT BITUMEN SURFACE DRESSING TRIPLE COAT										M ²
3.5	WATERBOUND MACADAM FOR ROAD BASE COURSE										M ³
3.6	GRAVEL/GRANULAR TO SHOULDERS 150mm										M ³
3.7	REPAIRS TO BRICK / STONE MASONRY 1:3 MORTAR										M ³
3.8	REPAIRS TO CONCRETE STRUCTURES										M ³
3.9	WHITE PAINT TO HIGHWAY STRUCTURES										M ²
3.10	CLEAN AND REPAINT FIGURE Km.POSTS/TRAFFIC SIGNS										No.
3.11	REPAIRS TO ANGLE IRON BRIDGE PARAPETS										Kg.

ROAD DETAILS

ROAD CLASS	II	II	II	II	II	II
PAVEMENT TYPE	BM	BM	BM	BM	PA/PG	PA/PG
ASSET VALUE /NPV/Km.	3.62	3.62	3.62	3.62	5.15	5.15
HDM INTERVENTION	04-3	04-3	04-3	04-3	05-3	05-3
TREATMENT RULE	IV MCC	IV MCC	IV MCC	IV MCC	III LCC	III LCC

LOCATOR

TOWN ● VILLAGE O ()											(name)
JUNCTION † ()											(name)

SKETCHES AND MAPPING

_____ Project Manager Sign. [General Manager/Engineer]	_____ Prepared by Sign.	_____ Name	_____ Date
--	----------------------------	---------------	---------------

THE APPROVED WORKS PROGRAMME

The road Asset Management System having determined what are the priorities and having passed them through the programme approvals procedures, will incorporate the final items and quantities in the Approved Works Programme. See attached Figure 8-1.

This document will be part of the Annual Business Plan and most importantly it will be included as part of the actual contract document. It will appear as the final page of the Bills of Quantities.

The person signing the contract on behalf of the contractor, will also sign the form in the top right hand box.

The form will be signed by the Service Provider in his capacity as the Programme Manager.

Some contracts may be let as smaller sub-contracts, although included in a larger programme that is covered by a PC-I. The Programme Manager will complete the relevant details.

There are two separate boxes for signature depending upon whether the Service Provider is from a private sector concession, or is part of the Client's field organization.

Works and Locations

The approved works will be shown under the appropriate Bill of Quantities item number with the locations (within 1 kilometer boxes) where the works are to be carried out clearly indicated. The Bills of Quantities will be the total summation of these items.

The contractor can use the second part of the form to keep a record of how he dealt with the works through the work scheduling system process. He can also employ the utilization section as a preplanning chart.

Where items and quantities were authorized from the Contract Capital Reserve (CCR) by the Project Manager, the utilization will be shown in the bottom section.

Figure 8-1

PROGRAMME DESIGNER **ROAD CONSERVATION PROGRAMME**

MAINTENANCE WORKS PLAN	YEAR _____	ROUTE NO. N-5	PROVINCE.....
	Link <u>Lahore</u> to <u>Rawalpindi - North Bound</u>	PPIU	DISTRICT
	Km <u>1500</u> to <u>1525</u> Sheet of		NHA OFFICE

LOCATOR	1500	1505	KM	1510	KM	1515	KM	1520	KM	1525	KEY
TOWN ● VILLAGE ○ (name)											
JUNCTION ⊥ (name)											

ROAD DETAILS						
ROAD CLASS	II	II	II	II	II	
PAVEMENT TYPE	PA/PG	PA	PA	PA	PA	PA/PG
ASSET VALUE /NPV/Km.	5.36	5.36	5.36	5.36	5.36	3.66
HDM INTERVENTION	02-3	02-3	02-3	02-3	02-3	04-3
TREATMENT RULE	IV-MCC	IV-MCC	IV-MCC	IV-MCC	IV-MCC	V-MC

ROAD CONDITIONS											
ENVIRON. RATING											
CONDITION RATING											

VERIFICATION PROCEDURES											
SURVEY LEVEL											

TREATMENT SELECTION RULES											
PERIODIC											
ROUTINE											
OTHERS											

Programme Designer Sign. _____
Name _____
Date _____
APPROVED: Member (Planning) _____

MAINTENANCE PROGRAMME APPROVALS

APPROVED WORKS																								
ITEM	DESCRIPTION	1500		1505		KM		1510		KM		1515		KM		1520		KM		1525		TOTAL	UNIT	
21	Clean Side Drain <100m m	200	800	800	200									500	1000			300	800			4600	M	
24	Clean Box Culvert <100m m	60		20					25		30			60	50	60	40	40		60			445	M
26	Clean Highway Structures			200			200			200				200				200					1000	M ²
31	Asphalt Concrete - Patches						6										3						9	M ³
32	Bitm acadm - Patches		200																				200	M ³
33	Hot bit. Surf Dress. Double C.			10			50																60	M ²
35	WBM for Road Base Course						2																2	M ³
37	Rep. to B/ S Mas. 13 Mtr														1								1	M ³
38	Rep. to Conc Structures														2								2	M ³
39	Paint to Hwy Structures			30																			30	M ²
310	Repaint Fig Km . Posts/ Trf Sgns			1			1			1													3	M ²

Contract Type	PC - I	Limits: Km..... To	APPROVED By C&S
Serial No.....	No.....	Eng. Est. Limit: Rs.....	Chairman/Member (H'way) Sign

THE RELEASE AND DURATION OF ROAD CONSERVATION CONTRACTS

The RAMS will prioritize the programme of conservation contracts, not only in terms of intensity and complexity of works, but also in terms of the timings of contract releases.

This phased preparation and release will be part of the Annual Business Plan and correspond to funding streams and the NHA's cash flow statements.

There will however be due regard paid to the key input of seasons and seasonal works activities. Part of the parameters used by the Programme Designer will be climatic and environmental considerations. See Maintenance Planning Chart Figure 9-1.

The Programme Design for the maintenance activities will be finalized in conjunction with the Finance Department of NHA and a supporting funding plan co-produced.

It will not be necessary that all contracts are let at the same time.

The priorities, as based on technical and economical grounds, will determine the works programmes and timings for release of contracts.

The Contract Releases and generally the *maximum* duration of contracts will be on 3 monthly time cycles.

As all works are to be targeted and relevant to the exhibited and measurable defects or conditionalities, all contracts will be of a duration just sufficient to complete the works, some contracts may be prepared for only two or three items and for a duration of days or weeks rather than months.

The guiding principle for determining the prioritized programme will be Asset Management and Customer Focus. This will prioritize the programme on the conservation of those road links with the highest constructed asset value that also carry the highest traffic volumes and consequently have the highest road user benefits.

With an anticipation of limited budgets for the immediate seasons works, some sections of the National network will inevitably have to come at the lower end of priorities. The interventions (works) on those sections will be of the lowest level of conservation and have to be qualified on safety and social parameters and conditionalities.

The Programme Design will include clear guidelines concerning what works can be undertaken and what cannot. These will be indicated on the Approved works form

The whole objective of the programme will be to extract the best value for money by qualification of all works-no matter how small or routine in nature-but at the same time keeping in mind some norms concerning social and/or environmental impact.

Figure 9-1

The Maintenance Planning Chart - (Annual)

Type of Prog.	Months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Annual Road Conservation Programme (ARCP)	Drainage Activities		■			■				■			
	Asphaltic Activities			■	■	■	■	■		■	■	■	
	Repairs to Structures		■	■	■	■	■	■	■	■	■	■	
	Painting and Cleaning		■	■	■	■	■			■	■	■	
	Miscellaneous (Traffic Eng.)	■	■	■	■	■	■	■	■	■	■	■	■

PERFORMANCE INDICATORS FOR THE SERVICE PROVIDER BASED UPON ROAD SERVICEABILITIES

Determination of Performance Indicators

Indicators for assessing the performance and results of the Service Providers outputs, are to be based upon procedure of 'before and after' measurements of the exhibited road defects. The 'before' settings will be arrived at during the annual network analysis process and then later reassessed after the Service Provider has completed a recognized programme of works.

The overlying need is to provide the best possible serviceability levels for the optimum amount of funding.

The process of stating optimum serviceability values therefore requires that the Client will have to specify which defects exhibited on the road he considers requires the most urgent or emphatic response.

The choice will be fairly straightforward in so much that these will be the defects that are the most damaging or disturbing as perceived by ordinary road users. E.g. potholes and rough or badly deformed road surfaces. These defects also produce high economic costs as well as the obvious negative social and political factors and this will qualify them even further.

An annual programme for assessing the conditions of the road network will be carried out by the Programme Designer. This will not however necessarily require that all the road links require a full defect survey. See separate Guideline Notes.

From the annual network analysis the existing conditions of the pavement will be measured. The conditionalities adopted for these assessments are those that are universally accepted as for pavement assessment programs and modeling procedures.

This process involves the evaluation of 11 pavement and road structure conditionalities in all. See Figure 3-1 in Guideline Notes No. 3.

There are four levels of defect severity on the form. These are indicated as a, b, c, and d.

The 'd' level of severity indicating the worst condition.

Representation of Performance Indicators

A special Form has been developed to show the representation of Performance Indicators. See attached form.

On this form the 11 road defect conditionalities from Figure 3-2 (Guideline Note No. 3) are shown and the four levels of severity also indicated.

Also shown is the breakdown of the section in terms of kilometers. Each small square represents 1 kilometer.

From the road condition surveys the value of each (a, b, c or d) is recorded. This is best represented by programming the computer to “shade” in the values.

The summation of all the shaded squares over a given section or link is the Primary Condition Value (PCV) – The total number of defect squares.

By aggregating the total number of shaded squares through a given length, the result is a ‘score’ or measure of overall defect severity. This is referred to as the Primary Condition Value (PCV) for that length or section for the particular defect specified.

The Client's maintenance management strategy will indicate which defects are seen to contribute the most to the overall sense of loss of serviceability and to give the appearance of poor maintenance management levels.

In making this judgment the Client will be guided and influenced by several key factors: economic, social, and political.

The economic factor will indicate the need for smoother roads and correspondingly low vehicle operating costs.

The social factor will reflect the need to provide safe travel for passengers and goods.

The political factors will require that the programme creates an overall feeling that the local road sector conditions are generally improving and importantly, that the public are noticing these improvements.

The maintenance management strategy will therefore accede to the wishes of the Client as to which defects he feels are the most critical and which are of lesser priority. The Programme Designer will fix the value of the Defect Factor (DF) each year for each individual defect.

This process is also required so that Government can establish overall the main focus points of its road conservation policies and strategies. These strategies continuously adjusting as the Maintenance Management System produces the hoped for results and the network improves.

The Defect Factor (DF)

The Programme Designer has a menu of defect and environmental conditionalities at his disposal.

The menu page at Figure 3-1 shows the 11 conditionalities of defects that are generally recognized internationally as indicators of a roads overall condition or level of serviceability.

They are not however all equal in importance. In fact their individual importance can be influenced by their differing combinations. E.g. A severe Edge Step is arguably more important than Centerline Cracking (this is especially the case when it is combined with a narrow road).

Potholes are far more dangerous and damaging than ravelling.

Consequently, based upon the general condition of the road network the Programme Designer will recommend to the Client the order of importance of the various defects in terms of the speed of response or the intensity of inputs that the Service Provider should adopt in dealing with those defects. The repair of Potholes invariably being the highest priority.

However, if the operational side of maintenance management can react quickly to the requirements of the designed programme, then the priorities of defect may change from season to season.

Current Serviceability Value (CSV)

This is the “enhanced” or “value added” condition of the pavement. A combination of defect severity and the necessary response level required. It is arrived at by taking the Primary Condition Value and multiplying it by the Defect Factor.

Because it is an enhanced value through multiplication, it can also be reduced more decisively by timely interventions and actions, than if the Defect Factor is minor.

$$\text{CSV} = \text{PCV} \times \text{Defect Factor}$$

The next process that the Client must undertake is to fix the serviceability levels that he requires for the network and he expects the Service Provider to obtain through his works programme.

It would however be unreasonable, given so many constraints, for the Service Provider to reduce the Current Serviceability Value to zero in one or even two seasons of works programs.

For this reason the Client’s maintenance management strategy will qualify the level of serviceability value that he desires the Service Provider to attain during the duration of his programme.

Target Serviceability Values (TSV)

The best and simplest way of doing this is to fix a percentage of the CSV that he regards as a target value for assessing performance.

This target value however cannot be the same for all roads. It must be related to the road category. Each road category with have an indices.

The Road Category Index RCI


Motorways (6 – Lane) Road Category I	4.0
Primary Highway (4 – Lane) Road Category II	3.5
Secondary Highways Road Category III	3.0
Road Category IV	2.5
Road Category V	2.0

The Target Serviceability Value (T S V) will be calculated by :

$$\text{TSV} = \frac{\text{Current Serviceability Value}}{\text{Road Category Index.}}$$

(See Figure 10-1)

Figure 10-1

PERFORMANCE INDICATORS - PAVEMENT SERVICEABILITIES													
 RAMD								Road No.					
								From:..... To:.....					
								Km:..... To:.....					
LOCATOR				KM		KM		KM	Date:				
TOWN ● (name)									Road Category				
VILLAGE ○ (name)									Serviceability Index				
JUNCTION ⊢(name)													
ROAD DEFECT SEVERITY								PCV	x DF	= CSV	Target	Achieved	
F(i)	Edge Erosion	d											
		c											
		b											
		a											
F(ii)	Edge Step	d											
		c											
		b											
		a											
G(i)	Wheel Track Rutting	d											
		c											
		b											
		a											
G(ii)	Wheel Track Rutting L.	d											
		c											
		b											
		a											
G(iii)	Wheel Track Cracking	d											
		c											
		b											
		a											
G(iv)	Wheel Track Cracking L.	d											
		c											
		b											
		a											
G(v)	Centreline Cracking	d											
		c											
		b											
		a											
G(vi)	Cracking Width (G(iii))	d											
		c											
		b											
		a											
G(vii)	Ravelling	d											
		c											
		b											
		a											
G(viii)	Potholes	d											
		c											
		b											
		a											
H	Roughness	d											
		c											
		b											
		a											
								Road Cat.	Serviceability Ind.				
PCV = Primary Condition Value ~ Total number of squares shaded as defective.								I. Motorway	4.0				
x DF = Multiplied by the Defect Factor ~ A Rating of the importance of the particular defect.								II. Primary Highway	3.5				
= CSV = Current Serviceability Value (PCV x DF).								III. Secondary Highway	3.0				
Target = CSV divided by the Serviceability Index of the particular road category.								IV. Minor Collector	2.5				
								V. Feeder Road	2.0				

TERMINOLOGY USED IN ROAD NETWORKS MANAGEMENT IN A MODERN COMMERCIAL ENVIRONMENT – WITH OUTLINE DEFINITIONS.**Business Plan**

A framework of the actions/activities required to manage a road network as a business: identifying sources of funding, levels of investment, targeting of funding and, how that targeting is undertaken to give optimum returns in terms of measurable economic and social benefits to justify investment policies.

Strategy

Concerned with positioning an organization in such a way that it can achieve its long-term objectives.

Stakeholder Strategic

Identification of the interests or 'stakes' of the direct affectees in the results of road management.

Customer Focus

Applying the principles of 'serving' a customer, where the road user is the customer, and ensuring that all strategic inputs and outputs are publicized, explained, and then delivered to that customer.

Shareholder Value

The value interest and benefit, that a shareholder (stakeholder) has within a road management programme.

Corporate Structure

A group of people working as one unit towards achieving a common goal.

Valuation Principles

The set of rules and guidelines that relate to pricing and costing or economic evaluation that are applied to the assets of a road network.

Performance Indicators

The predetermined and measurable parameters that will be used to identify and evaluate results.

Resources

The combined provisions of human, material and financial constituents that are available for a road maintenance or improvement programme.

Long Range Strategic Plans

Establishing Road Sector development targets the achievement of which is ensured through following a chain of short term plans.

Demand Modeling

Repeated assessment of road networks or links at definite intervals aimed at preserving future plans to suit the needs of regionally and nationally focused social and commercial development programmes.

CLASSIFYING TRAFFIC BANDS FOR ROAD NETWORK MODELING AND MANAGEMENT**General**

The traffic details for the national highway network require updating and re-classifying.

The reclassification should also be linked to the road categories 1-V that have now been adopted.

Details

For the sake of different types of modeling plus prioritization of works programmes, the RAM System has adopted 13 different traffic bands for analysis purposes.

The classifications begin at < 1000 and rise in 1000 increments up to > 11,000 and < 12,000. The final classification is > 12,000.

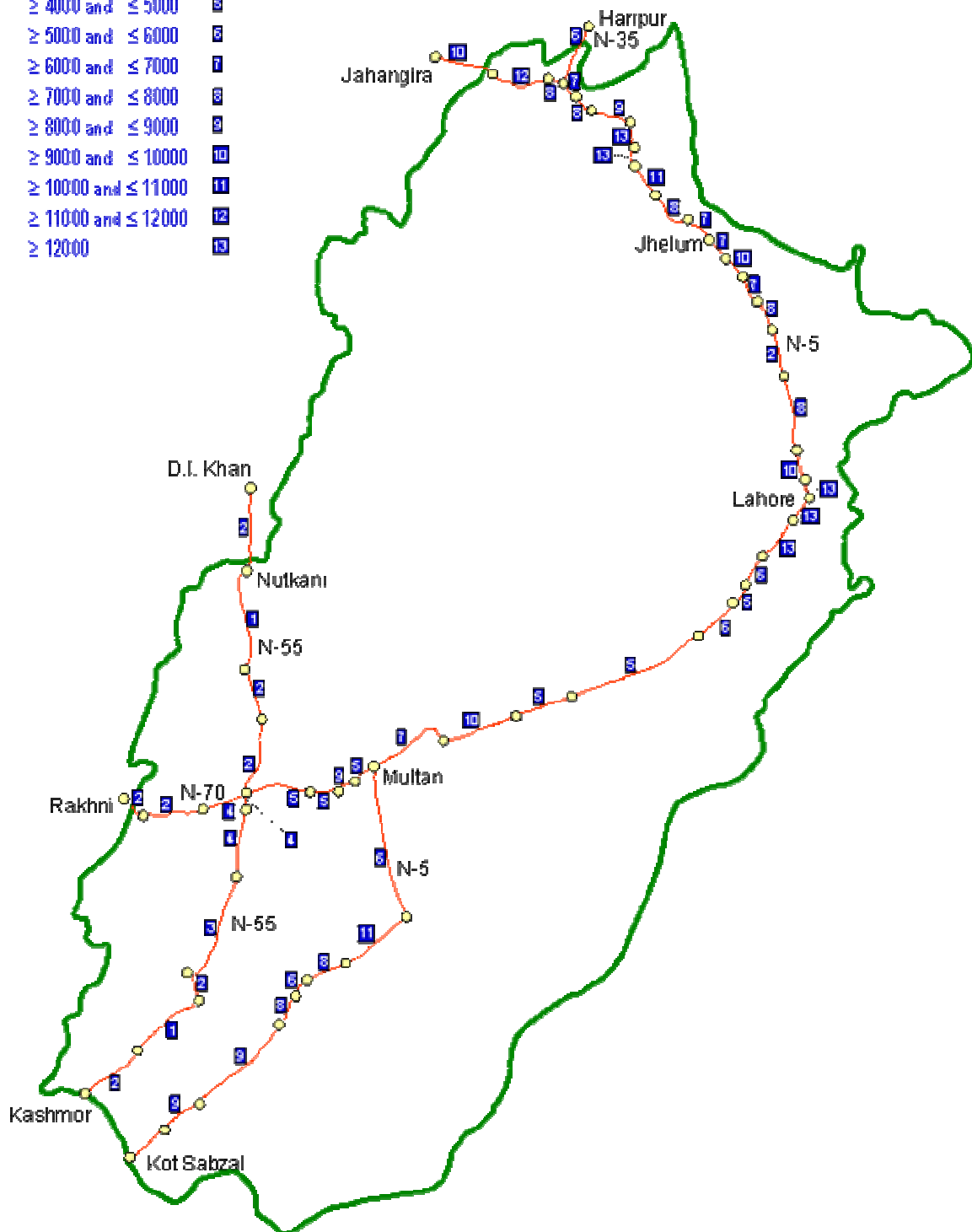
The attached maps show the existing traffic classifications imposed on the 171 links that were used in the 1998 HDM study for the national highways.

TRAFFIC DATA

NATIONAL HIGHWAYS IN PUNJAB

Avg. Annual Daily Traffic

< 1000	1
≥ 1000 and ≤ 2000	2
≥ 2000 and ≤ 3000	3
≥ 3000 and ≤ 4000	4
≥ 4000 and ≤ 5000	5
≥ 5000 and ≤ 6000	6
≥ 6000 and ≤ 7000	7
≥ 7000 and ≤ 8000	8
≥ 8000 and ≤ 9000	9
≥ 9000 and ≤ 10000	10
≥ 10000 and ≤ 11000	11
≥ 11000 and ≤ 12000	12
≥ 12000	13

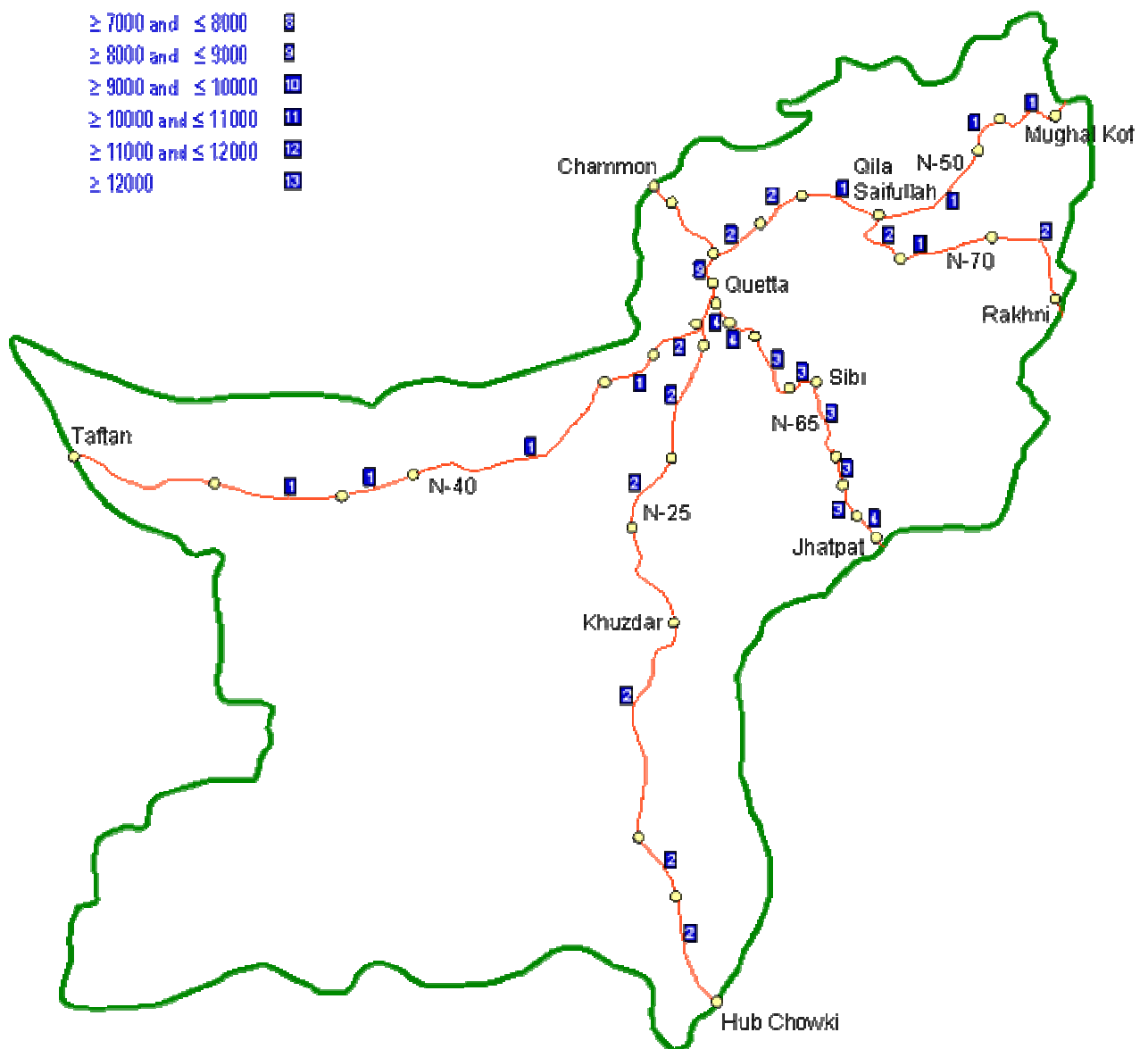


TRAFFIC DATA

NATIONAL HIGHWAYS IN BALOCHISTAN

Avg. Annual Daily Traffic

< 1000	1
≥ 1000 and ≤ 2000	2
≥ 2000 and ≤ 3000	3
≥ 3000 and ≤ 4000	4
≥ 4000 and ≤ 5000	5
≥ 5000 and ≤ 6000	6
≥ 6000 and ≤ 7000	7
≥ 7000 and ≤ 8000	8
≥ 8000 and ≤ 9000	9
≥ 9000 and ≤ 10000	10
≥ 10000 and ≤ 11000	11
≥ 11000 and ≤ 12000	12
≥ 12000	13

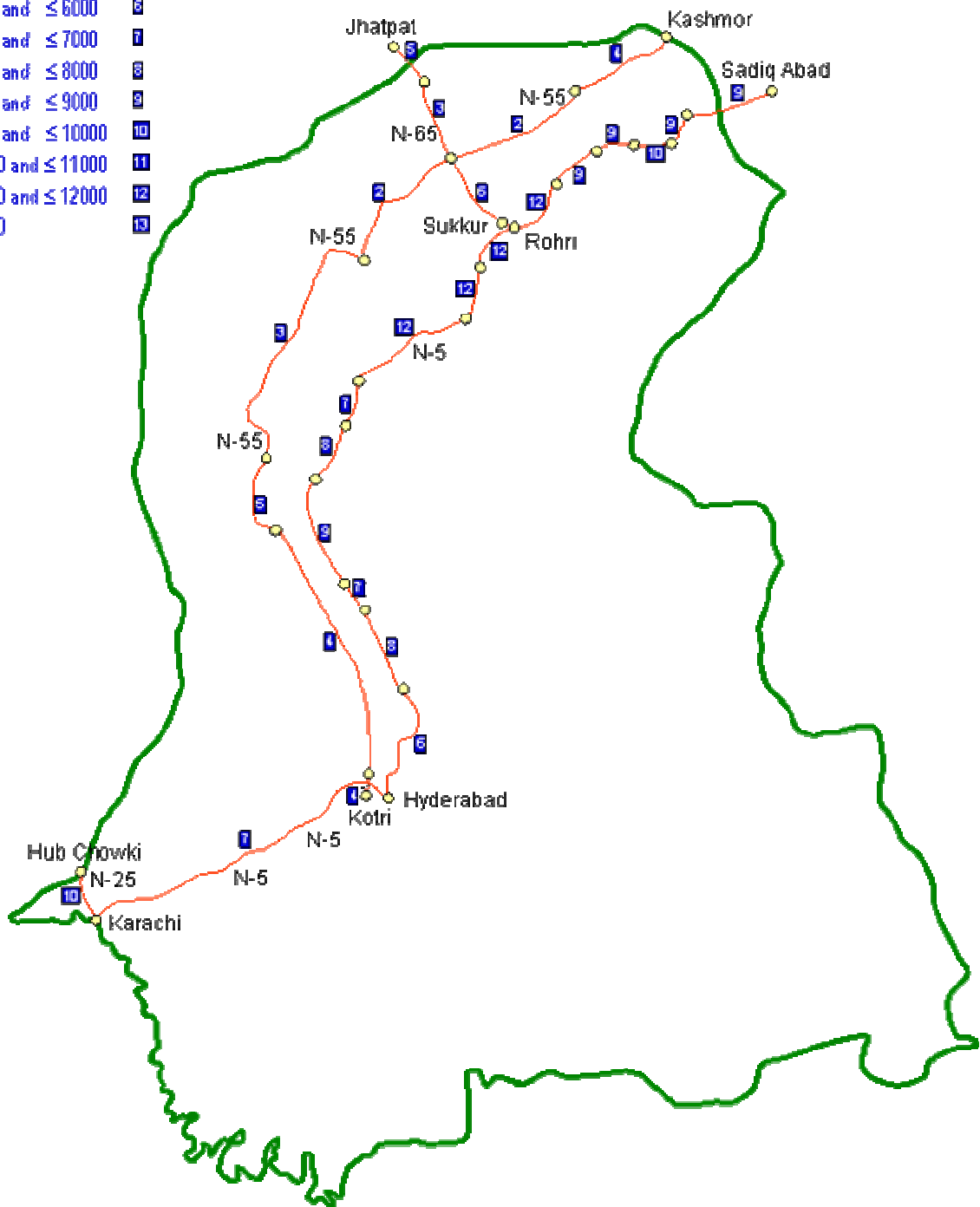


TRAFFIC DATA

NATIONAL HIGHWAYS IN SINDH

Avg. Annual Daily Traffic

< 1000	1
≥ 1000 and ≤ 2000	2
≥ 2000 and ≤ 3000	3
≥ 3000 and ≤ 4000	4
≥ 4000 and ≤ 5000	5
≥ 5000 and ≤ 6000	6
≥ 6000 and ≤ 7000	7
≥ 7000 and ≤ 8000	8
≥ 8000 and ≤ 9000	9
≥ 9000 and ≤ 10000	10
≥ 10000 and ≤ 11000	11
≥ 11000 and ≤ 12000	12
≥ 12000	13



**PROGRAMME DESIGN – GUIDELINE NOTES FOR
RELEASE TO THE SERVICE PROVIDER**

It is important when issuing the finalized Programme Design, that the Designer fully briefs the Service Provider not only about the composition of the design, with its items of works and quantities, but also his approach to composing the design.

The various influences that caused the Programme Designer to identify certain features or works, may also influence the Service Provider in the approach he should adopt in the execution of those works. Especially with regards to timing within his works programme.

The whole approach to the RAM System should be one of co-operation and corporatisation with a view to achieving the best overall result and benefits to stakeholders.

Attached is an example of a set of Guideline Notes for a specific Programme Design as applied to the National Highways.

PROGRAMME DESIGN - GUIDELINE NOTES

GENERAL APPROACH

The new policy of NHA is to implement a Road Asset Management System for assessing and planning annual maintenance programmes. At the same time the planning and operations management of the maintenance function will be clearly demarcated and each will proceed under concise operating instructions.

The principal objectives of the new asset management approach are to:

- i) Conserve existing highway assets according to their Net Present Value (NPV).
- ii) Identify those links where minor interventions at key points, that currently have poor service levels, will reinstate the overall integrity of the link to a much higher level.
- iii) Generally improve and develop all highway serviceability levels.
- iv) To obtain the correct level of economic returns from all investments in maintenance activities.

DETAILED ANALYSIS – N-5 Section Km 1266 – Km 1535

For the Lahore to Rawalpindi section of the National Highway N-5, various links can be identified that have homogenous features of:-

Design level, environmental characteristics, traffic volume levels and improvement activities.

As a consequence, the Programme Design should be both phased and designed specifically to suit the identifiable homogenous links.

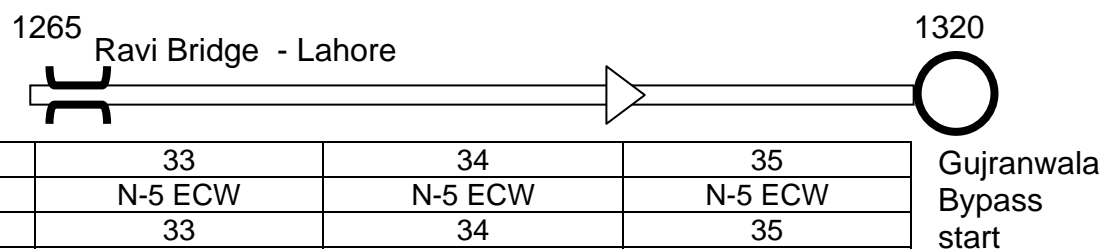
The links for analysis in this first phase are:

North & South bound sections of Lahore to Gujranwala (Dealt with as two separate links).

DETAILED ANALYSIS

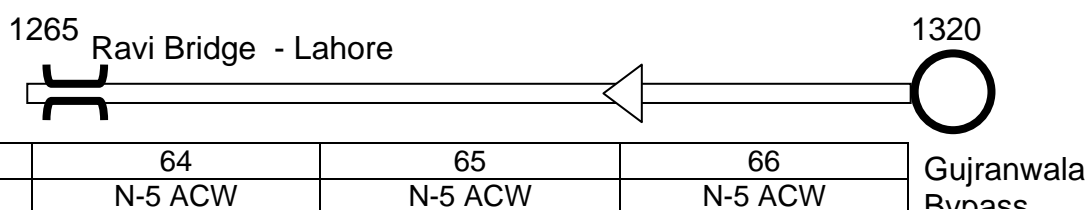
The first section to be phased in the Annual Road Conservation Programme is the section from Lahore to Gujranwala (Southern junction of the Bypass). Km 1266 to 1320.

(i) Northbound Carriageway



Link No.	33	34	35
Code	N-5 ECW	N-5 ECW	N-5 ECW
Section	33	34	35
Start	1260	1268	1287
End	1268	1287	1320
Length (Kms)	8	19	33
Location	Lahore – Shahdara	Shahdara - Muridke	Muridke – Guj'wala

(ii) **Southbound Carriageway**



Link No.	64	65	66
Code	N-5 ACW	N-5 ACW	N-5 ACW
Section	33	34	35
Start	1268	1287	1320
End	1260	1268	1287
Length (Kms)	8	19	33
Location	Shahdara - Lahore	Muridke - Shahdara	Guj'wala – Muridke

This section of the N-5 has undergone all the currently projected development programmes and provides adequate capacity for current and projected traffic levels over the next decade.

The section lends itself to both (i) medium and low cost conservation works and (ii) minor interventions concerning functional and structural asphaltic overlays which could increase the serviceability levels quite significantly.

Additionally it is recognized that a Safety Audit over the section would produce an up-to-date traffic engineering model to improve safety levels on a generally fast straight and flat section and where the existing traffic engineering/safety arrangements are very poor.

A detailed Bridge/Structures Evaluation is also called for before the asphalt overlays are undertaken in case there are more major structural repair works required that would disturb the pavement.

The Programme Designer and O&M Contractor will be organizing both Safety Audit and Bridge Survey in the next 6-8 weeks.

Notes to Contractor on Choice of Works and Compilation of Quantities

With reference to the Estimated Quantities Sheet the O&M Contractor may observe where the various interventions have been seen, assessed, and categorized.

The application of the World Bank's HDM model gives the indications where Periodic Works will have to take place. The Programme Design for conservation works on the pavement is therefore built around the planned programme of functional and structural overlays, being required in the next 2 years. The longer term functional seals at 4 years intervention have not been considered at this time.

Following are the Planned Intervention Treatments for the Lahore-Gujranwala section, as prioritized from the HDM-III analysis.

Link No.	Direction	Km – Km	Treatment Code	Base Year	Execution Year
33	North Bound	1265 - 1268	04 – 3	1998	2001
34	North Bound	1268 - 1287	05 – 3	1998	2001
35	North Bound	1287 - 1320	05 – 3	1998	2001
66	South Bound	1320 – 1287	04 – 3	1998	2001
65	South Bound	1287 – 1268	12 - 5	1998	2003
64	South Bound	1268 - 1265	02 - 3	1998	2001

Treatment Interventions

Base Year = 1998

Code

02 – 3 :	30 mm Triple Surface Treatment	(After 3 years)
04 – 3 :	7.5 cms Asphaltic Overlay	(After 3 Years)
05 – 3 :	13 cms Asphaltic Overlay	(After 3 Years)
12 – 5 :	30 cms Stabilized Base plus 8 cms Asphaltic Overlay	(After 5 Years)

Detailed Notes

1. Drainage

As much of the road is on moderately high embankment and any ditches are primarily for agricultural irrigation purposes, therefore, no ditching has been included.

All Cross-drainage facilities, however, have been included.

All culverts are included in the measurement. Some require little or only cursory work at the inlets and outlets, others require major excavation to clean them.

Because of a lack of attention to the drainage in recent seasons, this must be attended to. The Contractor is recommended to assess this work carefully with his own survey as clearing some of the older culverts will require additional planning for execution.

2. Sweeping and Cleaning Highway Structures

All bridge and major culverts require the parapet/kerbline channel cleaning. Please note under item 2.6 all bridge drainage outlets are included in this item. It is important to clear all pipes.

At some locations, total of sweeping and cleaning is around 2000 m² per kilometer, This includes clearing the channel adjacent to the central median concrete barrier. In some instances this is also the drainage channel. The width of sweeping/clearing allowed is 1.0 meter and the sum allows for two clearing operations – before the monsoon and after the rains.

3. Pavements

Those cracked areas, in the wheel tracks especially, which are beginning to depress and settle under traffic loading, the various asphalt layers have to be cut out and completely removed. The asphalt quantities are for treating the worst areas of deflection. Only asphaltic concrete material prepared in an asphalt plant can be used for this purpose and planning is required to have patches ready one section at a time. At no time, must long sections of open excavation be carried out that would pose a safety hazard.

Where the cracking is not combined with depressions, the Design calls for either Double or Triple surface dressing. These surface treatments must however be “keyed in” to the existing pavement at both end joints so that vehicles are not subjected to joint vibration. In locations of excessive deeper failures, the Designer has included Waterbound Macadam for rebuilding bases/sub bases.

4. Repairs to Structures

Repairs to bridge parapets, concrete on the Northbound carriageway, and angle Iron generally on the Southbound carriageway, are badly needed. These should be an early priority because of the dangers to the road user.

5. Painting

All structures are included for painting but on no account must this be undertaken until all the bridge and structures channels have been firstly completely cleaned. As present all painting is obscured by the mud splashing from the channels. As this is also a question of safety (night vision of bridges and structural barriers). Failure to follow the procedure will show as one of key listed Performance Indicators (under safety and traffic provisions).

6. Control and Protection of Traffic

Necessary care to be exercised when undertaking a repair work. In order to facilitate traffic movement through and around the works, traffic signs (signals, illuminations, barricades etc) should be erected and maintained. Project information signs should be erected at appropriate locations. Materials used in traffic control devices such as markers, tapes, signs, flash lights, diversion cones etc. shall conform to ASTM or BS standards, as approved by the Engineer. In all cases, easy visibility to road user must be ensured.

CONTRACT COMPLETION REPORTING - STANDARD FORM

The necessity to prepare a completion report is already well established in government regulations. It is the P.C. IV.

There is however the need to make the reports more "informative in terms of data that is compatible with the databank management".

The format should be a financial statement in terms of asset management, showing in detail the costs involved in maintaining serviceability levels on each single kilometer link.

Two samples of completion report for different routine/periodic maintenance contracts are shown attached.

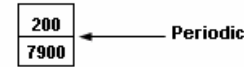
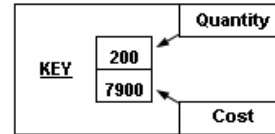
ANNUAL ROAD CONSERVATION PROGRAMME

CONTRACT COST ANALYSIS - PC IV (Completion Report)

PROVINCE : Punjab
 DISTRICT : Muzaffargarh
 ROUTE NO.: P03

DESCRIPTION Alipur Punjad to Rohalian Wali Police Station

KM 0 to KM 25 Sheet 1 of 3



Contract Details	
Contract No.	ROUTINE/209
Contractor	M/S HASSAN & CO
Date of Award	January 1, 2000
Contract Value	PKR 2,239,403.00
Analysis By	Lt Col. (R) Atiq-ur-Rehman
Date	June 5, 2000

ITEM	DESCRIPTION	UNITS	CONTRACT RATES	05		10				15				20				25		TOTAL QTY	UNITS													
				KM	KM	KM	KM	KM	KM	KM	KM	KM	KM	KM	KM	KM	KM	KM	KM															
2.1	CLEAN EXISTING SIDE DRAIN EXCAV.<100mm	M	1.00							50	50	600	800	800	800	800	600	600	400	400							100						200	200
										50	50	600	800	800	800	800	600	600	400	400							100						200	200
2.2	CLEAN EXISTING SIDE DRAIN EXCAV.>100mm	M ³	-																															
2.3	CLEAN EXISTING PIPE CULVERT EXCAV.	M	35.00							30	15	15			30		25	60	30	15	15					15				15	45			
										1050	525	525			1050		875	2100	1050	525	525					525				525	1575			
2.4	CLEAN EXISTING BOX CULVERT EXCAV.<100mm	M	38.00							30	45		45	15	15	45	30	30	30		15				30	30	15				45			
										1140	1710		1710	570	570	1710	1140	1140		570					1140	1140	570				1710			
2.5	CLEAN EXISTING BOX CULVERT EXCAV.>100mm	M ³	110.00								5		5	3		2										5								
											550		550	330		220										550								
2.6	SWEEP + CLEAN HIGHWAY STRUCTURES	M ²	-																															
2.7	GRADING OF SHOULDERS AND EMBANKMENTS	Hrs.	600.00	4	8	8	16	16	16	8					4	8	4		8	16	16	16	8		8	12	16	16	8					
				2400	4800	4800	9600	9600	9600	4800					2400	4800	2400		4800	9600	9600	9600	4800		4800	7200	9600	9600	4800					
2.8	CUTTING GRUBBING OUT OF ROADSIDE VEGETATION.	M ²	-																															
3.1	ROTARY MACHINE BITMAC TO PREPARED POTHOLES	M ³	-																															
3.2	HOT BITUMEN SURFACE DRESSING DOUBLE COAT	M ²	39.50	200	500	200		200	200					70	200	100	50	50			20	200	200				100	50	100					
				7900	19750	7900		7900	7900					2765	7900	3950	1975				790	7900	7900				3950	1975	3950					
3.3	HOT BITUMEN SURFACE DRESSING TRIPLE COAT	M ²	80.00												10	10	5					10					5	10	10					
															800	800	400					800					400	800	800					
3.4	WATERBOUND MACADAM FOR ROAD BASE COURSE	M ³	600.00	1											1	1	0.5					1					0.5	1	1					
				600											600	600	300					600					300	600	600					
3.5	GRAVEL/GRANULAR TO SHOULDERS 150mm	M ³	514.00	20	5	10	10	10	15	5	25	25	10	10	15	15	15	5	125	55	30	40	20	20	30	30	20	20						
				10280	2570	5140	5140	5140	7710	2570	12850	12850	5140	5140	7710	7710	7710	2570	64250	28270	15420	20560	10280	15420	10280	10280								
3.6	REPAIRS TO BRICK / STONE MASONRY 1:3 MORTAR	M ³	1300.00							4	2	1	5			1	2	2	6	6	6	1	2	1	1	1	1	1	4	1				
										5200	2600	1300	6500			1300	2600	2600	9100	9100	9100	1300	2600	1300	1300	1300	1300	5200	1300					
3.7	REPAIRS TO CONCRETE STRUCTURES	M ³	1980.00													4	1																	
																7920	1980																	
3.8	WHITE PAINT TO HIGHWAY STRUCTURES	M ²	27.00	20	20	20	55	170	20	45	40	30	55	20	35	35	40	85	60	30	25	20	30	35	45	25	35	35						
				540	540	540	1485	4590	540	1215	1080	810	1485	540	945	945	1080	2295	1620	810	675	540	810	945	1215	675	945	945						
3.9	CLEAN & REPAINT FIGURE Km. POSTS/TRAFFIC SIGNS	No	74.00	1						1					3	1						1					1							
				74						74					222	74							74					74						
COST/KM				21734	27620	10620	20133	27204	29770	14049	10615	17609	15623	7932	15214	22223	22239	36640	20609	73623	41720	27420	41284	19020	20603	29723	22224	3623	Total Cost			655048		

The Periodic Maintenance Programme

General

The periodic maintenance programme will cover all those works of structural and functional overlays and the application of surface dressing resealing coats.

These range from 25 cms of asphalt, in combined courses, to double and single coat reseals respectively.

The use of this very important programme as the mainstay of the whole question of conserving and enhancing asset values must be appreciated by NHA.

If the annual periodic maintenance programme is designed and executed correctly all other related maintenance activities will be optimized as a matter of course. The periodic maintenance programme is the key programme.

Details

For the coming season the programme will be selected mainly by the application of the HDM IV model.

The list of periodic operations as produced from that study (1999-2000) are shown in Figure 1 as a sample.

For the proposed Road Asset Management System the annual budget for maintenance is around Rs. 600 million, the recommendation is to limit the periodic programme to structural and functional overlays or less. Any works that require the provision of granular/aggregate bases are to be placed in the Core Investment and Maintenance Programme (CIMP) and funded separately.

Budgetary Provision (Sample - 1999-2000)

With the R.A.M.S. targeting all maintenance works in order to give better value for money, all the preparatory and ancillary works can be accomplished with 25% of the available budget as a maximum.

The application of HDM IV utilizing the results of the 1999 condition surveys will indicate the provisional programme of prioritized periodic maintenance for the 1999/2000 season to around the value of Rs. 500 million.

This should begin in the period September – October and then, in consideration in which climatic zone the various links are located, continue in March – April time up to end of financial year. A chart giving the general approach to planning the Annual Road Conservation Programme is shown in Figure 2 as a sample.

The Periodic Maintenance indicative programme, from the 1998 study, that could be accommodated in Rs. 500 million is reproduced in Figure 3 and 4 as a sample.

Figure 1:

1	25 mm DST	Functional Reseals
2	30 mm TST	
3	5 cm Overlay	Functional Overlays
4	7.5 cm Overlay	
5	13 cm Overlay	Structural Overlays
6	15 cm Overlay	
7	20 cm Overlay	
8	25 cm Overlay	
9	30 cm Granular Base / 15 cm Asphalt Concrete	Reconstruction
10	30 cm Granular Base / 20 cm Asphalt Concrete	
11	30 cm Granular Base / 25 cm Asphalt Concrete	
12	30 cm Stab. Base / 8 cm Asphalt Concrete	
13	30 cm Water Bound Macadam / DST	
14	30 cm Water Bound Macadam / TST	
15	15 cm Water Bound Macadam / TST	
16	15 cm Granular / 5 cm Asphalt Concrete	

Figure 2:

The Maintenance Planning Chart - (Annual)

Type of Prog.	Months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Annual Road Conservation Programme (ARCP)	Drainage Activities		■				■			■			
	Asphaltic Activities			■	■	■	■	■	■	■	■	■	
	Repairs to Structures			■	■	■	■	■	■	■	■	■	
	Painting and Cleaning		■	■	■	■	■			■	■	■	
	Miscellaneous (Traffic Eng.)	■	■	■		■	■	■	■	■	■	■	■

Figure 3: 0.6 Billion/annum/HDM Forecast

The following sections are provisionally earmarked for inclusion in a Periodic Maintenance Programme:

Sr.No.	Route	From	To	Length	Treatment	Year	Cost
		Km	Km	Km			(million Rs.)
1	N-35	33	54	21	02	3	15.00
2	N-5ECW	1397	1413	16	02	3	11.43
3	N-5ECW	1503	1522	19	02	3	13.57
4	N-5ECW	1585	1589	4	02	3	2.86
5	N-5ACW	1221	1245	24	02	3	17.14
6	N-5ACW	1260	1268	8	02	3	5.71
7	N-5ACW	1362	1380	18	02	3	12.86
8	N-5ACW	1397	1413	16	02	3	11.43
9	N-5ECW	1433	1448	15	02	3	10.00
10	N-5ACW	1433	1448	15	02	3	10.00
11	N-35	94	115	21	02	3	10.00
12	N-5ECW	1380	1397	17	02	3	12.35
13	N-5ACW	1148	1180	32	02	3	23.24
14	N-5ACW	1190	1221	31	02	3	22.51
15	N-5ACW	1413	1433	20	02	3	14.53
16	N-35	0	33	33	02	3	23.97
17	N-5ACW	163	209	46	02	3	33.41
18	N-5ECW	1569	1585	16	02	3	11.68
19	N-5ACW	1380	1397	17	02	3	12.41
20	N-5ACW	1569	1585	16	02	3	11.68
21	N-5ACW	1180	1190	10	01	3	5.14
22	N-5ACW	1638	1657	19	01	3	9.77
23	N-55	0	4	4	01	3	2.06
24	N-55	444	495	51	01	3	26.21
25	N-5ECW	1638	1657	19	02	3	14.48
26	N-65	372	385	13	02	3	10.00
27	N-25	712	731	19	02	3	10.56
28	N-5ECW	1678	1700	22	01	3	10.00
29	N-50	96	162	66	02	3	30.00
30	N-25	120	175	55	01	5	27.63
31	N-55	495	537	42	01	5	21.10
32	N-55	717	767	50	01	5	25.11
33	N-55	767	798	31	01	5	15.57
34	N-55	378	444	66	01	5	33.15
35	N-25	477	545	68	01	5	34.16
36	N-55	597	604	7	01	5	3.52
37	N-55	846	931	85	01	5	42.69
38	N-5ACW	1328	1362	34	01	5	17.08
						TOTAL	623.99

Figure 4: 4.5 Billion/annum/HDM Forecast

The following sections are provisionally earmarked for inclusion in a Periodic Maintenance Programme:

Sr.No.	Route	From	To	Length	Treatment	Year	Cost
		Km	Km	Km			(million Rs.)
1	N-5ACW	1433	1448	15	02	1	10.00
2	N-25	712	731	19	02	1	10.56
3	N-55	307	378	71	02	1	39.44
4	N-50	96	162	66	02	1	30.00
5	N-35	33	54	21	02	3	15.00
6	N-55	378	444	66	01	3	33.15
7	N-55	717	767	50	01	3	25.11
8	N-25	120	175	55	01	3	27.63
9	N-25	477	545	68	01	3	34.16
10	N-55	495	537	42	01	3	21.10
11	N-55	597	604	7	01	3	3.52
12	N-55	767	798	31	01	3	15.57
13	N-55	846	931	85	01	3	42.69
14	N-40	310	365	55	01	3	23.91
15	N-40	365	478	113	01	3	49.13
16	N-55	537	597	60	01	3	26.09
17	N-55	798	846	48	01	3	20.87
18	N-5ACW	1678	1700	22	01	3	10.00
						TOTAL	437.93

BRIDGE MANAGEMENT STRATEGY

STANDARD OPERATING PROCEDURE

INSPECTION OF BRIDGES

1. INTRODUCTION

Bridge inspections are conducted to determine the physical and functional condition of the bridge, to initiate maintenance actions, to provide a continuous record of bridge condition and rate of deterioration, and to establish priorities for repair and rehabilitation programs. Inspections should not be confined to searching for defects, but should include anticipating incipient problems. The field investigation of a bridge should be conducted in a systematic and organized manner that will minimize the possibility of any bridge item being overlooked. To achieve this objective, consideration has been accorded to standardize a format for the Bridge Inspection Report, that is, a systematic sequence of bridge inspection.

2. PURPOSE

The purpose of inspection and its reporting system is that the NHA receives an accurate and latest report on each structure, which will help us in the maintenance programs and to safeguard against any catastrophic event. According to the new procedure, all DD/AD's will inspect each bridge structure in their area of responsibility and submit one copy, each to Road Asset Management Director (RAMD) and their respective regional office. The main advantages will be as under:

- a. Minor defects/repairs will be attended by the maintenance staff on a regular basis. It will increase the life span of structures and save us from ultimate major repairs.
- b. RAMD as well as the regional offices will get the complete assessment of the condition of bridges.

3. SCOPE

The SOP will deal with bridge structures, having a total span between the outer abutments as 6.5 meters (20 ft) or above. Those structure with total span less than 6.5 meters fall in the category of "culverts", that will also be checked by the maintenance staff on separate format which will be reported and monitored by the regional offices only.

4. BRIDGE INSPECTION REPORT

The "Bridge Inspection Report" Form (Annexure-A) has been made after consulting a number of publications on the subject and further improved to incorporate all details required by NHA officials. The form has been made as simple as possible to be comprehended by the site staff of NHA. The Inspection Form is self-explanatory and self-prompting, in that the individual carrying out the inspection is asked a number of questions along with same number of answers to cater for all possible information required for the inspection of a bridge. In reply to the queries, the bridge inspector will answer by a tick mark in the appropriate columns. **However for the convenience and guidance of the staff, one completely filled form (Annexure-B) along with a Guideline for Bridge Inspection (Annexure-C) are also attached.**

5. **PROCEDURE**

The procedure adopted will be as outlined below:-

- a. The bridge structures will be inspected and checked by the maintenance staff on regular basis. 'Bridge Inspection Report' forms will be filled for each individual bridge during its inspection and these forms will be dispatched to RAMD as well as to regional offices.
- b. RAMD/Regional Office will monitor the bridge inspection reports. When required, the Structural Expert NHA will visit those bridges which are in critical condition, requiring major repairs and suggest remedial measures along with their cost estimates, to be prepared by our Quantity Surveying Section.
- c. Based on the inspection reports received, a 'Bridge Inventory' of all bridges under the jurisdiction of NHA will be prepared and updated at RAMD.

6. **FREQUENCY**

Each bridge should be inspected at a regular interval not to exceed one (1) year or longer intervals of two (2) years for certain bridges, where such action is justified by past reports and performance history. The bridge foundations and scour should also be checked after every monsoons / heavy torrential rains and during the closure month of irrigation canals.

7. **REPORTING SCHEDULE**

All bridges and culverts will be inspected by the concerned DD/AD's (Maintenance) in a regular routine and they will submit the completed inspection reports to RAMD and respective regional offices by 31st March, every year. All General Managers will certify to Member (Operations) and Member (Planning) that all bridges/culverts in their area of jurisdiction have been inspected by their subordinate staff according to the laid-down SOP and Inspection Reports for bridges have been submitted to the RAMD. The certification by the General Managers should reach the RAMD by 15th April.

8. **PRIORITY LISTING AND PROGRAMMING OF REPAIR AND RESTORATION WORKS**

The Programme Designer will prepare a prioritized programme of structural works.

Where the defective structures are to be replaced by new bridges these works should be part of the Development Investment Portfolio.

Where re-decking or other similar structural strengthening works are required, then perhaps the Medium Term Maintenance Programme is the correct funding vehicle.

9. **SAFETY**

The bridge inspection should not be regarded as absolutely safe or an easy work. The bridge inspection teams will often have to go under the bridges having wild growth, deep waters or other dangerous/difficult areas. The inspection teams should be cautioned against snakebites and other injuries, for which first-aid kit must be carried along. On certain busy highways, while taking down readings, one should be mindful of fast moving traffic on the bridge. Personal protective clothing should be worn including hard hats, reflective vests and appropriate footwear. Proper safety precautions should be employed when entering river or canal water, a life jacket, lanyard and harnesses are a must. In all eventualities, a second

person should stand near by for any emergent help. Inspection vehicle when procured and made available, should be operated strictly in accordance with the instructions given its operating manual.

ANNEXURE - A

BRIDGE INSPECTION FORMS



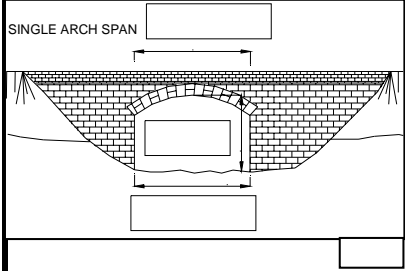
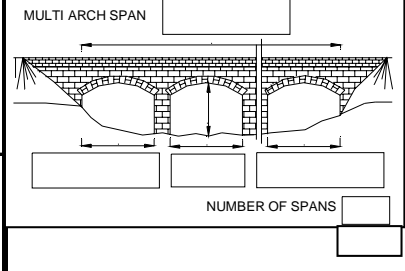
NATIONAL HIGHWAY AUTHORITY
BRIDGE INSPECTION REPORT
 (Span > 6.5 meters)

Form No. 2002/B/1

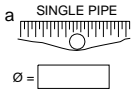
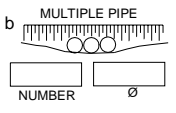
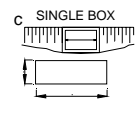
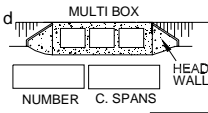
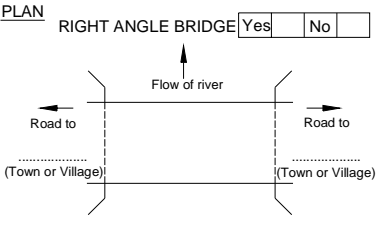
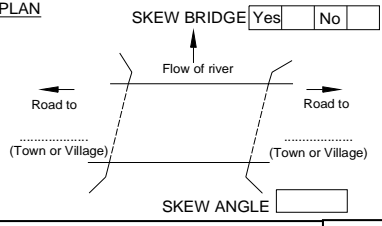
Province
Highway No N-.....
Bridge No B.....
Side

Bridge Name..... Crossing.....
 Kilometer..... on(Town/village) To(Town/ Village)
 Inspection Date..... Inspected By.....

POSSIBLE PROBLEM	Problem		How bad?		How much?			Note or sketch reference	No of Spans =			
	No	Yes	Not very bad	Bad	Very serious	Not much	Some		A lot	Total Span (m) =	Vertical Clearance (m) =	Total Deck width (m) =
1. ROAD SURFACE NEAR BRIDGE									<input checked="" type="checkbox"/> Fill in the Appropriate Figure			
1.1 GENERAL <input checked="" type="checkbox"/> Tick Appropriate Column												
Bumpy road surface ?												
Badly built road												
drainage near bridge?												
Blocked or damaged road drains ?												
Water on the deck ?												
Blocked or damaged deck drains ?												
All checked Yes No												
2. BRIDGE SURFACE												
2.1 BITUMEN SURFACE OVER BRIDGE												
Surface breaking up or lifting off ?												
Cracking above joints ?												
2.2 CONCRETE SURFACE												
Cracking ?												
Spalling ?												
Reinforcement exposed ?												
Poor concrete ?												
Wear of surface ?												
2.3 KERBS FOOTPATHS												
Damaged or loose Kerbs ?												
Damaged footpaths ?												
All checked Yes No												
3. PARAPETS, RAILINGS AND GUARD RAILS												
3.1 GENERAL												
Impact damage ?												
Loose or damaged fixings ?												
Loose post base ?												
3.2 STEEL PARAPETS												
Damaged galvanising or paint?												
Corrosion ?												
3.3 CONCRETE PARAPETS												
Cracking ?												
Spalling ?												
Corrosion of reinforcement ?												
Poor concrete ?												
3.4 MASONRY PARAPETS												
Cracking ?												

POSSIBLE PROBLEM	Problem		How bad?			How much?			Note or sketch reference	No of Spans =		
	No	Yes	Not very bad	Bad	Very serious	Not much	Some	A lot		Total Span (m) =	Vertical Clearance (m) =	
Movement or bending of parapet ?										SINGLE ARCH SPAN		
Poor pointing ?											MULTI ARCH SPAN	
Deterioration of the bricks or stone work ?											NUMBER OF SPANS	
3.5 EXPANSION JOINTS												
Damage to concrete of deck end or ballast wall near joint ?											SINGLE SPAN TRUSS	
Debris or vegetation in joint ?											MULTI SPAN TRUSS	
Loose or damaged fixings ?											NUMBER OF SPANS	
Damage or corrosion to metal parts ?												
Damage to rubber waterbars?												
All checked			Yes	No								
4. THE RIVER												
4.1 BLOCKAGES IN WATERWAY PASSAGE												
Debris against piers or abutments ?												
Remains of old bridges under or upstream of the bridge ?												
Fencing or buildings under bridge ?												
Trees or bushes growing under bridge ?												
4.2 CHANGE OF RIVER PATH												
River changing path upstream from bridge ?												
New islands forming upstream of bridge ?												
4.3 RIVER TRAINING WORKS												
River attack beyond the upstream end of the river training works ?												
Loss of rip - rap ?												
Damage to gabions ?												
All checked			Yes	No								
5. SUPER STRUCTURE												
5.1 GENERAL												
Impact damage to beams, girders, trusses or bracings ?									R.C.C SLAB BRIDGE			
Debris or vegetation on beams, girders, trusses or bracings or in joints ?									FOOTPATH KERB			
Water coming through the deck ?												
Water from the deck drainage flowing onto girders, trusses, beams or bracing ?												
Not enough headroom for over bridge ?			MIN HEADROOM.....									
			If the road has been resurfaced									

POSSIBLE PROBLEM	Problem		How bad?		How much?			Note or sketch reference	No of Spans =							
	No	Yes	Not very bad	Bad	Very serious	Not much	Some		A lot	Total Span (m) =	Vertical Clearance (m) =	Total Deck width (m) =	Clear Width (m) =			
5.2 CONCRETE BEAMS																
Cracking ?																
Spalling ?																
Corrosion of reinforcement ?																
Poor concrete ?																
5.3 STEEL GIRDERS AND BRACINGS																
Deterioration of paint or galvanising ?																
Corrosion ?																
Bends in webs, flanges, stiffeners or bracings ?																
Loose bolts or rivets ?																
Cracking ?																
5.4 STEEL TRUSSES																
Deterioration of paint or galvanising ?																
Corrosion ?																
Bends in truss members ?																
Bent or damaged joints ?																
Bent or damaged bracings ?																
Loose bolts or rivets ?																
Cracking of steel members ?																
6. UNDERSIDE OF DECK																
6.1 CONCRETE																
Cracking ?																
Spalling ?																
Corrosion of reinforcement ?																
Poor concrete ?																
Not enough cover to reinforcement ?																
6.2 STEEL																
Deterioration of paint or galvanising ?																
Corrosion ?																
Bends in stringers or plates ?																
Loose bolts or rivets ?																
Cracking ?																
7. BEARINGS																
7.1 ALL BEARINGS																
Debris or vegetation around bearings ?																
Bad drainage to bearing shelf ?																
Not enough room for the bridge span to move ?																
Bearing not seated properly ?																
Bridge span not seated properly on bearing ?																
Damaged bedding mortar ?																

POSSIBLE PROBLEM	Problem		How bad?			How much?			Note or sketch reference	No of Spans =				
	No	Yes	Not very bad	Bad	Very serious	Not much	Some	A lot		Total Span (m) =	Vertical Clearance (m) =	Total Deck width (m) =	Clear Width (m) =	
7.2 RUBBER BEARINGS														
Splitting, tearing or cracking of rubber ?														
Damaged or loose bolts or pins at fixed bearings ?														
7.3 METAL BEARINGS														
Parts not properly seated ?														
Parts not free to move ?														
Problem with the lubrication system ?														
Sliding surfaces damaged ?											PLAN RIGHT ANGLE BRIDGE <input type="checkbox"/> Yes <input type="checkbox"/> No 			
Cracks or bends in metal parts ?														
Corrosion of metal parts ?														
7.4 EARTHQUAKE RESTRAINTS														
Damaged or loose earthquake restraints?														
	All checked			Yes	No									
8. MASONRY ARCHES														
Change of shape of arch ?											PLAN SKEW BRIDGE <input type="checkbox"/> Yes <input type="checkbox"/> No 			
Cracking of arch barrel ?														
Cracking or bulging of spandrel walls ?														
Spandrel walls separating from arch ?														
Spalling of stones or bricks ?														
Poor pointing ?														
Water leaking through arch ?														
Scour under arch foundations ?														
	All checked			Yes	No									
9. ABUTMENT, WING WALLS AND RETAINING WALLS														
9.1 GENERAL														
Erosion or scour near abutment ?														
Damaged to caissons or piles?														
Movement of abutment ?														
Debris against abutment?														
Vegetation growing on or in abutment ?														
Scour near to retaining walls?														
Movement of retaining walls?														
Water leaking down through the expansion joint ?														
9.2 DRAINAGE SYSTEM														
Not enough weepholes ?														
Weepholes not working ?														
Water leaking through the abutment ?														

POSSIBLE PROBLEM	Problem		How bad?			How much?			Note or sketch reference	No of Spans =	
	No	Yes	Not very bad	Bad	Very serious	Not much	Some	A lot		Total Span (m) =	Vertical Clearance (m) =
9.3 CONCRETE ABUTMENT, WING WALLS AND RETAINING WALLS										<input checked="" type="checkbox"/> Tick Appropriate Lines	
Cracking ?										Construction Type	
Spalling ?										Single Span Slab	
Corrosion of reinforcement ?										Multi Span Slab	
Poor concrete ?										Single Span Girder+Slab	
9.4 MASONRY ABUTMENTS AND RETAINING WALLS										Multi Span Girder+Slab	
Cracking ?										Single Span Arch	
Bulging ?										Multi Span Arch	
Poor pointing ?										Single Span Truss	
Deterioration of bricks or stones ?										Multi Span Truss	
9.5 GABION ABUTMENTS AND RETAINING WALLS										Single Span Composite Construction	
Settlement or bulging of gabions ?										Multi Span Composite Construction	
Damage to gabion wires or ties?										Single Span Box Structure	
	All checked				Yes	No				Multi Span Box Structure	
10. EMBANKMENTS AND FILL IN FRONT OF ABUTMENTS										Single Span Arch + Slab	
10.1 GENERAL										Multi Span Arch + Slab	
Scour at base of slopes ?										Single Span Arch + Girder	
Slip of fill ?										Multi Span Arch + Girder	
Erosion of fill ?										Single Span Slab + Girder/Slab	
Cracking of road or embankment edge ?										Multi Span Slab + Girder/Slab	
10.2 PILED WALLS										Single Span Slab + Girder + Arch	
Forward movement ?										Multi Span Slab + Girder + Arch	
Deterioration of piles ?										Others	
10.3 STONE PITCHING SLOPE PROTECTION											
Cracking ?										Parapet	
Poor pointing ?										Masonry Parapets	
Scour or erosion at edge ?										RCC Parapets	
Pieces broken off ?										RCC Guard/Rails	
10.4 GABION SLOPE PROTECTION										Metalic Railings	
Too much movement of gabions ?										Crash Barrier	
Damage to gabion wires or ties?										Others	
10.5 RIP- RAP SLOPE PROTECTION											
Rip-rap being washed away ?										Passage	
Bed settlement ?										Normal River	
	All checked				Yes	No				Flood Relief Channels	
11. BED PROTECTION										Irrigation Channel (Canal-Distrib)	
11.1 GENERAL										Railway	
Large holes in the river bed ?										Roadway	
11.2 STONE PITCHING OR CONCRETE BED PROTECTION AND APRONS										Others	
Scour at edge ?											
Cracking ?											
Spalling or stones missing ?											

POSSIBLE PROBLEM	Problem		How bad?			How much?			Note or sketch reference	No of Spans =	
	No	Yes	Not very bad	Bad	Very serious	Not much	Some	A lot		Total Span (m) =	Vertical Clearance (m) =
Erosion of surface ?										Total Span (m) =	
Corrosion of reinforcement ?										Vertical Clearance (m) =	
11.3 GABION BED PROTECTION AND APRONS										Total Deck width (m) =	
Gabions broken away from pier or abutment ?										Clear Width (m) =	
Damaged to wires or ties ?											
11.4 RIP-RAP BED PROTECTION											
Loss of rip-rap ?											
All checked Yes No											
12. PIERS											
12.1 GENERAL											
Scour near base of pier ?									Material Type		
Damage to caissons or piles ?									Concrete Slab		
Movement of pier ?									Concrete Girder + Slab		
Impact damage ?									Prestressed Girders + Slab		
Debris against pier ?									Steel Girders + Slab		
Vegetation growing on pier ?									Masonry for Arches		
Water leaking past expansion joint ?									Slab + Masonry		
12.2 CONCRETE PIERS									Girders + Masonry		
Cracking ?									Slab + Girder/Slab		
Spalling ?									Slab + Girder + Masonry		
Corrosion of reinforcement ?									Steel Sheets + Slabs + Steel Girder		
Poor concrete ?									Others		
12.3 MASONRY PIERS											
Cracking ?									Abutment and Pier Material		
Poor pointing ?									Stone Masonry		
Deterioration of masonry ?									Brick Masonry		
All checked Yes No									Mass Concrete		
									Reinforced Concrete		
									Columns		
									Foundation Type		
									Spread Footing		
									Piles		
									Caissons		
									Others		

NOTES

1. Tick one box under the columns of **problem, How bad and How much** which ever applicable, Otherwise cross all those complete sections which are not pertinent to the bridge.
2. If you could not get close enough to check any item properly mark in the first column.
Total number of item not seen
3. Does the condition of the structure warrant that the structure expert to visit the site.
 Yes No
4. Attach two photographs, One showing the top road surface and the other showing the side elevation
Additional photographs showing the extent of damages may also be added.
5. For instructions on how to fill the form refer to **Guide line for Inspection of Bridge**. For further queries DD/AD (Maintenance) may refer to Structural Expert NHA, Islamabad.

ANNEXURE - B

BRIDGE INSPECTION FORMS (completed)

(sample)

SPECIMEN FOR GUIDANCE

ANNEX-B



NATIONAL HIGHWAY AUTHORITY BRIDGE INSPECTION REPORT (Span > 6.5 meters)

Form No. 2002/B/1

Province	PUNJAB
Highway No	N-5
Bridge No	B.1227/2
Side	

Bridge Name: CHABLAT BRIDGE Crossing: Storm Water Nullah
 Kilometer: 132.7 on HASSANABDAL (Town/village) To BURHAN (Town/ Village)
 Inspection Date: 10 Feb 2002 Inspected By: AD. KARIM Telp. 345678

POSSIBLE PROBLEM	Problem		How bad?			How much?			Note or sketch reference	No of Spans = 3	
	No	Yes	Not very bad	Bad	Very serious	Not much	Some	A lot		Total Span (m) = 90	Vertical Clearance (m) = 6.2
1. ROAD SURFACE NEAR BRIDGE										<input checked="" type="checkbox"/> Fill in the Appropriate Figure 	
1.1 GENERAL <input checked="" type="checkbox"/> Tick Appropriate Column										4 DRAINS BLOCKED POOR DRAINAGE	
Bumpy road surface ?	<input checked="" type="checkbox"/>										
Badly built road	<input checked="" type="checkbox"/>										
drainge near bridge?	<input checked="" type="checkbox"/>										
Blocked or damaged road drains ?	<input checked="" type="checkbox"/>										
Water on the deck ?	<input checked="" type="checkbox"/>										
Blocked or damaged deck drains ?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						
All checked Yes <input checked="" type="checkbox"/> No											
2. BRIDGE SURFACE										PAINT COMING OFF RUST STARTED	
2.1 BITUMEN SURFACE OVER BRIDGE											
Surface breaking up or lifting off ?	<input checked="" type="checkbox"/>										
Cracking above joints ?		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			
2.2 CONCRETE SURFACE											
Cracking ?											
Spalling ?											
Reinforcement exposed ?											
Poor concrete ?											
Wear of surface ?											
2.3 KERBS FOOTHPATHS											
Damaged or loose Kerbs ?	<input checked="" type="checkbox"/>										
Damaged footpaths ?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>			
All checked Yes <input checked="" type="checkbox"/> No											
3. PARAPETS, RAILINGS AND GUARD RAILS											
3.1 GENERAL											
Impact damage ?	<input checked="" type="checkbox"/>										
Loose or damaged fixings ?	<input checked="" type="checkbox"/>										
Loose post base ?	<input checked="" type="checkbox"/>										
3.2 STEEL PARAPETS											
Damaged galvanising or paint?		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			
Corrosion ?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>			
3.3 CONCRETE PARAPETS											
Cracking ?											
Spalling ?											
Corrosion of reinforcement ?											
Poor concrete ?											
3.4 MASONRY PARAPETS											
Cracking ?											

POSSIBLE PROBLEM	Problem		How bad?			How much?			Note or sketch reference	No of Spans =					
	No	Yes	Not very bad	Bad	Very serious	Not much	Some	A lot		Total Span (m) =	Vertical Clearance (m) =	Total Deck width (m) =	Clear Width (m) =		
Movement or bending of parapet ?									Expansion Joints need extensive repairs and cleaning	SINGLE ARCH SPAN					
Poor pointing ?															
Deterioration of the bricks or stone work ?															
3.5 EXPANSION JOINTS															
Damage to concrete of deck end or ballast wall near joint ?		✓		✓			✓								
Debris or vegetation in joint ?		✓			✓			✓							
Loose or damaged fixings ?		✓		✓			✓								
Damage or corrosion to metal parts ?		✓	✓			✓									
Damage to rubber waterbars?		✓			✓			✓							
All checked			Yes			No					MULTI ARCH SPAN				
4. THE RIVER															
4.1 BLOCKAGES IN WATERWAY PASSAGE															
Debris against piers or abutments ?	✓								Some young trees need cleaning	SINGLE SPAN TRUSS					
Remains of old bridges under or upstream of the bridge ?	✓														
Fencing or buildings under bridge ?	✓														
Trees or bushes growing under bridge ?		✓	✓				✓								
4.2 CHANGE OF RIVER PATH															
River changing path upstream from bridge ?		✓	✓				✓								
New islands forming upstream of bridge ?	✓														
4.3 RIVER TRAINING WORKS															
River attack beyond the upstream end of the river training works ?		✓			✓	✓					Note 1 Below	MULTI SPAN TRUSS			
Loss of rip - rap ?		✓			✓			✓							
Damage to gabions ?															
All checked			Yes			No			R.C.C SLAB BRIDGE						
5. SUPER STRUCTURE															
5.1 GENERAL															
Impact damage to beams, girders, trusses or bracings ?	✓								NOTE 1 Chablat Abutment } Extensive Erosion Burhan Abutment }	FOOTPATH KERB					
Debris or vegetation on beams, girders, trusses or bracings or in joints ?		✓		✓				✓							
Water coming through the deck ?		✓	✓				✓								
Water from the deck drainage flowing onto girders, trusses, beams or bracing ?		✓	✓				✓								
Not enough headroom for over bridge ?															
MIN HEADROOM.....															
If the road has been resurfaced															

POSSIBLE PROBLEM	Problem		How bad?			How much?			Note or sketch reference	No of Spans =			
	No	Yes	Not very bad	Bad	Very serious	Not much	Some	A lot		Total Span (m) =	Vertical Clearance (m) =	Total Deck width (m) =	Clear Width (m) =
5.2 CONCRETE BEAMS													
Cracking ?	✓												
Spalling ?	✓												
Corrosion of reinforcement ?	✓												
Poor concrete ?	✓												
5.3 STEEL GIRDERS AND BRACINGS													
Deterioration of paint or galvanising ?													
Corrosion ?													
Bends in webs, flanges, stiffeners or bracings ?													
Loose bolts or rivets ?													
Cracking ?													
5.4 STEEL TRUSSES													
Deterioration of paint or galvanising ?													
Corrosion ?													
Bends in truss members ?													
Bent or damaged joints ?													
Bent or damaged bracings ?													
Loose bolts or rivets ?													
Cracking of steel members ?													
	All checked			Yes	✓	No							
6. UNDERSIDE OF DECK										<p>Note 2 Below</p>			
6.1 CONCRETE													
Cracking ?		✓		✓				✓					
Spalling ?	×												
Corrosion of reinforcement ?	×												
Poor concrete ?	×												
Not enough cover to reinforcement ?	×												
6.2 STEEL													
Deterioration of paint or galvanising ?													
Corrosion ?													
Bends in stringers or plates ?													
Loose bolts or rivets ?													
Cracking ?													
	All checked			Yes	✓	No		✓					
7. BEARINGS										<p>NOTE 2 Crack in cross beam (0.5mm wide) in 1st pier from CHABLAT Abutment</p>			
7.1 ALL BEARINGS													
Debris or vegetation around bearings ?		✓	✓					✓					
Bad drainage to bearing shelf ?		✓	✓					✓					
Not enough room for the bridge span to move ?		✓											
Bearing not seated properly ?	✓												
Bridge span not seated properly on bearing ?	✓												
Damaged bedding mortar ?	✓												

POSSIBLE PROBLEM	Problem		How bad?			How much?			Note or sketch reference	No of Spans =	
	No	Yes	Not very bad	Bad	Very serious	Not much	Some	A lot		Total Span (m) =	Vertical Clearance (m) =
7.2 RUBBER BEARINGS											
Splitting, tearing or cracking of rubber ?		✓	✓					✓			
Damaged or loose bolts or pins at fixed bearings ?	✓										
7.3 METAL BEARINGS											
Parts not properly seated ?											
Parts not free to move ?											
Problem with the lubrication system ?											
Sliding surfaces damaged ?											
Cracks or bends in metal parts ?											
Corrosion of metal parts ?											
7.4 EARTHQUAKE RESTRAINTS											
Damaged or loose earthquake restraints?		✓		✓					✓		
	All checked			Yes	✓	No					
8. MASONRY ARCHES											
Change of shape of arch ?											
Cracking of arch barrel ?											
Cracking or bulging of spandrel walls ?											
Spandrel walls separating from arch ?											
Spalling of stones or bricks ?											
Poor pointing ?											
Water leaking through arch ?											
Scour under arch foundations ?											
	All checked			Yes		No					
9. ABUTMENT, WING WALLS AND RETAINING WALLS											
9.1 GENERAL											
Erosion or scour near abutment ?		✓			✓			✓			
Damaged to caissons or piles?	✓										
Movement of abutment ?	✓										
Debris against abutment?		✓	✓		✓						
Vegetation growing on or in abutment ?		✓									
Scour near to retaining walls?		✓									
Movement of retaining walls?	✓										
Water leaking down through the expansion joint ?		✓									
9.2 DRAINAGE SYSTEM											
Not enough weepholes ?	✓										
Weepholes not working ?		✓	✓					✓			
Water leaking through the abutment ?	✓										
										PLAN RIGHT ANGLE BRIDGE Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 	
										PLAN SKEW BRIDGE Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 	
										2m Scour near Abutment - Chablat-Abutment	

POSSIBLE PROBLEM	Problem		How bad?			How much?			Note or sketch reference	No of Spans =	
	No	Yes	Not very bad	Bad	Very serious	Not much	Some	A lot		Total Span (m) =	Vertical Clearance (m) =
9.3 CONCRETE ABUTMENT, WING WALLS AND RETAINING WALLS										<input checked="" type="checkbox"/> Tick Appropriate Lines	
Cracking ?		✓	✓			✓				Construction Type	
Spalling ?		✓	✓				✓			Single Span Slab	
Corrosion of reinforcement ?	✓									Multi Span Slab	
Poor concrete ?		✓	✓				✓			Single Span Girder+Slab	
9.4 MASONRY ABUTMENTS AND RETAINING WALLS										Multi Span Girder+Slab	✓
Cracking ?										Single Span Arch	
Bulging ?										Multi Span Arch	
Poor pointing ?										Single Span Truss	
Deterioration of bricks or stones ?										Multi Span Truss	
9.5 GABION ABUTMENTS AND RETAINING WALLS										Single Span Composite Construction	
Settlement or bulging of gabions ?										Multi Span Composite Construction	
Damage to gabion wires or ties?										Single Span Box Structure	
	All checked			Yes	No					Multi Span Box Structure	
10. EMBANKMENTS AND FILL IN FRONT OF ABUTMENTS										Single Span Arch + Slab	
10.1 GENERAL										Multi Span Arch + Slab	
Scour at base of slopes ?		✓		✓				✓		Single Span Arch + Girder	
Slip of fill ?	✓									Multi Span Arch + Girder	
Erosion of fill ?		✓		✓				✓		Single Span Slab + Girder/Slab	
Cracking of road or embankment edge ?	✓									Multi Span Slab + Girder/Slab	
10.2 PILED WALLS										Single Span Slab + Girder + Arch	
Forward movement ?										Multi Span Slab + Girder + Arch	
Deterioration of piles ?										Single Span Slab + Girder + Arch	
10.3 STONE PITCHING SLOPE PROTECTION										Multi Span Slab + Girder + Arch	
Cracking ?		✓	✓				✓			Others	
Poor pointing ?		✓		✓				✓			
Scour or erosion at edge ?		✓		✓				✓			
Pieces broken off ?		✓	✓				✓				
10.4 GABION SLOPE PROTECTION											
Too much movement of gabions ?											
Damage to gabion wires or ties?											
10.5 RIP- RAP SLOPE PROTECTION											
Rip-rap being washed away ?		✓		✓				✓			
Bed settlement ?	✓										
	All checked			Yes	No						
11. BED PROTECTION											
11.1 GENERAL											
Large holes in the river bed ?		✓		✓				✓			
11.2 STONE PITCHING OR CONCRETE BED PROTECTION AND APRONS											
Scour at edge ?											
Cracking ?											
Spalling or stones missing ?											
										Parapet	
										Masonry Parapets	
										RCC Parapets	
										RCC Guard/Rails	
										Metalic Railings	✓
										Crash Barrier	
										Others	
										Passage	
										Normal River	
										Flood Relief Channels	✓
										Irrigation Channel (Canal-Distrib)	
										Railway	
										Roadway	
										Others	

POSSIBLE PROBLEM	Problem		How bad?			How much?			Note or sketch reference	
	No	Yes	Not very bad	Bad	Very serious	Not much	Some	A lot		
Erosion of surface ?	<input checked="" type="checkbox"/>									
Corrosion of reinforcement ?	<input checked="" type="checkbox"/>									
11.3 GABION BED PROTECTION AND APRONS										
Gabions broken away from pier or abutment ?	<input checked="" type="checkbox"/>									
Damaged to wires or ties ?	<input checked="" type="checkbox"/>									
11.4 RIP-RAP BED PROTECTION										
Loss of rip-rap ?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
		All checked			Yes	<input checked="" type="checkbox"/>	No			
12. PIERS										
12.1 GENERAL										
Scour near base of pier ?		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		
Damage to caissons or piles ?	<input checked="" type="checkbox"/>									
Movement of pier ?	<input checked="" type="checkbox"/>									
Impact damage ?	<input checked="" type="checkbox"/>									
Debris against pier ?		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		
Vegetation growing on pier ?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			
Water leaking past expansion joint ?		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			
12.2 CONCRETE PIERS										
Cracking ?	<input checked="" type="checkbox"/>									
Spalling ?	<input checked="" type="checkbox"/>									
Corrosion of reinforcement ?	<input checked="" type="checkbox"/>									
Poor concrete ?	<input checked="" type="checkbox"/>									
12.3 MASONRY PIERS										
Cracking ?										
Poor pointing ?										
Deterioration of masonry ?										
		All checked			Yes	<input checked="" type="checkbox"/>	No			

No of Spans =	
Total Span (m) =	
Vertical Clearance (m) =	
Total Deck width (m) =	
Clear Width (m) =	
Material Type	
Concrete Slab	
Concrete Girder + Slab	
Prestressed Girders + Slab	<input checked="" type="checkbox"/>
Steel Girders + Slab	
Masonry for Arches	
Slab + Masonry	
Girders + Masonry	
Slab + Girder/Slab	
Slab + Girder + Masonry	
Steel Sheets + Slabs + Steel Girder	
Others	
Abutment and Pier Material	
Stone Masonry	
Brick Masonry	
Mass Concrete	
Reinforced Concrete	<input checked="" type="checkbox"/>
Columns	
Foundation Type	
Spread Footing	
Piles	<input checked="" type="checkbox"/>
Caissons	
Others	

NOTES

1. Tick one box under the columns of **problem, How bad and How much** which ever applicable, Otherwise cross all those complete sections which are not pertinent to the bridge.
2. If you could not get close enough to check any item properly mark in the first column.
Total number of item not seen
3. Does the condition of the structure warrant that the structure expert to visit the site.
4. Attach two photographs, One showing the top road surface and the other showing the side elevation
Additional photographs showing the extent of damages may also be added.
5. For instructions on how to fill the form refer to **Guide line for Inspection of Bridge**. For further queries DD/AD (Maintenance) may refer to Structural Expert NHA, Islamabad.

GUIDE LINE
FOR
INSPECTION OF BRIDGES

Following items of Bridge need to be checked.

1. Approaches

- a. Condition of pavement surface (report unevenness settlement, cracking, pot holes, etc.)
- b. Side slopes (report pitched or unpitched, condition of pitching/turfing, any signs of slope failure, etc.)
- c. Erosion of embankment by rain cuts or any other damage to embankment
- d. Approach slab (report settlement, cracks, movement, etc)
- e. Approach geometrics (report whether it satisfies the standards as in force)

2. Protective Works

- a. Type (mention whether guide bund or protection around abutments or spurs).
- b. Report damage of the layout, cross-section profile (check whether the layout and the cross section are in order).
- c. Report condition of slope pitching, apron and toe walls indicating the nature of damage if any (check for proper slope, thickness of pitching in the slope, width and thickness of apron, erosion of toe walls, etc.)
- d. Report condition of floor protection works, indicate nature of damage if any (condition of impervious floor, flexible apron, curtain walls, etc.)
- e. Extent of scour (report any abnormal scour)

3. Waterway

- a. Report presence of obstruction, undergrowth, etc.
- b. Report maximum observed scour and location and compare with the design values.
- c. Report any abnormal change in flow pattern
- d. Report maximum flood level observed during the year and mark the same on the pier/abutment both on the U/S and D/S.
- e. Report abnormal afflux if any
- f. Report adequacy of waterway

4. Foundations

- a. Report settlement, if any
- b. Report cracking, disintegration, decay, erosion, cavitation, etc.
- c. Report damage due to impact of floating bodies, boulders, etc.
- d. For subways report seepage if any, damage to the foundations, etc.

5. Substructure (piers, abutments and wing walls)

- a. Report efficiency of drainage of the backfill behind abutments (check functioning of weep holes, evidence of moisture on abutment faces, etc.)
- b. Report cracking, disintegration, etc.
- c. For subways report condition of side retaining walls like cracking, disintegration, etc. and seepage, if any

6. Bearings

a. **Metallic bearings**

- 1) Report general condition (check rusting, cleanliness, seizing of plates)
- 2) Functioning (report excessive movement, tilting, jumping off guides)
- 3) Greasing/oil bath (report date of last greasing/oil bath and whether to be redone or not)
- 4) Report cracks in supporting member (abutment cap, pier cap, pedestal)
- 5) Report effectiveness of anchor bolts (check whether they are in position and tight)

b. **Elastomeric bearings**

- 1) Report condition of pads (oxidation, creep, flattening, bulging, splitting)
- 2) Report general cleanliness

c. **Concrete bearings**

- 1) Report any signs of distress (cracking, spalling, disintegrating)
- 2) Report any excessive tilting

7. Superstructure

a. **Reinforced concrete and prestressed concrete members**

- 1) Report spalling, disintegration or honey-combing, etc.
- 2) Report cracking (pattern, location, explain preferably by plotting on sketch)
- 3) Report corrosion of reinforcements if any
- 4) Report damages if any due to moving vehicles
- 5) Report condition of articulation (cracks if any)
- 6) Report perceptible vibration, if any
- 7) Report excessive deflections or loss of camber if any (measure at same point each time)
- 8) Report cracks in end anchorage zone (for prestressed concrete members)
- 9) Report deflection at central hinge, tip of cantilever for cantilever bridges

b. **Steel members**

- 1) Report condition of paint
- 2) Report corrosion if any
- 3) Report perceptible vibrations, if any
- 4) Report on alignment of members

- 5) Report condition of connection (adequacy, looseness of rivets, bolts or worn out welds, report specially on connection of stringers, to cross girders, cross girders to main girders, gussets or splices, etc.)
- 6) Report camber and deflection
- 7) Report buckling, if any
- 8) Report on the cleanliness of members and joints (check choking of drainage holes provided in the bottom booms)

c. Masonry arches

- 1) Report condition of joints mortar, pointing masonry, etc.
- 2) Profile report flattening by observing rise of the arch at center and quarter points
- 3) Report cracks if any (indicate location, pattern, extent, depth explain by sketches)
- 4) Check drainage of spandrel fillings (report bulging of spandrel walls if any)
- 5) Check growth of vegetation

d. Timber members

- 1) Report condition of paint
- 2) Check decay, wear and tear, structural defects needing immediate replacement, if any
- 3) Report condition of joints, splices, spikes, etc.
- 4) Report excessive sag, if any

e. Suspension bridges

- 1) Report condition of cables
- 2) Report condition of suspenders and their connectors
- 3) Report condition of structural steel
- 4) Report condition of painting
- 5) Report excessive oscillations if any requiring need of guy ropes
- 6) Report looseness of joints, bolts, rivets, welds
- 7) Report condition of anchors, evidence of movement
- 8) Report condition of towers and saddles (verticality, lateral support)

8. Expansion Joint

- a. Functioning (report crack in the existing gap and approximate temperature)
- b. Report condition of sealing material (for neoprene sealing material for splitting, oxidation, creep, flattening, bulging and for bitumen filler, check for hardening, cracking, etc)
- c. Report secureness of the joints
- d. Top sliding plate (report corrosion, damage to welds, etc.)
- e. Locking of joints (report locking of joints especially for finger type expansion joint)
- f. Check for debris in open joints
- g. Report rattling if any

9. Wearing Coat (concrete/bitumen)

- a. Report surface condition (cracks, spalling, disintegration, pot holes, etc.)
- b. Report evidence of wear (tell tale rings, check for thickness as against actual thickness, report date of last inspection)

10. Drainage Spouts

- a. Check clogging, deterioration and damage, if any
- b. Check the projection of the spout on the underside (see whether structural members are being affected)
- c. Report adequacy thereof
- d. For subway report about adequacy of pumping arrangement, etc.

11. Handrails

- a. Report general condition, check expansion gaps, missing parts, if any, etc.
- b. Report damage due to collision
- c. Check alignment (report any abruptness in profile)

12. Footpaths

- a. Report general condition (damage due to mounting of vehicles)
- b. Report missing footpath slabs

13. Utilities

- a. Report leakage of water and sewage pipes
- b. Report any damage to telephone and electric cables
- c. Report condition of lighting facilities
- d. Report damages due to any other utilities

14. Bridge Number

- a. Report condition of painting

15. Aesthetics

- a. Report any visual intrusion (bill boards, paints on structural members, etc.)

CONCRETE STRUCTURES

CAUSES OF DETERIORATION AND REHABILITATION

Causes of Damage

1. Quality of Constituents of Concrete itself:

- a) Cement
- b) Aggregates
- c) Water
- d) Additives

2. Environmental Effects:

- a) Corrosion/chloride attack/sulphate attack
- b) Alkali-aggregate reaction
- c) Marine conditions/sea environment
- d) Weathering.
 - * Thermal variations
 - * Sand abrasion
 - * Waves
 - * Rain/humidity

3. Foundation problems:

- a) Settlements/Differential settlements
- b) Variation in subsoil water level
- c) Ground movements

4. Construction Errors:

- a) Poor quality concrete
- b) Form work/false work problems
- c) Inadequate compaction
- d) Incorrect detailing of reinforcement
- e) Inadequate and delayed curing
- f) Excessive construction loads

5. Design Errors:

- a) Design load underestimated
- b) Under-design/strength overestimated
- c) Omission of appropriate joints:
- d) Construction joints
- e) Movement joints
- f) Unacceptable cold joints
- g) Unaccounted internal stresses:
 - * Thermal
 - * Shrinkage
 - * Creep
 - * Unforeseen load conditions

6. **Unexpected or Unprecedented Load Conditions:**

- a) Illegal overloading/speeding
- b) Unusual floods
- c) Unusual earthquakes

Types of Damage

1. Spalling
2. Swelling/bulging
3. Crumbling
4. Cracking and spalling due to Corrosion of Reinforcement.
5. Crack due to sulphate attack:
6. Cracking due to Alkali-Aggregate Reaction
7. Surface erosion/abrasion.
8. Craze (surface cracking generally within laitance thickness).
9. Plastic shrinkage and plastic settlement cracks
10. Early thermal movement cracks ; caused by: ___lack of movement joints
___presence of constraints to free movement
11. Drying shrinkage cracks
12. Cracks due to overstressing of steel and concrete.

Methods of Rehabilitation

1. Outright Replacement
2. Repair First take necessary precautions of closing traffic if required, and temporarily supporting the structure carefully and then
 - a) Remove unsound concrete,
 - b) Clean reinforcement steel all around,
 - c) Restore removed concrete,
 - d) Seal crack

3. Strengthening

- (a) Bolts, anchors, additional structural steel
- (b) Externally bonded steel plates
- (c) External prestressing

4. Protection:

- (a) Protection Against Corrosion of Steel, Chloride Attack, and Carbonation Effect:
- (b) Protection Against Sulphate Attack:
- (c) Protection Against Alkali-aggregate reaction:

5. Special methods:

- (a) Replacement of expansion-joints/bearings.
- (b) Replacement Operations involving heavy-lifting and massive sliding/moving.
- (c) Ground and rock anchoring to stabilize unstable abutments, piers, walls.
- (d) Strengthening of foundations (various methods)

APPENDIX “D”

TERMS OF REFERENCE

FOR

ROAD STAKEHOLDER CONSULTATIONS

(Pages 1 - 3)

TERMS OF REFERENCE FOR ROAD STAKEHOLDER CONSULTATIONS

A. Background

Roads are increasingly viewed by the National Highway Authority (NHA) management as a *service* and a *business*. A new NHA vision has been articulated, and approved by the Chief Executive in February 2001. The vision states that *NHA must grow into an efficient service provider to road users in Pakistan for safe and comfortable travel on National Highways and Motorways. From an expansion phase it must transition into a consolidation phase and seeks to maintain its road assets exceeding Rs 600 billion.*

As part of its progressive commercialization, NHA plans to institutionalize regular stakeholder consultations at the Regional level, to elicit periodic road user feedback on its performance and to improve external accountability to its customers.

B. Objectives

1. To share information about the NHA vision, perspective development plans, annual maintenance programs and elicit comments from key stakeholders.
2. To better understand customer perspectives on the performance of NHA as a service provider/network operator and the key areas needing improvement.
3. To update performance indicators, to continuously assess program impact against a base line.
4. To report back on implementation of actions agreed at earlier consultations.

C. Stakeholders to Be Consulted

Fifty to sixty participants in each consultation representing the following major users of NHA's road network:

- , Truck and tanker operators and drivers
- , Inter-urban bus service operators and drivers
- , Wagon, taxi and hired car operators and drivers
- , Private car owners
- , Farmers/agricultural commodity producers
- , Representatives of road side communities
- , Chambers of Commerce, Industrial manufacturers and Traders
- , Petroleum company and refinery representatives
- , Freight forwarding/shipping agents
- , Insurance industry representatives
- , Emergency services representative (e.g., Edhi Foundation)
- , Vehicle manufacturers and repair workshop representatives
- , Women's groups

- , Other civil society and public interest organizations representatives, including national and provincial NGOs
- , Academia
- , Journalists/Media representatives
- , Local government and provincial government representatives

Each consultation may include observers from the following groups:

- , Traffic/Highway Police representatives
- , Toll Operators/O&M Contractors
- , Transport sector consulting firms representatives
- , Multilateral donor agencies representatives

D. Venue

Shall be decided each year in consultation with NHA Regional General Managers, preferably along the NHA network.

E. Frequency

Consultations will be held on alternate years in two provinces in each year as per the following schedule:

Punjab	3rd week of October
Sindh	4th week of October
NWFP	1st week of November
Baluchistan	2 nd week of November

F. Scope of Work

Third party facilitation will be provided (under a renewable annual contract) through a transport sector NGO, or a consulting firm with prior experience in this work. The facilitator in consultation with designated NHA staff will design consultation agenda, format, presentations and questionnaires. Unless otherwise agreed, each consultation would broadly cover a 5-hour “workshop-style” event comprising of a mix of plenary meetings, focus group discussions and/or structured questionnaires.

A questionnaire containing suggested performance indicators is attached as Annexure A.

G. Deliverables

1. Two number of facilitated Stakeholder Workshops/Consultation Events per year, in the various Regions of NHA.
2. A summary report of the consultation proceedings (including key issues and agreed dated action plan) to the Regional General Manager, with a copy to the Chairman, NHA.

PAKISTAN-Road Stakeholder Consultations

Survey Date: _____ Location: _____ Group: _____

DIMENSION	PERFORMANCE INDICATOR	LEVEL OF SATISFACTION 1 = High 4 = Low
Accessibility Mobility	, Travel time and its reliability , Adequacy of road user information , Hours of congestion delay per year	
Safety	, % accidents involving unprotected road users (pedestrians, cyclists, non-motorized traffic) , Time from incident to alert, to treatment (Hrs) , % of respondents that consider traffic injuries a public health problem	
Environment	, Population exposed to excessive emission levels (adverse health impact or air quality standards) , Population exposed to excessive noise levels (>65 dB)	
Equity	, Travel cost and travel time by user group, including women , Accident risk by user group , Surplus (deficit) of road expenditures relative to road user charges collected by region	
Community	, Satisfaction with number and type of feedback mechanisms	
Program Development	, Satisfaction with program development process	
Program Delivery	, Satisfaction with program delivery , Road administration costs for operations and maintenance , User delay costs associated with operations and maintenance	
Program Performance	, Satisfaction with ride quality , Satisfaction with road condition , Satisfaction with rest/service areas	

APPENDIX “E”

LIST OF KEY PERFORMANCE INDICATORS FOR NHA

(Pages 1 - 2)

LIST OF KEY PERFORMANCE INDICATORS FOR NHA

A. OUTCOME INDICATORS

- < Customer Satisfaction Index: (High = 1, Low =4)
- < Average Vehicle Operating Cost for standard commercial vehicle: Rupees per km; % change
- < Average Travel Time on main routes: minutes per 100 km; % change
- < Accidents: Number of Fatalities/Year (normalized for traffic); % change
- < Average Roughness: network IRI; % change
- < Network Condition: % in good; fair; poor

B. EFFICIENCY INDICATORS

- < Staffing: Number of Staff/100 2-lane km of network
- < Establishment Cost: % of total agency expenditure
- < Throw-Forward: as multiple of annual agency expenditure
- < Average cost/2-lane km for routine maintenance; and % change
- < Average cost/2-lane km for periodic maintenance; and % change
- < Average cost/2-lane km for rehabilitation; and % change
- < Average cost/2-lane km for new construction; and % change
- < Competitive Procurement: % of new works bid (by value)
- < Timeliness of delivery: % of contracts (by number) completed within 3 months of original completion date; average % delay on completed contracts

- < Timeliness of Reporting: agency Annual Report published : number of months after the close of Financial Year
- < Audited Financial Statements: aggregate value of qualifications

C. OUTPUT INDICATORS

- < % (or km) of network under routine maintenance
- < % (or km) of network conserved
- < % (or km) of network added
- < % (or km) of network for which capacity enhanced/widened
- < Average Annual Daily Traffic (or commercial traffic) by route; % growth
- < Toll Revenue Collected: Rupees; % of Stable Network Needs; % growth; % of total expenditure on network conservation

D. INPUT INDICATORS

- < Total Annual Expenditure: Rupees; % change
- < Annual Expenditure on Network Operations and Conservation: Rupees; % of Stable Network Needs; % growth; % of total agency expenditure
- < Annual Expenditure on Network Expansion: Rupees; % of budgeted; % growth over previous year; % of total agency expenditure
- < Agency expenditure on completing Ongoing works: Rupees; % of total expenditure
- < Value of new contracts awarded during year: Rupees
- < Average Toll Level: Rs/100 km; % change over previous year

APPENDIX “F”

TERMS OF REFERENCE

FOR

RMA FINANCIAL AUDIT

(Pages 1 - 4)

TERMS OF REFERENCE FOR RMA FINANCIAL AUDIT

A. Background

The current financial allocations for the operations and maintenance of National Highways are erratic and well below the levels needed to: (i) keep roads network in stable conditions, (ii) control vehicle overloading, and (iii) improve road safety over the long term. Therefore, to provide road users with a safe, efficiently operated and well maintained network a Road Maintenance Account (RMA) has been created which is currently managed by the National Highway Authority (NHA). Net receipts from all toll revenues collected from the users of National Highways and Motorways and funds from other sources specifically earmarked for Highways conservation are channeled through RMA for maintenance and operational improvements of Highways owned and administered by NHA. The guiding policies are embodied in the RMA Rules 2003. The procedures and operating practices are covered by Standard Operating Procedures (SOP) for RMA.

B. Audit Purpose

The purpose of this audit is to ensure that the Road Maintenance Account has been managed, administered, maintained and operated over the preceding financial period according to the National Highways and Strategic Roads Maintenance Account (RMA) Rules-2003. Good governance and accountability are enhanced when public sector entities prepare their own financial statements and independent auditors or legislative auditors, provide assurance to the users through the expression of an Opinion on the fair presentation of these statements.

C. Audit Objectives

The overall objective for the audit of RMA is to provide the NHA Executive Board, other users and the public at large with reasonable assurance and an audit opinion that the RMA resources are being used in accordance with the Rules and SOP, and the planned activities as envisaged in the annual RMA Program duly approved by the NHA Executive Board have been implemented.

D. Scope of Work

The audit shall examine the RMA books of accounts and recorded transactions therein following the International Auditing Standards (IAS) or other acceptable auditing standards. Express an opinion as to whether the financial statements taken as a whole, present fairly the financial position, results of its operation and sources and uses of cash are for the purposes of RMA and in conformity with the International Standards on Accounting applied on a consistent basis. The audit of RMA must cover, but is not necessarily limited to, the following:

1. Verification of Revenues and Monies Credited to the RMA Account

review and confirm whether accounting records are accurate and complete, and the deductions made by the revenue collecting contractors are in accordance with the terms of Agreements,

- , review internal audit reports and follow up thereon by the management,
- , obtain independent written confirmation from all revenue collecting contractors regarding the total monies collected by them and net amount deposited in the RMA during the financial year and report any un-reconciled item,
- , verify that accrued revenues and monies credited to the RMA form part of the authorized sources of the Fund, and tolls and other levies are according to the prescribed levels and conform with the stipulated upward/downward adjustment criteria, and
- , visit selected toll collection sites and ascertain the effectiveness of internal control procedures adopted by the contractors for collecting the toll, banking the amounts, reporting, and quality of staff employed.

2. Verification of Disbursements from the RMA

- , review and confirm whether disbursements are for the eligible expenditures, supported with documentary evidences,
- , review and confirm whether disbursements made for works/goods/services form part of the duly approved RMA Program, and conform with the priorities stipulated in the rules in force,
- , whether the laid down disbursement procedures are being followed,
- , whether goods and services are procured in accordance with the procurement guidelines through competitive procedures,
- , whether payments recorded as works/goods/services have been disbursed upon satisfactory completion (this will require a physical audit of 20% of finished works/goods/services by value, to be selected randomly by the auditors, to confirm the satisfactory completion of contract),
- , whether all transactions and balances of the RMA are in agreement with books of accounts and supporting documents, duly authorized and approved,
- , an analytical review of variances between the budgeted and actual, and
- , whether a proper inventory record of both moveable and immovable assets is being maintained and physical verification conducted at least once in a year.

3. Assessment of the Fund's Operating Procedures

- , Adequacy of the system of collecting, depositing and monitoring the Fund's revenues, against the following criteria: administrative simplicity, level of evasion, degree of accountability, speed of deposit; and any other criterion deemed important by the auditor. The auditor will, as necessary, make recommendations for improving the collection system including: streamlining current procedures to reduce any delays; steps necessary to minimize evasion; and removal or addition of the imposition of returns
- , Adequacy of the system of computer based financial control and management information against the following criteria: value for money, usefulness as a budgeting and planning tool, control mechanisms, quality of management information outputs, and disaster planning and recovery.
- , Adequacy of the system of disbursing monies for works/goods/services to contractors, goods providers and consultants, against the following criteria: administrative simplicity, degree of accountability, speed of payment; and any other criterion deemed important by the auditors.

E. Auditors Reports

The auditors shall produce an audit report, following to the extent possible, the suggested Outline of Audit Report attached as Annexure AA@to this TOR, within two months of submission of financial statements to them but not later than November 30th, of each calendar year.

The audit report shall contain comments, observations and an opinion on each of the items under Audit scope above, as well as general opinion on the RMA with emphasis on the quality of management information system (i.e., timely outputs, cost effectiveness etc.).

Before finalizing the audit report, the auditors will discuss their findings with the senior management of NHA responsible for overseeing operations of the RMA. The auditors will present or incorporate the responses in the audit report.

The auditors will submit the final audit report to the NHA Executive Board in ten (10) copies.

OUTLINE OF AUDIT REPORT

Report No. 1: A Short-Form Report

1. A statement as to the auditing standards applied in the conduct of the audit.
2. A statement as to whether the auditor has obtained all the information and explanations deemed necessary for fulfilling his duties.
3. An opinion as to whether proper books of account have been maintained and that the statements of accounts have been drawn up in conformity with International Standards on Accounting as accepted in Pakistan.
4. An opinion whether the financial statements are in agreement with the books of accounts.
5. An opinion whether the financial statements are in accordance with accounting policies enunciated in NHA Financial Manual and have been consistently applied.
6. An opinion as to whether the financial statements give a true and fair view of the Fund.

Report No. 2: A Long-Form Report

1. a summary of matters which came to the auditors attention during the course of the audit.
2. a review of internal control procedures and the related accounting and financial management systems with recommendations for their improvement where appropriate including strengthening of the institutional framework of the Fund.
3. A review of internal audit or internal auditor's reports and implementation of actions suggested by them,
4. a review of the findings of the technical audit (if carried out for the year).
5. a review of the duties and responsibilities of RAMD, RMA Revenue and Accounts Section, Staff professional capabilities and capacity as set out in the rules, with recommendations for improvements where appropriate.
6. a statement of integration and co-ordination within the organization.
7. comments on any other area, which the auditors deem appropriate.

APPENDIX “G”

TERMS OF REFERENCE

FOR

RMA TECHNICAL AUDIT

(Pages 1 - 2)

TERMS OF REFERENCE FOR RMA TECHNICAL AUDIT

A. Background

The current financial allocations for the operations and maintenance of National Highways are erratic and well below the levels needed to: (i) keep roads network in stable conditions, (ii) control vehicle overloading, and (iii) improve road safety over the long term. Therefore, to provide road users with a safe, efficiently operated and well maintained network a Road Maintenance Account (RMA) has been created which is currently managed by the National Highway Authority (NHA). Net receipts from all toll revenues collected from the users of National Highways and Motorways and funds from other sources specifically earmarked for Highways conservation are channeled through RMA for maintenance and operational improvements of Highways owned and administered by NHA. The guiding policies are embodied in the RMA Rules 2003. The procedures and operating practices are covered by Standard Operating Procedures (SOP) for RMA.

B. Audit Purpose

The overall purpose of this audit is to ensure that the Road Maintenance Account has been managed, administered, maintained and operated over the period under review according to the National Highway Authority Roads Maintenance Account Rules, 2003 and the SOP.

C. Audit Objectives

Specific objectives of the technical audit are to ascertain for the period under review:

1. Appropriate application Standard Operating Procedures, and
2. Satisfactory Performance of the Road Maintenance Account.

In particular, confirmation that the planned activities envisaged through the approved annual RMA programs during the review period have been satisfactorily implemented.

D. Scope of Work

The period of review is from ----- to -----.

To achieve the objectives described above, the auditors will carry out a detailed examination of the RMA rules, policies and procedures, and will carry out, as a minimum, the specific tasks outlined below.

1. verify the quality of the Collected Data, through a 5% random check;
2. verify the adequacy and security of the Central Database, in terms of data storage, retrieval and accessibility;

3. confirm the application of technically sound maintenance improvement standards, and reasonableness of the strategy and program analysis that formed the basis of the annual RMA program(s);
4. confirm the adequacy of the stakeholder consultations and measures adopted by NHA to address key issues emerging from the consultations;
5. verify compliance of the finally approved annual RMA program(s) with the criteria set out in the RMA Rules and SOP;
6. comment on the adequacy, efficiency, transparency and timeliness of the procurement process;
7. comment on the adequacy and timeliness of the construction/maintenance activities, in delivering on the RMA objectives, including the quality of the restored/ completed facilities, and supervision, monitoring and technical reporting arrangements – based on a detailed review of a 10% random sample of the completed facilities;
8. verify the accuracy of the reports provided on the key performance indicators; and
9. make specific recommendations for improvement.

E. Auditors Reports

The auditor shall prepare a technical audit report, which will include, inter alia, a review of compliance with approved rules, policies, standard operating procedure and criteria, and assessments relating to achievement of the objectives of the Road Maintenance Account. The auditor's report shall also contain comments, observations and recommendations on:

1. the RAMD annual report(s) on the policies and activities of the Fund during the review period;
2. adequacy of resources for maintenance of the road network and the structure of tolls and other levies;
3. efficiency of the Fund management in handling the day to day business;
4. formulation of policies and adoption of techniques for maintenance planning; and
5. any other areas, which the auditors deem, appropriate.

F. Timing and Reporting

The auditors shall complete the audit within two months of request to them by NHA but not later than November 30th of the calendar year. The auditors shall submit the final technical audit report to the NHA Executive Board in ten (10) copies.

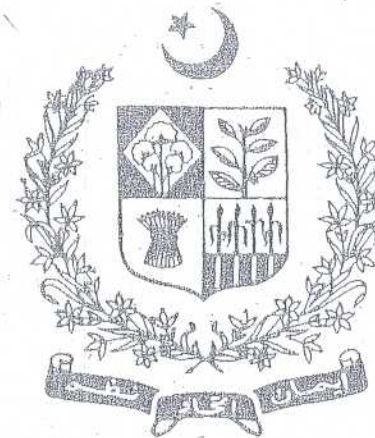
ANNEXURE – 3

The Public Procurement Rules, 2004

Government of Pakistan
Finance Division, Islamabad

Chairman

Public Procurement Rules



2004

The Gazette  of Pakistan

EXTRAORDINARY
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PART II

Statutory Notifications (S. R. O.)

GOVERNMENT OF PAKISTAN

FINANCE DIVISION

(Admn. and Coord. Wing)

NOTIFICATION

Islamabad, the 8th June, 2004

S. R. O. 432 (1)/2004.—In exercise of the powers conferred by section 26 of the Public Procurement Regulatory Authority Ordinance, 2002 (XXII of 2002), the Federal Government is pleased to make the following rules, namely:—

1. Short title and commencement.—(1) These rules may be called the Public Procurement Rules, 2004.

(2) They shall come into force at once.

GENERAL PROVISIONS

2. Definitions.—(1) In these rules, unless there is anything repugnant in the subject or context,—

(a) “bid” means a tender, or an offer, in response to an invitation, by a person, consultant, firm, company or an organization expressing his or its willingness to undertake a specified task at a price;

- (b) "bidder" means a person who submits a bid;
- (c) "competitive bidding" means a procedure leading to the award of a contract whereby all the interested persons, firms, companies or organizations may bid for the contract and includes both national competitive bidding and international competitive bidding;
- (d) "contractor" means a person, consultant, firm, company or an organization who undertakes to supply goods, services or works;
- (e) "contract" means an agreement enforceable by law;
- (f) "corrupt and fraudulent practices" includes the offering, giving, receiving, or soliciting of any thing of value to influence the action of a public official or the supplier or contractor in the procurement process or in contract execution to the detriment of the procuring agencies; or misrepresentation of facts in order to influence a procurement process or the execution of a contract, collusive practices among bidders (prior to or after bid submission) designed to establish bid prices at artificial, non-competitive levels and to deprive the procuring agencies of the benefits of free and open competition and any request for, or solicitation of anything of value by any public official in the course of the exercise of his duty;
- (g) "emergency" means natural calamities, disasters, accidents, war and operational emergency which may give rise to abnormal situation requiring prompt and immediate action to limit or avoid damage to person, property or the environment;
- (h) "lowest evaluated bid" means,—
- (i) a bid most closely conforming to evaluation criteria and other conditions specified in the bidding document; and
 - (ii) having lowest evaluated cost;
- (i) "Ordinance" means the Public Procurement Regulatory Authority Ordinance, 2002 (XXII of 2002);
- (j) "repeat orders" means procurement of the same commodity from the same source without competition and includes enhancement of contracts;

- (k) "supplier" means a person, consultant, firm, company or an organization who undertakes to supply goods, services or works; and
- (1) "value for money" means best returns for each rupee spent in terms of quality, timeliness, reliability, after sales service, up-gradeability, price, source, and the combination of whole-life cost and quality to meet the procuring agency's requirements.

(2) The expressions used but not defined in these rules shall have the same meanings as are assigned to them in the Ordinance.

3. **Scope and applicability.**—Save as otherwise provided, these rules shall apply to all procurements made by all procuring agencies of the Federal Government whether within or outside Pakistan.

4. **Principles of procurements.**—Procuring agencies, while engaging in procurements, shall ensure that the procurements are conducted in a fair and transparent manner, the object of procurement brings value for money to the agency and the procurement process is efficient and economical.

5. **International and inter-governmental commitments of the Federal Government.**—Whenever these rules are in conflict with an obligation or commitment of the Federal Government arising out of an international treaty or an agreement with a State or States, or any international financial institution the provisions of such international treaty or agreement shall prevail to the extent of such conflict.

6. **Language.**—(1) All communications and documentation related to procurements of the Federal Government shall either be in Urdu or English or both. Except where a procuring agency is situated outside the territories of Pakistan and procurements are to be made locally, the procuring agency may use the local language in addition to Urdu or English.

(2) Where the use of local language is found essential, the original documentation shall be in Urdu or English, which shall be retained on record; for all other purposes their translations in local language shall be used;

Provided that such use of local language ensures maximum economy and efficiency in the procurement.

(3) In case of the dispute reference shall be made to the original documentation retained on record.

7. **Integrity pact.**—Procurements exceeding the prescribed limit shall be subject to an integrity pact, as specified by regulation with approval of the Federal Government, between the procuring agency and the suppliers or contractors.

PROCUREMENT PLANNING

8. **Procurement planning.**—Within one year of commencement of these rules, all procuring agencies shall devise a mechanism, for planning in detail for all proposed procurements with the object of realistically determining the requirements of the procuring agency, within its available resources, delivery time or completion date and benefits that are likely to accrue to the procuring agency in future.

9. **Limitation on splitting or regrouping of proposed procurement.**—Save as otherwise provided and subject to the regulation made by the Authority, with the prior approval of the Federal Government, a procuring agency shall announce in an appropriate manner all proposed procurements for each financial year and shall proceed accordingly without any splitting or regrouping of the procurements so planned. The annual requirements thus determined would be advertised in advance on the Authority's website as well as on the website of the procuring agency in case the procuring agency has its own website.

10. **Specifications.**—Specifications shall allow the widest possible competition and shall not favour any single contractor or supplier nor put others at a disadvantage. Specifications shall be generic and shall not include references to brand names, model numbers, catalogue numbers or similar classifications. However if the procuring agency is convinced that the use of or a reference to a brand name or a catalogue number is essential to complete an otherwise incomplete specification, such use or reference shall be qualified with the words "or equivalent".

11. **Approval mechanism.**—All procuring agencies shall provide clear authorization and delegation of powers for different categories of procurement and shall only initiate procurements once approval of the competent authorities concerned has been accorded.

PROCUREMENT ADVERTISEMENTS

12. **Methods of advertisement.**—(1) Procurements over forty thousand rupees and up to the limit of one million rupees shall be advertised on the Authority's website in the manner and format specified by regulation by the Authority from time to time. These procurement opportunities may also be advertised in print media, if deemed necessary by the procuring agency.

(2) All procurement opportunities over one million rupees should be advertised on the Authority's website as well as in other print media or newspaper having wide circulation. The advertisement in the newspapers shall principally appear in at least two national dailies, one in English and the other in Urdu.

(3) In cases where the procuring agency has its own website it may also post all advertisements concerning procurement on that website as well.

(4) A procuring agency utilizing electronic media shall ensure that the information posted on the website is complete for the purposes for which it has been posted, and such information shall remain available on that website until the closing date for the submission of bids.

13. **Response time.**—(1) The procuring agency may decide the response time for receipt of bids or proposals (including proposals for pre-qualification) from the date of publication of an advertisement or notice, keeping in view the individual procurement's complexity, availability and urgency. However, under no circumstances the response time shall be less than fifteen working days for national competitive bidding and thirty working days for international competitive bidding from the date of publication of advertisement or notice. All advertisements or notices shall expressly mention the response time allowed for that particular procurement along with the information for collection of bid documents which shall be issued till a given date, allowing sufficient time to complete and submit the bid by the closing date:

Provided that no time limit shall be applicable in case of emergency.

(2) The response time shall be calculated from the date of first publication of the advertisement in a newspaper or posting on the website, as the case may be.

(3) In situations where publication of such advertisements or notices has occurred in both electronic and print media, the response time shall be calculated from the day of its first publication in the newspapers.

14. **Exceptions.**—It shall be mandatory for all procuring agencies to advertise all procurement requirements exceeding forty thousand rupees. However under following circumstances deviation from the requirement is permissible with the prior approval of the Authority,—

(a) the proposed procurement is related to national security and its publication could jeopardize national security objectives; and

- (b) the proposed procurement advertisement or notice or publication of it, in any manner, relates to disclosure of information, which is proprietary in nature or falls within the definition of intellectual property which is available from a single source.

PRE-QUALIFICATION, QUALIFICATION AND DISQUALIFICATION OF SUPPLIERS AND CONTRACTORS

15. **Pre-qualification of suppliers and contractors.**—(1) A procuring agency, prior to the floating of tenders, invitation to proposals or offers in procurement proceedings, may engage in pre-qualification of bidders in case of services, civil works, turnkey projects and in case of procurement of expensive and technically complex equipment to ensure that only technically and financially capable firms having adequate managerial capability are invited to submit bids. Such pre-qualification shall solely be based upon the ability of the interested parties to perform that particular work satisfactorily.

(2) A procuring agency while engaging in pre-qualification may take into consideration the following factors, namely:—

- (a) relevant experience and past performance;
- (b) capabilities with respect to personnel, equipment, and plant;
- (c) financial position;
- (d) appropriate managerial capability; and
- (e) any other factor that a procuring agency may deem relevant, not inconsistent with these rules.

16. **Pre-qualification process.**—(1) The procuring agency engaging in pre-qualification shall announce, in the pre-qualification documents, all information required for pre-qualification including instructions for preparation and submission of the pre-qualification documents, evaluation criteria, list of documentary evidence required by suppliers or contractors to demonstrate their respective qualifications and any other information that the procuring agency deems necessary for pre-qualification.

(2) The procuring agency shall provide a set of pre-qualification documents to any supplier or contractor, on request and subject to payment of price, if any.

Explanation.—For the purposes of this sub-rule price means the cost of printing and providing the documents only.

(3) The procuring agency shall promptly notify each supplier or contractor submitting an application to pre-qualify whether or not it has been pre-qualified and shall make available to any person directly involved in the pre-qualification process upon request, the names of all suppliers or contractors who have been pre-qualified. Only suppliers or contractors who have been pre-qualified shall be entitled to participate further in the procurement proceedings.

(4) The procuring agency shall communicate to those suppliers or contractors who have not been pre-qualified the reasons for not pre-qualifying them.

17. **Qualification of suppliers and contractors.**—A procuring agency, at any stage of the procurement proceedings, having credible reasons for or *prima facie* evidence of any defect in supplier's or contractor's capacities, may require the suppliers or contractors to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not:

Provided that such qualification shall only be laid down after recording reasons therefor in writing. They shall form part of the records of that procurement proceeding.

18. **Disqualification of suppliers and contractors.**—The procuring agency shall disqualify a supplier or contractor if it finds, at any time, that the information submitted by him concerning his qualification as supplier or contractor was false and materially inaccurate or incomplete.

19. **Blacklisting of suppliers and contractors.**—The procuring agencies shall specify a mechanism and manner to permanently or temporarily bar, from participating in their respective procurement proceedings, suppliers and contractors who either consistently fail to provide satisfactory performances or are found to be indulging in corrupt or fraudulent practices. Such barring action shall be duly publicized and communicated to the Authority:

Provided that any supplier or contractor who is to be blacklisted shall be accorded adequate opportunity of being heard.

METHODS OF PROCUREMENT

20. **Principal method of procurement.**—Save as otherwise provided hereinafter, the procuring agencies shall use open competitive bidding as the principal method of procurement for the procurement of goods, services and works.

21. **Open competitive bidding.**—Subject to the provisions of rules 22 to 37 the procuring agencies shall engage in open competitive bidding if the cost of the object to be procured is more than forty thousand rupees.

22. **Submission of bids.**—(1) The bids shall be submitted in a sealed package or packages in such manner that the contents are fully enclosed and cannot be known until duly opened.

(2) A procuring agency shall specify the manner and method of submission and receipt of bids in an unambiguous and clear manner in the bidding documents.

23. **Bidding documents.**—(1) Procuring agencies shall formulate precise and unambiguous bidding documents that shall be made available to the bidders immediately after the publication of the invitation to bid.

(2) For competitive bidding, whether open or limited, the bidding documents shall include the following, namely:—

- (a) invitation to bid;
- (b) instructions to bidders;
- (c) form of bid;
- (d) form of contract;
- (e) general or special conditions of contract;
- (f) specifications and drawings or performance criteria (where applicable);
- (g) list of goods or bill of quantities (where applicable);
- (h) delivery time or completion schedule;
- (i) qualification criteria (where applicable);
- (j) bid evaluation criteria;
- (k) format of all securities required (where applicable);
- (l) details of standards (if any) that are to be used in assessing the quality of goods, works or services specified; and
- (m) any other detail not inconsistent with these rules that the procuring agency may deem necessary.

(3) Any information that becomes necessary for bidding or for bid evaluation, after the invitation to bid or issue of the bidding documents to the prospective bidders, shall be provided in a timely manner and on equal opportunity

basis. Where notification of such change, addition, modification or deletion becomes essential, such notification shall be made in a manner similar to the original advertisement.

(4) Procuring agencies shall use standard bidding documents as and when notified by regulation by the Authority:

Provided that bidding documents already in use of procuring agencies may be retained in their respective usage to the extent they are not inconsistent with these rules, and till such time that the standard bidding documents are specified by regulations.

(5) The procuring agency shall provide a set of bidding documents to any supplier or contractor, on request and subject to payment of price, if any.

Explanation.—For the purpose of this sub-rule price means the cost of printing and providing the documents only.

24. **Reservations and preference.**—(1) Procuring agencies shall allow all prospective bidders to participate in procuring procedure without regard to nationality, except in cases in which any procuring agency decides to limit such participation to national bidders only or prohibit participation of bidders of some nationalities, in accordance with the policy of Federal Government.

(2) Procuring agencies shall allow for a preference to domestic or national suppliers or contractors in accordance with the policies of the Federal Government. The magnitude of price preference to be accorded shall be clearly mentioned in the bidding documents under the bid evaluation criteria.

25. **Bid security.**—The procuring agency may require the bidders to furnish a bid security not exceeding five per cent of the bid price.

26. **Bid validity.**—(1) A procuring agency, keeping in view the nature of the procurement, shall subject the bid to a bid validity period.

(2) Bids shall be valid for the period of time specified in the bidding document.

(3) The procuring agency shall ordinarily be under an obligation to process and evaluate the bid within the stipulated bid validity period. However under exceptional circumstances and for reason to be recorded in writing, if an extension is considered necessary, all those who have submitted their bids shall be asked to extend their respective bid validity period. Such extension shall be for not more than the period equal to the period of the original bid validity

- (4) Bidders who,—
- (a) agree to extension of their bid validity period shall also extend the validity of the bid bond or security for the extended period of the bid validity;
 - (b) agree to the procuring agency's request for extension of bid validity period shall not be permitted to change the substance of their bids; and
 - (c) do not agree to an extension of the bid validity period shall be allowed to withdraw their bids without forfeiture of their bid bonds or securities.

27. **Extension of time for submission of bids.**—Where a procuring agency has already prescribed a deadline for the submission of bids and due to any reason the procuring agency finds it necessary to extend such deadline, it shall do so only after recording its reasons in writing and in an equal opportunity manner. Advertisement of such extension in time shall be done in a manner similar to the original advertisement.

OPENING, EVALUATION AND REJECTION OF BIDS

28. **Opening of bids.**—(1) The date for opening of bids and the last date for the submission of bids shall be the same. Bids shall be opened at the time specified in the bidding documents. The bids shall be opened at least thirty minutes after the deadline for submission of bids.

(2) All bids shall be opened publicly in the presence of the bidders or their representatives who may choose to be present, at the time and place announced prior to the bidding. The procuring agency shall read aloud the unit price as well as the bid amount and shall record the minutes of the bid opening. All bidders in attendance shall sign an attendance sheet. All bids submitted after the time prescribed shall be rejected and returned without being opened.

29. **Evaluation criteria.**—Procuring agencies shall formulate an appropriate evaluation criterion listing all the relevant information against which a bid is to be evaluated. Such evaluation criteria shall form an integral part of the bidding documents. Failure to provide for an unambiguous evaluation criteria in the bidding documents shall amount to mis-procurement.

30. **Evaluation of bids.**—(1) All bids shall be evaluated in accordance with the evaluation criteria and other terms and conditions set forth in the prescribed

bidding documents. Save as provided for in clause (iv) of sub-rule (3) of rule 36 no evaluation criteria shall be used for evaluation of bids that had not been specified in the bidding documents.

(2) For the purposes of comparison of bids quoted in different currencies, the price shall be converted into a single currency specified in the bidding documents. The rate of exchange shall be the selling rate, prevailing on the date of opening of bids specified in the bidding documents, as notified by the State Bank of Pakistan on that day.

(3) A bid once opened in accordance with the prescribed procedure shall be subject to only those rules, regulations and policies that are in force at the time of issue of notice for invitation of bids.

31. **Clarification of bids.**—(1) No bidder shall be allowed to alter or modify his bid after the bids have been opened. However the procuring agency may seek and accept clarifications to the bid that do not change the substance of the bid.

(2) Any request for clarification in the bid, made by the procuring agency shall invariably be in writing. The response to such request shall also be in writing.

32. **Discriminatory and difficult conditions.**—Save as otherwise provided, no procuring agency shall introduce any condition, which discriminates between bidders or that is considered to be met with difficulty. In ascertaining the discriminatory or difficult nature of any condition reference shall be made to the ordinary practices of that trade, manufacturing, construction business or service to which that particular procurement is related.

33. **Rejection of bids.**—(1) The procuring agency may reject all bids or proposals at any time prior to the acceptance of a bid or proposal. The procuring agency shall upon request communicate to any supplier or contractor who submitted a bid or proposal, the grounds for its rejection of all bids or proposals, but is not required to justify those grounds.

(2) The procuring agency shall incur no liability, solely by virtue of its invoking sub-rule (1) towards suppliers or contractors who have submitted bids or proposals.

(3) Notice of the rejection of all bids or proposals shall be given promptly to all suppliers or contractors that submitted bids or proposals.

34. **Re-bidding.**—(1) If the procuring agency has rejected all bids under rule 33 it may call for a re-bidding.

(2) The procuring agency before invitation for re-bidding shall assess the reasons for rejection and may revise specifications, evaluation criteria or any other condition for bidders as it may deem necessary.

35. **Announcement of evaluation reports.**—Procuring agencies shall announce the results of bid evaluation in the form of a report giving justification for acceptance or rejection of bids at least ten days prior to the award of procurement contract.

36. **Procedures of open competitive bidding.**—Save as otherwise provided in these rules the following procedures shall be permissible for open competitive bidding, namely:—

- (a) *single stage—one envelope procedure.*—Each bid shall comprise one single envelope containing, separately, financial proposal and technical proposal (if any). All bids received shall be opened and evaluated in the manner prescribed in the bidding document.
- (b) *single stage—two envelope procedure.*—(i) The bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;
- (ii) the envelopes shall be marked as “FINANCIAL PROPOSAL” and “TECHNICAL PROPOSAL” in bold and legible letters to avoid confusion;
- (iii) initially, only the envelope marked “TECHNICAL PROPOSAL” shall be opened;
- (iv) the envelope marked as “FINANCIAL PROPOSAL” shall be retained in the custody of the procuring agency without being opened;
- (v) the procuring agency shall evaluate the technical proposal in a manner prescribed in advance, without reference to the price and reject any proposal which do not conform to the specified requirements;
- (vi) during the technical evaluation no amendments in the technical proposal shall be permitted;
- (vii) the financial proposals of bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;
- (viii) after the evaluation and approval of the technical proposal the procuring agency, shall at a time within the bid validity period, publicly open the

financial proposals of the technically accepted bids only. The financial proposal of bids found technically non-responsive shall be returned un-opened to the respective bidders; and

(ix) the bid found to be the lowest evaluated bid shall be accepted.

(c) *two stage bidding procedure.*—

First stage

- (i) the bidders shall first submit, according to the required specifications, a technical proposal without price;
- (ii) the technical proposal shall be evaluated in accordance with the specified evaluation criteria and may be discussed with the bidders regarding any deficiencies and unsatisfactory technical features;
- (iii) after such discussions, all the bidders shall be permitted to revise their respective technical proposals to meet the requirements of the procuring agency;
- (iv) the procuring agency may revise, delete, modify or add any aspect of the technical requirements or evaluation criteria, or it may add new requirements or criteria not inconsistent with these rules:

Provided that such revisions, deletions, modifications or additions are communicated to all the bidders equally at the time of invitation to submit final bids, and that sufficient time is allowed to the bidders to prepare their revised bids:

Provided further that such allowance of time shall not be less than fifteen days in the case of national competitive bidding and thirty days in the case of international competitive bidding;

- (v) those bidders not willing to conform their respective bids to the procuring agency's technical requirements may be allowed to withdraw from the bidding without forfeiture of their bid security;

Second stage

- (vi) the bidders, whose technical proposals or bids have not been rejected and who are willing to conform their bids to the revised technical

requirements of the procuring agency, shall be invited to submit a revised technical proposal along with the financial proposal;

- (vii) the revised technical proposal and the financial proposal shall be opened at a time, date and venue announced and communicated to the bidders in advance; and
- (viii) the revised technical proposal and the financial proposal shall be evaluated in the manner prescribed above. The bid found to be the lowest evaluated bid shall be accepted:

Provided that in setting the date for the submission of the revised technical proposal and financial proposal a procuring agency shall allow sufficient time to the bidders to incorporate the agreed upon changes in the technical proposal and prepare their financial proposals accordingly.

(d) *two stage—two envelope bidding procedure.—*

First stage

- (i) the bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;
- (ii) the envelopes shall be marked as "FINANCIAL PROPOSAL" and "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion;
- (iii) initially, only the envelope marked "TECHNICAL PROPOSAL" shall be opened;
- (iv) the envelope marked as "FINANCIAL PROPOSAL" shall be retained in the custody of the procuring agency without being opened;
- (v) the technical proposal shall be discussed with the bidders with reference to the procuring agency's technical requirements;
- (vi) those bidders willing to meet the requirements of the procuring agency shall be allowed to revise their technical proposals following these discussions;
- (vii) bidders not willing to conform their technical proposal to the revised requirements of the procuring agency shall be allowed to withdraw

Second stage

- (viii) after agreement between the procuring agency and the bidders on the technical requirements, bidders who are willing to conform to the revised technical specifications and whose bids have not already been rejected shall submit a revised technical proposal and supplementary financial proposal, according to the technical requirement;

(ix) the revised technical proposal along with the original financial proposal and supplementary financial proposal shall be opened at a date, time and venue announced in advance by the procuring agency:

Provided that in setting the date for the submission of the revised technical proposal and supplementary price proposal a procuring agency shall allow sufficient time to the bidders to incorporate the agreed upon changes in the technical proposal and to prepare the required supplementary financial proposal; and

- (x) the procuring agency shall evaluate the whole proposal in accordance with the evaluation criteria and the bid found to be the lowest evaluated bid shall be accepted.

37. **Conditions for use of single stage two envelope, two stage and two stage two envelope bidding procedures.—**Single stage one envelope bidding procedure shall ordinarily be the main open competitive bidding procedure used for most of the procurement. Other appropriate procedures of open competitive bidding shall be selected in the following circumstances, namely:—

- (a) single stage two envelope bidding procedure shall be used where the bids are to be evaluated on technical and financial grounds and price is taken into account after technical evaluation;
- (b) two stage bidding procedure shall be adopted in large and complex contracts where technically unequal proposals are likely to be encountered or where the procuring agency is aware of its options in the market but, for a given set of performance requirements, there are two or more equally acceptable technical solutions available to the procuring agency; and
- (c) two stage two envelope bidding method shall be used for procurement where alternative technical proposals are possible; such as certain type of machinery or equipment or manufacturing plant.

ACCEPTANCE OF BIDS AND AWARD OF PROCUREMENT CONTRACTS

38. **Acceptance of bids.**—The bidder with the lowest evaluated bid, if not in conflict with any other law, rules, regulations or policy of the Federal Government, shall be awarded the procurement contract, within the original or extended period of bid validity.

39. **Performance guarantee.**—Where needed and clearly expressed in the bidding documents, the procuring agency shall require the successful bidder to furnish a performance guarantee which shall not exceed ten per cent of the contract amount.

40. **Limitation on negotiations.**—Save as otherwise provided there shall be no negotiations with the bidder having submitted the lowest evaluated bid or with any other bidder.

Provided that the extent of negotiation permissible shall be subject to the regulations issued by the Authority.

41. **Confidentiality.**—The procuring agency shall keep all information regarding the bid evaluation confidential until the time of the announcement of the evaluation report in accordance with the requirements of rule 35.

42. **Alternative methods of procurements.**—A procuring agency may utilize the following alternative methods of procurement of goods, services and works, namely:—

- (a) **petty purchases.**—Procuring agencies may provide for petty purchases where the object of the procurement is below the financial limit of ten thousand rupees. Such procurement shall be exempt from the requirements of bidding or quotation of prices:

Provided that the procuring agencies shall ensure that procurement of petty purchases is in conformity with the principles of procurement prescribed in rule 4:

Provided further that procuring agencies convinced of the inadequacy of the financial limit prescribed for petty purchases in undertaking their respective operations may approach the Federal Government for enhancement of the same with full and proper justifications.

(b) **request for quotations.**—A procuring agency shall engage in this method of procurement only if the following conditions exist, namely:—

- (i) the cost of object of procurement is below the prescribed limit of forty thousand rupees;
- (ii) the object of the procurement has standard specifications;
- (iii) minimum of three quotations have been obtained; and
- (iv) the object of the procurement is purchased from the supplier offering the lowest price:

Provided that procuring agencies convinced of the inadequacy of the financial limit prescribed for request for quotations in undertaking their respective operations may approach the Federal Government for enhancement of the same with full and proper justifications.

(c) **direct contracting.**—A procuring agency shall only engage in direct contracting if the following conditions exist, namely:—

- (i) the procurement concerns the acquisition of spare parts or supplementary services from original manufacturer or supplier:

Provided that the same are not available from alternative sources;

- (ii) only one manufacturer or supplier exists for the required procurement:

Provided that the procuring agencies shall specify the appropriate fora, which may authorize procurement of proprietary object after due diligence; and

- (iii) where a change of supplier would oblige the procuring agency to acquire material having different technical specifications or characteristics and would result in incompatibility or disproportionate technical difficulties in operation and maintenance:

Provided that the contract or contracts do not exceed three

(iv) repeat orders not exceeding fifteen per cent of the original procurement; and

(v) in case of an emergency:

Provided that the procuring agencies shall specify appropriate fora vested with necessary authority to declare an emergency.

(d) *negotiated tendering*.—A procuring agency may engage in negotiated tendering with one or more suppliers or contractors with or without prior publication of a procurement notification. This procedure shall only be used when,—

(i) the supplies involved are manufactured purely for the purpose of supporting a specific piece of research or an experiment, a study or a particular development;

(ii) for technical or artistic reasons, or for reasons connected with protection of exclusive rights or intellectual property, the supplies may be manufactured or delivered only by a particular supplier;

(iii) for reasons of extreme urgency brought about by events unforeseeable by the procuring agency, the time limits laid down for open and limited bidding methods cannot be met. The circumstances invoked to justify extreme urgency must not be attributable to the procuring agency:

Provided that any procuring agency desirous of using negotiated tendering as a method of procurement shall record its reasons and justifications in writing for resorting to negotiated tendering and shall place the same on record.

43. *On account payments*.—All procuring agencies shall make prompt payments to suppliers and contractors against their invoices or running bills within the time given in the conditions of the contract, which shall not exceed thirty days.

44. *Entry into force of the procurement contract*.—A procurement contract shall come in force,—

(a) where no formal signing of a contract is required, from the date the notice of the acceptance of the bid or purchase order has been given to the bidder whose bid has been accepted. Such notice of acceptance or purchase order shall be issued within a reasonable time or

(b) where the procuring agency requires signing of a written contract from the date on which the signatures of both the procuring agency and the successful bidder are affixed to the written contract. Such affixing of signatures shall take place within a reasonable time:

Provided that where the coming into force of a contract is contingent upon fulfillment of a certain condition or conditions, the contract shall take effect from the date whereon such fulfillment takes place.

45. *Closing of contract*.—(1) Except for defect liability or maintenance by the supplier or contractor, as specified in the conditions of contract, performance of the contract shall be deemed close on the issue of over all delivery certificate or taking over certificate which shall be issued within thirty days of final taking over of goods or receiving the deliverables or completion of works enabling the supplier or contractor to submit final bill and the auditors to do substantial audit.

(2) In case of defect liability or maintenance period, defect liability certificate shall be issued within thirty days of the expiry of the said period enabling the supplier or contractor to submit the final bill. Except for unsettled claims, which shall be resolved through arbitration, the bill shall be paid within the time given in the conditions of contract, which shall not exceed sixty days to close the contract for final audit.

MAINTENANCE OF RECORD AND FREEDOM OF INFORMATION

46. *Record of procurement proceedings*.—(1) All procuring agencies shall maintain a record of their respective procurement proceedings along with all associated documentation for a minimum period of five years.

(2) Such maintenance of record shall be subject to the regulations framed in this regard from time to time.

47. *Public access and transparency*.—As soon as a contract has been awarded the procuring agency shall make all documents related to the evaluation of the bid and award of contract public:

Provided that where the disclosure of any information related to the award

that such disclosure shall be against the public interest, it can withhold only such information from public disclosure subject to the prior approval of the Authority.

REDRESSAL OF GRIEVANCES AND SETTLEMENT OF DISPUTES

48. **Redressal of grievances by the procuring agency.**—(1) The procuring agency shall constitute a committee comprising of odd number of persons, with proper powers and authorizations, to address the complaints of bidders that may occur prior to the entry into force of the procurement contract.

(2) Any bidder feeling aggrieved by any act of the procuring agency after the submission of his bid may lodge a written complaint concerning his grievances not later than fifteen days after the announcement of the bid evaluation report under rule 35.

(3) The committee shall investigate and decide upon the complaint within fifteen days of the receipt of the complaint.

(4) Mere fact of lodging of a complaint shall not warrant suspension of the procurement process.

(5) Any bidder not satisfied with the decision of the committee of the procuring agency may lodge an appeal in the relevant court of jurisdiction.

49. **Arbitration.**—(1) After coming into force of the procurement contracts, disputes between the parties to the contract shall be settled by arbitration.

(2) The procuring agencies shall provide for a method of arbitration in the procurement contract, not inconsistent with the laws of Pakistan.

50. **Mis-procurement.**—Any unauthorized breach of these rules shall amount to mis-procurement.

51. **Overriding effect.**—The provisions of these rules shall have effect notwithstanding anything to the contrary contained in any other rules concerning public procurements:

Provided that the prevailing rules and procedures will remain applicable only for the procurement of goods, services and works for which notice for invitation

of bids had been issued prior to the commencement of these rules unless the procuring agency deems it appropriate to reissue the notice for the said procurement after commencement of these rules.

[No. F. 6(1) Admn. V/04.]

Sd/-
SAJID HASAN,
Additional Secretary.

ANNEXURE – 4

**Regulatory Framework and Standard Operating
Procedures for Preservation and Commercial Use
of Right of Way (ROW) – 2002
Revised in September 2004**

National Highway Authority



Regulatory Framework

and

Standard Operating Procedures

For

PRESERVATION AND COMMERCIAL USE

of

RIGHT OF WAY (ROW) - 2002

REVISED IN SEPTEMBER 2004

BY THE COMMITTEE CONSTITUTED BY CHAIRMAN NHA
COMPRISING OF FOLLOWINGS
GM (INTERNAL AUDIT)
GM (OPERATIONS)
GM (SINDH)
GM (PUNJAB-NORTH)
DIRECTOR (OMU)

IN CONSULTATION WITH ALL STAKEHOLDERS

**ROAD ASSET MANAGEMENT DIVISION
(RAMD)**

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National Highway Authority

Regulatory Framework and Standard Operating Procedures

For

Preservation and Commercial use of Right of Way (ROW) - 2002

CHAPTER - I

1. PREAMBLE

(1) National Highway Authority (NHA) Act 1991 as amended in 2001, Chapter III, which deals with the “Powers and Duties of the Authority”, Para 10(2) (vii), (viii), (ix), (xiii) and (xv) (**Annexure-I**) empower NHA to benefit from the commercial use of roads and bridges entrusted to it. Traditionally NHA has been collecting tolls on some of the road bridges, while the Provincial C&W departments continued to collect tolls on bridges on the existing carriageways and collection of approach rental/lease charges from petrol pumps etc. upto 30th July 1999. On July 20, 1999 the Federal Government directed the Provincial Governments that the rights to collect all tolls on the national highways wherever presently being exercised by the Provincial Governments, will hence forth stand transferred to the Federal Government/NHA of the Ministry of Communications under the NHA Act 1991 Article 10(2)(vii).

NHA Act 1991 as amended in 2001, Chapter III, Para 10(2)(xv) authorizes the NHA, to takeover Right Of Way (ROW) of the roads declared as National Highways with the consent of provinces and approval of the Federal Cabinet and Provinces shall simultaneously effect the mutation free of cost and without any liability or condition. Pursuant to Federal Cabinet decision made in its meeting held 3-10-2001, the government of Punjab has agreed on 19-01-2002 to transfer the Right of Way (ROW) of national highways as per following terms and conditions:

“The Government of the Punjab shall effect mutation in the name of National Highway Authority free of cost and without encumbrance as laid down in the NHA Act, 1991. From the date of such mutation, NHA shall be entitled to exercise all such rights and privileges as are being exercised by C&W Department, Govt. of the Punjab. In exercise of such rights and privileges, the NHA shall not be required to seek any prior approval of the government of Punjab. In the event, there being any difficulty in exercise of such rights the Government of Punjab shall take such acts and measures as may be suggested by NHA”.

The mutation of land within ROW shall be effected on the same principle as given above in other provinces i.e. NWFP, Balochistan, Sindh, and Northern Areas.

Based on a principle that when NHA is responsible for development and maintenance of the national highway network, it is imperative that all the benefits accruing from the national highways commercial use should belong to the NHA. Under the NHA Act 1991, NHA has levied tolls on 71 locations on national highways and motorways and commenced the commercial use of ROW by collecting ground rental charges from newly established Filling/CNG stations and other amenities from 20th July 1999.

The policy guidelines for tolls and commercial use of ROW were approved by NHA Executive Board in its 92nd meeting dated 15-03-2000 as an interim measures till the final approval and constituted a committee to finalize the policy for Tolling & Preservation/Commercial use of ROW.

On the recommendations of above referred committee, the National Highways and Strategic Roads (Control) Rules 1998 as amended in 2002 (**Annexure-II**) were approved in 104th NHA Executive Board meeting held on 29-05-2002 to enable NHA to implement its policy for Preservation/Commercial use of ROW regarding establishment of filling/CNG stations, hotels/motels, restaurants, nurseries, factories, shops, khokhas, kiosks, hoarding boards, utility lines etc. besides strict control on ribbon development and removal of encroachments.

CHAPTER - II

Definitions

1. **Definitions:-** (1) In these Regulations and Standard Operating Procedures, unless there is anything repugnant in the subject or context;-

- (i) "**Act**" means the National Highway Authority Act, 1991 (XI of 1991) as amended in 2001;
- (ii) "**Animal**" includes any elephant, camel, horse, ass, mule, deer, tortoises, hedgehogs and cattle etc.
- (iii) "**Appendix**" means an appendix to these rules,
- (iv) "**Approach Rental Charges**" means the charges prescribed by the authority for use of NHA land for approaches to filling/CNG station, structures and other amenities established out of NHA Right of Way (ROW).
- (v) "**Authority**" means the National Highway Authority established under the Act.
- (vi) "**Board**" means the Executive Board of the Authority.
- (vii) "**Bridge**" means any structure including its sub structure and guide banks which carries a highway, road, railroad, utility, facility, pedestrian, other traffic over a water course, river, canal, nullas, water channels, railway line, stream, over, under or around an obstruction and with a clear span of more than 6.5 meter.
- (viii) "**Building line**" means the building line determined under rules 5 or already established under West Pakistan Highways Ordinance, 1959 and as amended by Government of Punjab, NWFP, Sindh, Baluchistan, AJK and Northern Areas.
- (ix) "**Chairman**" means Chairman of the Authority.
- (x) "**Corridor Management**" means the act of carrying out NHA's regulatory functions as custodian of the public asset, including:
 - management of right of way and building line (encroachments, ribbon development, utilities, access/approach roads, afforestation, commercialization),
 - roadside facilities (service and rest areas, filling stations, amenities),
 - traffic and highway safety operations (public awareness campaigns, enforcement of traffic laws and rules,

roadside emergency telephone service, mobile vehicle repairs and rescue service, para medical service), and

- weigh station operations, and toll operations.
- (xi) **“Corridor Management Contractor (CMC)”** means the service provider under O&M agreement or any other duly executed agreement for corridor management, appointed to undertake the tasks assigned in the scope of services.
- (xii) **“Council”** means the National Highway Council.
- (xiii) **“Encroachment”** means setting up, laying, erecting, excavating, constructing any type of building boundary wall, structure whether temporary or permanent (moveable or immovable), scaffolding, tower, pylon, fence, hedge, post, sign board, advertisement, hoarding or banner, transmission line, duct or depositing or causing to be deposited, building material, goods for sale, laying cable, wire, pipeline, drain, sewer/channel of any kind through, across, under or over any road, highway, motorway and bridge under its control or any other similar structure within the Right of Way (ROW) in violation of rule 3, 4 & 6 without the consent, in writing, of the Authority;
- (xiv) **“Government”** means in relation to National Highways and Strategic Roads declared as such by or under a Federal Law, the Federal Government.
- (xv) **“Ground Rental Charges”** means the value of the land within Right of Way (ROW) charged at prescribed percentage on annual basis or 3 years in advance or as prescribed by the authority.
- (xvi) **“Highway”** includes a common and public highway and all roads, carriageways, interchanges, cartways, service lanes, streets and lanes, together with any bridleways, footpaths and pavements adjacent thereto, which have been constructed, or are maintained by Government or any local authority or any other authority empowered in that behalf, and are designed and intended for, or used by, the general public for the passage of vehicles, and shall further include:
- (a) all culverts, bridges and works of every description built on, under or across any highway;
 - (b) all adjacent berms and side drains within the boundaries of any highway;
 - (c) all land included within the boundaries of any highway (Right of Way); and
 - (d) all fences, posts and trees on any highway.
- (xvii) **“Lease”** means a letting of land or building to a person for specified rent and period.

- (xviii) "**Motorway**" means the access controlled "highway" declared a National Highway under the Act.
- (xix) "**National Highway**" means a road specified in a part I of the schedule attached with the Act and includes a road declared by the Federal Government by notification in the official Gazette, to be a National Highway.
- (xx) "**NHA**" mean National Highway Authority.
- (xxi) "**NHA RMF Account**" means NHA Road Maintenance Fund Account.
- (xxii) "**RAMD**" means the Road Asset Management Directorate established under NHA as recommended by Executive Board and approved by Government.
- (xxiii) "**Regulations**" means regulations framed under Section 32 of the Act by the Authority.
- (xxiv) "**Ribbon development**" means erection of any building or structure on the land lying between the ROW and the building line.
- (xxv) "**Right of Way (ROW)**" means the land acquired for the purpose of construction of a National Highway or any other road assigned to the Authority or taken over ROW of the roads declared as National Highway or strategic road under the NHA Act and is control by the Authority including bridges constructed and owned by the Authority.
- (xxvi) "**Road**" means a road including land within the Right of Way and all works, such as, carriageways, interchanges, cartways, service roads, footpaths, berms, side drains, culverts, underpasses, bridges, guide banks, overhead pedestrian bridges, causeways, tunnels, fences, guardrails, parapets, retaining walls, posts, sign boards, plantation, lighting arrangements, traffic signals, toll plazas, weigh stations, inter sections and medians assigned to the Authority.
- (xxvii) "**Regulatory Framework**" means Regulations framed under Clause 32 of the act.
- (xxviii) "**Revenues**" means revenues accruing to NHA from road users and other sources specifically from commercial use of right of way (ROW).
- (xxix) "**Rules**" means rules made by the Government an exercise of power conferred by section 31 of the Act.
- (xxx) "**SOP**" means the Standard Operating Procedures approved by the NHA Executive Board for Regulatory Framework and Standard Operating Procedures for Preservation and Commercial Use of Right of Way (ROW).

- (xxxi) **“Strategic Road”** means a road specified in part-II of the Schedule of 1991 Act as amended in 2002 and includes a road declared by the Federal Government by notification in the official Gazette, to be a Strategic Road.
- (xxxii) **“Toll Rate”** means the rate at which toll may be prescribed/charged at a Toll Point/Plaza by or on behalf of the Authority for use of a toll section/point.
- (xxxiii) **“Vehicle”** means a vehicle as defined in the Motor Vehicles Ordinance 1965 and includes goods trucks, trailer, tractor, bus, wagon, car and motor cycle etc., which are also categorized as public service vehicles, light/heavy transport vehicles and motor cars.
- (xxxiv) **“Work”** means the development, design, engineering, financing, insurance, manufacture, supply, procurement of equipment, machinery, materials and apparatus etc., construction, completion, start-up, commissioning, operation and maintenance of the national highways, motorway and strategic roads, and all activities incidental thereto.

(2) All other expressions used but not defined in these rules, shall have the same meaning as are assigned to them under the Act.

CHAPTER – III

General Regulations/Provisions

1. The regulatory framework and standard operating procedures for Preservation and commercial use of ROW shall be used to implement NHA's policies for commercialization, preservation of its Right of Way (ROW), building line and removal of encroachments, erection/establishment of Filling/CNG stations, hotels/motels, restaurants, factories, nurseries, shops, khokhas, hoarding/bill boards, etc. and laying of utility lines.
2. The commercial use of Right of Way (ROW) shall be strictly in accordance with the Laws of Pakistan. It will also be ensured that no exhibit appears anywhere in the Right of Way (ROW) which is morally or ethically in contravention to religious or regional sensitivities of the people of Pakistan.
3. The authority shall be responsible for collecting/generating revenues from the following sources either directly or through legally executed contracts for Corridor Management with Corridor Management Contractors:
 - Issuance of license to construct approach roads or culverts to use Government land for construction, installation of Filling/CNG stations, other amenities and laying of utility lines through, across, under and over the road or bridge under Rule 12 of National Highways and Strategic Roads (Control) Rules 1998 as amended in 2002.
 - Lease of Government Land for the erection/installation of Filling/CNG station and other structure, service area concessions and amenities:- Licenses, leases and agreements for the construction or use by a private person or works of a private nature by any other agency for public works/utilities on land which is the property of Government shall govern under Rule 13 of National Highways and Strategic Roads (Control) Rules 1998 as amended in 2002.
 - Lease of Government Land for Establishment of Movable Property like Nurseries, Khokhas, Kiosks, Orchards, Vendor Stalls etc:- Licenses, leases and agreements for the construction or use by a private person or works of a private nature by any other agency for public works/utilities on land which is the property of Government shall govern under Rule 14 of National Highways and Strategic Roads (Control) Rules 1998 as amended in 2002.
 - Service area concessions under legally executed contracts approved by Executive Board on case to case basis.
4. Road Asset Management Directorate (RAMD) will regularly review the policy matters, implementation programs and recommend upward/downward adjustment or revision in the level of rates for leasing/licensing the ROW for commercial use to the Chairman NHA or Board as the case may be for decision as per National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002.
5. All the NOC fees, lease charges, approach and ground rental charges, administrative charges and other revenues generated (net of collection costs) from

commercial use of ROW shall be channeled into Road Maintenance Account (RMA) of NHA as detailed in Road Maintenance Account Rules 2003. The General Manager (Operations)/(Region) or Corridor Management Contractor shall deposit the gross revenue in RM Account by 10th of every month. The collection fees of Corridor Management Contractors shall be paid by NHA within fortnight from the date of receipt of revenues generated from commercial use of ROW.

6. Commercial audit of revenues and expenditures shall be carried out at the end of each financial year as detailed in Road Maintenance Account Rules 2003.

7. Detailed asset inventory of roads, bridges and all facilities/amenities shall be developed either directly by NHA or jointly with Corridor Management Contractor as the case may be. Further the value of asset with every improvement or further addition to the existing asset shall be adjusted. The inventories list will also include all the amenities like filling/CNG stations , hotels/restaurants, khokhas, kiosks, nurseries, orchards, motels, hoardings/advertisement boards, PTCL cables like OFC, Co-axial cables and other communication Cables/networks, sui gas, high transmission and local distribution networks etc. etc. The inventories will be maintained at the offices of the RAMD HQ Islamabad, Regional General Managers and Corridor Management Contractor (CMC).

8. Corridor Management Contractor will submit monthly statement of all receipts from commercial management of ROW to RAMD in a proforma given at Annexure – III by 5th of each month. The Regional General Managers/Dy. Director (Maintenance) shall also submit the same where the assets are managed directly by NHA.

9. Headwise register of lease or ground rental charges shall also be maintained by RAMD office, Islamabad, Regional General Managers/Dy. Director (Maint) and Corridor Management Contractor in case of O&M or corridor management contracts.

10. Dy. Director (Maintenance) or Corridor Management Contractors shall ensure to collect the annual fees/ground rental charges from the owners of commercial entities/amenities and different Govt/Semi Govt agencies owning the utilities within the due date. In case of non-payment, within fifteen (15) days of the due date, issue the notices for payment of annual lease or ground rental charges or fee and will endorse a copy to RAMD office, Islamabad and Regional General Managers.

11. In case the owner of any commercial entity/amenity and different Govt/Semi Govt agencies owning the utilities fails to pay the lease or ground or approach rental charges or fee in due course of time and fail to comply with the instructions of the authority through Dy. Director (Maint) or CMC, the owners shall be charged surcharge at the rates given as under:

- | | | |
|----|--------------------------|---|
| a) | 1 month after due date. | Surcharge of 10% of lease or ground rental charges or fee |
| b) | 2 months after due date. | Surcharge of 20% of lease or ground rental charges or fee |
| c) | 3 months after due date. | Surcharge of 30% of lease or ground rental charges or fee |

- d) More than 90 days
- Case for cancellation of NOC/license or lease agreement shall be processed by the General Manager (Operations)/(Region) or Corridor Management Contractor for approval of competent authority. NHA/CMC shall reserve the right to block the entry/exit of the filling station/CNG and other amenities at the cost of the owner of the filling station/CNG and other amenities. NHA shall issue a three (3) days notice prior to taking the final action of prohibiting vehicles to enter the filling station/CNG and other amenities. The re-opening shall only be possible upon the payment of full ground rental charges plus surcharge as applicable plus the expenditures incurred on blocking and re-opening.

12. No amount on account of the NOC fees, lease/approach/ ground rental/ administrative charges or other revenues generated (net of collection costs) from commercial use of ROW shall be received by any NHA official or CMC in cash. All receipts in this regard shall be in the form of Demand Draft or Pay Order drawn in the name of NHA RM Account, Islamabad.

CHAPTER - IV

Lease of Government Land for Installation of Filling/CNG Stations and NOC Requirement for approach rental charges for Using NHA land for approaches to Filling/CNG Stations installed Out of NHA Right of Way (ROW)

1. PROVISIONS/REGULATIONS

- (1) The Filling/CNG Stations have been divided in to two categories.
 - (i) **Lease of NHA Land within ROW for installation of Filling/CNG Stations**
 - (a) Filling/CNG Stations already established within NHA Right of Way (ROW) without having any NOC from NHA and without payment of ground rental charges to NHA.
 - (b) Establishment of new Filling/CNG Stations on NHA land by submission of technical and financial proposals with payment of ground rental charges to NHA.
 - (ii) **Establishment of Filling/CNG Stations on applicants own land but using NHA land (ROW) for approaches**
 - (a) Filling/CNG Stations already established out of NHA Right of Way (ROW) (at owner's own land) but using NHA Right of Way (ROW) for approach roads without any payment of approach rental charges and NOC fees and not fulfilling the conditions for construction of public utilities like ladies and gents toilets, drinking water, tyre shop etc. etc.
 - (b) Installation of new Filling/CNG Stations outside the NHA Right of Way (ROW) and using NHA land for approaches, meeting all criteria under Rules, Regulatory Framework and Standard Operating Procedure (SOP) of NHA and having NOC from NHA.

2. Lease of NHA Land within ROW for installation of Filling/CNG Stations (Category 1(i) (a))

- (i) **Already Established Installations**
 - (a) Already established filling/CNG stations shall be registered with NHA, NOC shall be issued by NHA after completing the formalities and collection of rents commencing from July 1999 as arrears (as already agreed with NHA by Oil Marketing Companies). One year advance rental will also be charged. NHA land within ROW as utilized by Filling/CNG stations shall be measured and the value/cost of land shall be assessed based on land value notified

by Distt Revenue Officer or any other prescribed authority. The annual ground rental charges shall be collected @ 5% (minimum) or as prescribed by the authority, of the cost of land (utilized) as assessed by the Distt Revenue Officers in the lease year as per National Highways and Strategic Roads (Control) Rules 1998 as amended in 2002. No objection/registration fees as prescribed by the Authority @ Rs. 50,000/- shall be charged. All such dues will be charged according to the financial year.

- (b) All already established Filling/CNG Stations without proper drainage facilities shall be served with notices to immediately construct/provide such drainage facilities within ninety (90) days or owners of filling/CNG stations shall deposit the estimated cost to NHA so that above-mentioned facilities could be constructed by NHA itself.
- (c) All these filling/CNG stations will also construct ladies and gents toilets, drinking water facility and tyre shop at their own cost. The Regional General Managers/D.D (Maint) or Corridor Management Contractor will ensure the provision of such facilities within ninety (90) days or owners of filling/CNG stations shall deposit the estimated cost to NHA so that above-mentioned facilities could be constructed by NHA itself.
- (d) The ground rental at the rate of 5% (minimum) or as prescribed by the authority for already established installations within NHA ROW like Filling/CNG station of assessed value of the land by District Revenue Officers or any other prescribed authority shall be charged with effect from 1st July, 1999.
- (e) The registration/NOC fee shall be Rs. 50,000/- in favor of NHA RM Account, Islamabad for each Filling/CNG station, which shall be non-refundable.
- (f) An agreement on a stamp paper of worth equivalent to 4% of one year ground rental charges would be duly executed under sub-section 1 & 2 of Rule 13 & 14 of National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002 by the two parties. The expenses for providing the stamp paper shall be borne by the lessee.
- (g) In case of any dispute, either party shall have the right to terminate the Contract Agreement after serving ninety (90) days notice for termination to the other party.
- (h) The Authority reserves the right to terminate the Lease Agreement at any time for its convenience, for the purpose of planned utilization of leased land or if it becomes necessary in the public interest, after serving Ninety (90) days notice to the Lessee. In no

event such termination shall be deemed as default by the Authority under this Agreement. However, the Lessee shall be entitled to some kind of compensation for the carried out civil works on the leased land, to be fixed by a Sole Adjudicator appointed by the Authority and acceptable to the Lessee in addition to allotment of an alternate site, if available, in accordance with the Rules in vogue at that time.

(i) All payments will be made in favor of NHA RM Account, Islamabad through bank draft/pay order.

3. Processing of Application for Lease of Government Land for the erection of Filling/CNG stations (Category 1(i) (b))

(1) The Procedure for processing of lease agreement with owner of amenity/agency for leasing Government land on ground rental charges is prescribed as under:

(a) The owner of amenity or agency shall submit an application comprising of the followings:

(i) Proposed Locations

The interested firms/persons shall submit precise location of proposed Filling/CNG station along with drawings/layout plans [photographs if required] including location of compressing station and dispenser station as per methodology in case of CNG stations. The interested firms shall contact General Manager (Operations)/Region or CMC for guidance and pin pointing the locations within the NHA Right of Way (ROW).

The applicant shall provide eight (08) copies of the layout plan of the proposed Filling/CNG Station, which in-variably contain the followings:

- (a) Distance of the Oil Marketing/Gas Company sign, cut-of-drain, petrol/diesel/CNG pumps and buildings from the centre of nearest carriageway [edge of the berm and the Right of Way (ROW) line].
- (b) Distance of the nearest existing bridge, filling/CNG station, horizontal or vertical curve or any other obstruction in the sight.
- (c) Structures and other amenities to be constructed on the plot with measurements and distances.
- (d) Attested photocopies of National Identity Card of the owner/dealer and authorized representative of the Filling/CNG station.

(ii) **Dimensions of Plot**

The minimum dimensions of the plot (length x depth) in feet shall be:

<u>Description</u>	<u>CNG Station</u>	<u>Filling Station</u>
Rural	125' x 150'	150' x 200'
Urban	100' x 100'	125' x 150'
Hilly Areas	75' x 100'	125' x 125'
Mountainous Areas	60' x 80'	75' x 100'

Note: The plot size can vary as per available Government Land in NHA Right of Way (ROW). The above minimum requirement is for the guidance of applicants.

(iii) **Development of Filling/CNG station and its related works**

- (a) Development of Filling/CNG station, and its related works (Laying of pipeline in case of CNG station if required) will be the responsibility of the firm, person or agency. NHA will approve the building of Filling/CNG station, plans and drawings as per conditions set forth in the Request for Proposal/Expression of Interest (RFP/EOI).
- (b) In case of Filling Station an Under Taking of Oil Marketing Company, on a Stamp Paper of Rs 100/-, will be provided by the applicant.
- (c) In case of CNG Station the Under Taking, on a Stamp Paper of Rs 100/-, will be provided by the applicant

(iv) **Safety Specifications**

- a) Government of Pakistan, Ministry of Petroleum and Natural Resources vide 1992 CNG Rules laid certain conditions for issuing necessary license for establishing CNG stations. All these Technical and Safety conditions laid down by Ministry of Petroleum and Natural Resources vide 1992 CNG Rules will be observed/included in the proposal and all those proposals not in accordance with Technical and Safety conditions will be considered non responsive.
- b) The Effect of Proposed Filling/CNG Station on Flow of Traffic and Highway Safety.

If the proposed site is likely to interfere with the smooth flow of traffic or aggravate an existing problem, or cause an

obstruction physically or visually due to its proximity to a bridge or curve, whether horizontal or vertical, the case shall be sent to the Member (Operations) along with all plans and recommendations for decision.

(v) Road User Facilities

The interested parties shall illustrate in their proposal which sort of road User Facilities will be developed by them. The Facilities must be provided by the firm, person or agency or Concessionaire are:

- Construction of cut off drain,
- Construction of reverse slope of approach roads,
- Development of road user facilities such as ladies and gents toilets,
- Provision of drinking water cooler,
- Provision of tyre shop or air pressure facility,
- Provision of tuck shop(in areas where no market is available in the vicinity),
- Provision of prayer room(in case no mosque is available in the vicinity)
- Provision of fire fighting equipments,
- Provision of fauna and flora in green belt between approaches and in median in front of amenity,
- Construction of 50 meter acceleration and deceleration lanes along the road,
- Provision of lighting arrangements in median according to the attached design, and
- Fulfillment of all other conditions set forth in NOC/Lease Agreement.

In addition to this the firms or person or agency may include any other facility they consider necessary for road users.

(vi) Technical Proposal

Should include detailed methodology for establishing CNG station even at those places where Natural Gas is not available. The methodology should clearly specify (a) Capacity of CNG station (b) Number of dispensers to be established (c) Rate of transfer of compressed gas, (d) Transportation mechanism as in case of Skids system, (e) Storage Capacity.

(vii) Lease Period

The applicant has to specify the lease period in the proposal which should not exceed 30 years at maximum.

(viii) Financial Proposal

The financial offer shall be in the form of annual ground rental charges for a period of thirty (30) years which shall be in excess of 5% (minimum) of the assessed and notified value of land by the District Revenue Officer.

These charges shall be paid annually in advance or 3 years in advance or as prescribed by the authority in the Lease Agreement from the date of assessment and shall be subject to increase. The rate of increase for the annual ground rental charges shall be the same as that of the increase in the value of land notified by the District Revenue Officer from time to time during the currency of lease period and shall be adjusted on annual basis or after each 03 years period or as prescribed by the authority in the Lease Agreement.

(ix) Ground Rental Charges

The lease charges shall be assessed on the following percentages for Filling/CNG stations:

Filling/CNG station	Minimum 5% of the land value assessed and notified by District Revenue Officers or any other prescribed authority for this purpose.
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(x) Registration/NOC Fee

The registration/NOC fee shall be Rs. 50,000/- in favour of NHA RM Account, Islamabad for each Filling/CNG station, which shall be non-refundable.

(xi) Refundable Cash Security

The applicant shall deposit Rs. 250,000/- (Two hundred and fifty thousands) in the shape of demand draft/pay order in favour of NHA RM Account, Islamabad/Region and provide receipt of Accounts/Revenue Section to RAMD to ensure:

- Construction of cut off drain,
- Construction of reverse slope of approach roads,
- Development of road user facilities such as ladies and gents toilets,
- Provision of drinking water cooler,
- Provision of tyre shop or air pressure facility,
- Provision of tuck shop(in areas where no market is available in the vicinity),
- Provision of prayer room(in case no mosque is available in the vicinity)
- Provision of fire fighting equipments,
- Provision of fauna and flora in green belt between approaches and in median in front of amenity,
- Construction of 50 meter acceleration and deceleration lanes along the road,
- Provision of lighting arrangements in median according to the attached design, and
- Fulfillment of all other conditions set forth in NOC/Lease Agreement.

The refundable Cash Security will only be released by General Manager(Operations) after the completion of road user facilities duly

verified by Deputy Director(Maintenance) concerned/RAMD Staff or in case of termination of Agreement or cancellation of NOC, as the case may be.

(xii) **Agreement**

An agreement on a stamp paper of worth equivalent to 4% of one year ground rental charges would be duly executed under sub-section 1 &2 of Rule 13 of National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002 by the two parties. The expenses for providing the stamp paper shall be borne by the lessee. Where Government is the lessee it is exempted from stamp duty. The area of the land to be leased shall be clearly mentioned in square meters on the lease agreement and ferro plan accompanying it.

(xiii) **Termination Notice in case of any dispute**

In case of any dispute, either party shall have the right to terminate the Contract Agreement after serving ninety (90) days notice for termination to the other party.

(xiv) **Termination of Contract in Public Interest**

The Authority reverses the right to terminate the Lease Agreement at any time for its convenience, for the purpose of planned utilization of leased land or if it becomes necessary in the public interest, after serving Ninety (90) days notice to the Lessee. In no event such termination shall be deemed as default by the Authority under this Agreement. However, the Lessee shall be entitled to some kind of compensation for the carried out civil works on the leased land, to be fixed by a Sole Adjudicator appointed by the Authority and acceptable to the Lessee in addition to allotment of an alternate site, if available, in accordance with the Rules in vogue at that time.

(xv) **Methodology of Payment:**

All payments will be made in favor of NHA RM Account, Islamabad through bank draft/pay order.

(xvi) **Re-modeling/Reconstruction/Addition or Alteration**

In case of already established Filling/CNG Stations, going for re-modeling/reconstruction/addition or alteration, the applicant shall deposit Rs. 250,000/- in the shape of demand draft/pay order in favour of NHA RM Account, Islamabad/Region and provide receipt of Accounts/Revenue Section to RAMD to ensure construction of cut off drain, reverse slope of approach roads, development of road user facilities such as ladies and gents toilets, drinking water cooler, tyre shop or air pressure, tuck shop (in areas where no market is available to road users in the vicinity), prayer room (in case no mosque is available in the vicinity), fire fighting equipment,

provision of fauna and flora in green belt between approaches and median in front of amenity and all other conditions set forth in NOC/Lease Agreement. The Refundable Cash Security will only be released by General Manager (Operations) after the completion of road user facilities duly verified by the Dy. Director (Maintenance) concerned / RAMD Staff OR in case of termination of Agreement OR cancellation of NOC, as the case may be.

4. Establishment of Filling/CNG Stations on applicant's own land but using NHA land (ROW) for approaches (Category 1(ii) (a) & (b))

(1) The following approach rental charges shall be charged from Category 1(ii) (a) & (b) Filling/CNG Stations:

- (i) Non-Refundable NOC Charges of Rs 50,000/- in favor of NHA RM Account, Islamabad.
- (ii) **Approach/Access Road Rental Charges** shall be paid for 1st five years in advance. After 5 years the owner shall deposit yearly advance rental charges **by 31st July of every financial year.**

	<u>Major Cities</u>	<u>Minor Cities</u>	<u>Rural</u>
(a) Motorway (M-1 & M-3)	As per concession agreement		
(b) N-5	Rs. 100,000/- per year	Rs. 75,000/- per year	Rs. 50,000/- per year
(c) N-55	Rs. 75,000/- per year	Rs. 50,000/- per year	Rs. 35,000/- per year
(d) Others	Rs. 50,000/- per year	Rs. 35,000/- per year	Rs. 25,000/- per year

The names of the major cities are as under:-

N-5 Major Cities:

- | | | | |
|---------------|----------------|------------|----------------|
| 1. Karachi | 2. Hyderabad | 3. Sukkur | 4. R.Y. Khan |
| 5. Bahawalpur | 6. Multan | 7. Okara | 8. Sahiwal |
| 9. Lahore | 10. Gujranwala | 11. Jhelum | 12. Rawalpindi |
| 13. Nowshera, | 14. Peshawar. | | |

All remaining Urban Areas on N-5 will be treated as minor cities with Annual rental charges of Rs 75,000/- per annum.

N-55 Major Cities:

- | | | | |
|----------|------------|-------------|-------------|
| 1. Dadu | 2. Larkana | 3. D.G.Khan | 4. D.I.Khan |
| 5. Bannu | 6. Kohat. | | |

All remaining Urban Areas on N-55 will be treated as minor cities with Annual rental charges of Rs 50,000/- per annum.

N-10, N-15, N-25, N-35, N-40, N-45, N-65, N-70 & N-75 Major Cities:

- | | | | |
|--------------|---------------|-------------|-------------|
| 1. Islamabad | 2. Abbottabad | 3. Mansehra | 4. Quetta |
| 5. Swat | 6. Mardan | 7. Murree | 8 Jacobabad |

All remaining Urban Areas will be treated as minor cities with Annual rental charges of Rs. 35,000/- per annum.

(iii) **Revision of Rates**

All the above rates will be revised by NHA Rate Revision Committee, constituted by the Chairman, NHA on annual basis or as the case may be.

(iv) **Payment Methodology:**

Payments will be made in favor of NHA RM Account, Islamabad through bank draft.

(2) **NOC Requirement for Category 1(ii) (a) & (b) Filling/CNG Stations**

- (i) Request of Oil Marketing Company/Ministry of Petroleum (in case of CNG Station).
- (ii) Request from concerned District Nazim/District Coordination Officer (DCO).
- (iii) The dispenser shall be installed outside the NHA's ROW limit. The distance of dispenser (in feet) from edge of the road shall be:

Description	Rural Area	Urban Area	Hilly Area	Mountainous Area
Filling Station	70'	60'	50'	40'
CNG Station	55'	45'	35'	25'

- (iv) The Minimum requirement of plot size (length x depth) in feet, owned or leased by Private Entrepreneur is detailed as under:–

Description	CNG Station	Filling Station
Rural	125' x 150'	150' x 200'
Urban	100' x 100'	125' x 150'
Hilly Areas	75' x 100'	125' x 125'
Mountainous Areas	60' x 80'	75' x 100'

Note: The Competent Authority can relax the requirement of area in square meters on case to case basis after charging the additional fees as described below:

(A) Difference of Area = Required Area for the given category [section 4(2)(iv)] - Actual area
(B) Approach Rental Charges/sq.ft. = $\frac{\text{Approach Rental Charges for the given category [section 4(1)(ii)]}}{\text{Plot size for the given category [section 4(2)(iv)]}}$
(C) Additional Approach Rental Charges = (A) x (B)
(D) Total Approach Rental Charges = Approach rental charges for the given category [section 4(1)(ii)] + C

- (v) Undertaking of Oil Marketing/Gas Company on a Judicial Stamp Paper of Rs 100 for Filling/CNG Stations respectively (**Appendix –I**).
- (vi) Undertaking of Owner (On Stamp Paper of Rs. 100/-) – for Filling/CNG Stations - **Appendix-II**
- (vii) Original Land Ownership Documents (Fard and Aks Shajra or their equivalent documents used in other provinces duly signed by concerned Land Revenue Officer).
- (viii) The applicant shall deposit Rs. 250,000/- (Two hundred and fifty thousands) in the shape of demand draft/pay order in favour of NHA RM Account, Islamabad/Region and provide receipt of Accounts/Revenue Section to RAMD to ensure:
- Construction of cut off drain,
 - Construction of reverse slope of approach roads,
 - Development of road user facilities such as ladies and gents toilets,
 - Provision of drinking water cooler,
 - Provision of tyre shop or air pressure facility,
 - Provision of tuck shop(in areas where no market is available in the vicinity),
 - Provision of prayer room(in case no mosque is available in the vicinity)
 - Provision of fire fighting equipments,
 - Provision of fauna and flora in green belt between approaches and in median in front of amenity,
 - Construction of 50 meter acceleration and deceleration lanes along the road,
 - Provision of lighting arrangements in median according to the attached design, and
 - Fulfillment of all other conditions set forth in NOC/Lease Agreement.

The refundable Cash Security will only be released by General Manager(Operations) after the completion of road user facilities duly verified by Deputy Director(Maintenance) concerned/RAMD Staff or in case of termination of Agreement or cancellation of NOC, as the case may be.

- (ix) Approach road rental charges as detailed in Para 4(1)(ii).
- (x) The No Objection Certificate (NOC) is liable to be canceled at any stage on coming to the notice of the authority that any documentation provided in accordance with any terms and conditions mentioned in the NOC has been obtained/arranged by misrepresentation and in such case advance rental charges deposited by the applicant in favour of NHA RM Account, Islamabad, shall be forfeited.
- (xi) NHA reserves the right to cancel any NOC and re-occupy approach road, without paying any compensation to the filling/CNG station or oil marketing firm as the case may be. In addition to this the applicant will have no objection in handing over the facility without any compensation to the authority in case of road expansion.
- (xii) The Authority reverses the right to cancel the NOC and reoccupy the ROW at any time for its convenience, for the purpose of planned utilization of ROW or if it becomes necessary in the public interest, after serving Ninety (90) days notice to the owner of the amenity. In no event such cancellation of the NOC shall be deemed as default by the Authority under this Agreement. However, the owner of the amenity shall be entitled to some kind of compensation for the carried out civil works within ROW, which is to be fixed by a Sole Adjudicator appointed by the Authority and acceptable to the owner of the amenity, in accordance with the Rules in vogue at that time.
- (xiii) The applicant shall provide eight (08) copies of the layout plan duly verified by concerned Deputy Director (Maintenance), NHA of the proposed Filling/CNG Station which in-variably contain the followings:
 - (a) Distance of the Oil Marketing /Gas Company sign, cut-of-drain, petrol/diesel/CNG pumps and buildings from the centre of nearest carriageway [edge of the berm and the Right of Way (ROW) line].
 - (b) The full extent of the Right of Way (ROW) (both sides).
 - (c) Distance of the nearest existing bridge, filling/CNG station, horizontal or vertical curve or any other obstruction in the sight.
 - (d) Size of plot.
 - (e) Structures to be constructed on the plot with measurements and distances.

- (xiv) Attested photocopies of National Identity Card of the owner/dealer and authorized representative of the Filling/CNG station.
- (3) **Application Processing Procedure:**
- (i) The Applicant/Oil Marketing firm will submit application to DCO (previously DC). He will forward the case to General Manager (Operations)/Region, NHA. The application will be reviewed & applicant informed about the shortcoming, if any, otherwise application will be sent to Deputy Director (Maintenance) concerned or CMC for site verification, checking of Revenue documents, confirmation of land ownership, site condition details.
- (ii) Deputy Director (Maintenance) concerned or Corridor Management Contractor will forward the case along with his recommendations to General Manager (Operations)/(Region) for recommendation and onward transmission to RAMD, NHA, HQ.
- (iii) At HQ, NHA, the case shall be processed by Operation Management Unit of RAMD and shall be sent to General Manager (Operations), who will obtain approval from Competent authority (i.e. Member (Operations)/Chairman NHA). Operation Management Unit of RAMD shall issue NOC to the applicant and shall be the custodian of all the record pertaining to NOC.
- (iv) The applicant shall deposit Rs. 250,000/- (Two hundred and fifty thousands) in the shape of demand draft/pay order in favour of NHA RM Account, Islamabad/Region and provide receipt of Accounts/Revenue Section to RAMD to ensure:
- Construction of cut off drain,
 - Construction of reverse slope of approach roads,
 - Development of road user facilities such as ladies and gents toilets,
 - Provision of drinking water cooler,
 - Provision of tyre shop or air pressure facility,
 - Provision of tuck shop(in areas where no market is available in the vicinity),
 - Provision of prayer room(in case no mosque is available in the vicinity)
 - Provision of fire fighting equipments,
 - Provision of fauna and flora in green belt between approaches and in median in front of amenity,
 - Construction of 50 meter acceleration and deceleration lanes along the road,
 - Provision of lighting arrangements in median according to the attached design, and
 - Fulfillment of all other conditions set forth in NOC/Lease Agreement.

The refundable Cash Security will only be released by General Manager(Operations) after the completion of road user facilities duly verified by Deputy Director(Maintenance) concerned/RAMD Staff or in

case of termination of Agreement or cancellation of NOC, as the case may be.

- (v) The Total processing time for application from the date of complete submission should not exceed thirty (30) days.

(4) Check list for Evaluation for Installation of Filling/CNG station for preparation of Report by Deputy Director (Maintenance) or Corridor Management Contractor.

The respective Dy. Director (Maint) or Corridor Management Contractor shall prepare his report keeping in view the following factors:-

- (a) The Implications of NHA's Development Plan on the Proposal.

In case the proposed site falls within the band likely to be acquired for construction of additional carriageway or for the development of highway related services etc, the matter shall be brought to the notice of Member (Operations) through RAMD office. In such instances, the Oil Marketing Companies/owner of CNG Station will be asked to consider other locations outside the limits determined by NHA in the light of its development plans. Where the land requirement is not specified in the proposed development scheme of NHA, a minimum off set distance as outlined in Rule No. 3 of National Highways and Strategic Roads Control Rules 1998 as amended in 2002 will be recommended for the establishment of building line reckoned from the center line of the existing carriageway, provided further that the recommended plot line lies well outside the limit of the Right of Way.

- (b) The Effect of Proposed Amenities/Filling/CNG Station on Highway Drainage.

If the proposal is likely to obstruct general or specific drainage within the ROW, the applicant will be advised to either relocate the filling/CNG station or make special arrangements for the smooth drainage.

- (c) The Effect of Proposed Filling Station on Flow of Traffic and Highway Safety.

If the proposed site is likely to interfere with the smooth flow of traffic or aggravate an existing problem, or cause an obstruction physically or visually due to its proximity to a bridge or curve, whether horizontal or vertical, the case shall be sent to the Member (Operations) along with all plans and recommendations for decision.

- (d) Estimated Cost and Frequency of Repairs of NHA Assets As a Result of Movement of Traffic to/from the Filling/CNG Station.

The applicant shall be called upon to pay the estimated cost of repairs/maintenance of the highway/related assets in advance for five years in the form of rent/ administrative charges payable annually, prescribed by the authority from time to time.

(e) **Effect of the Maintenance/Operations of Underground Utilities.**

If the proposed site is likely to interfere with the operation/maintenance of an existing utility line or service, the effect thereof shall be estimated by the utility department concerned and necessary steps taken to prevent damage or interference with the existing utility. In case, the affected utility line is to be shifted outside the Right of Way (ROW), the proposed location of the said utility line shall be approved by respective Dy. Director (Maint) or CMC. If for certain unavoidable reasons, the utility line is proposed to be located within the Right of Way, permission shall be required from Member (Operations) and cost shall be borne by the owner of the amenity. Damages caused to Utility Department shall be borne by the owner of amenity.

(f) **Miscellaneous Factors**

The following miscellaneous factors should also be kept in mind while considering requests for grant of NOC:-

- (i). The optimum size of the plot for filling/CNG station shall be in accordance with NOC Requirements. In case the size of the plot is less than the requirements, the applicant shall deposit the fee as prescribed by the authority from time to time. However regarding any variation the final approval will be granted by the competent authority..
- (ii). Proper road safety and information signs, lane marking and lightings (as per site requirements) shall be installed by the owner of the amenity.
- (iii). Removal of a visual obstruction in the median of a divided carriageway which is likely to cause accidents due to lateral movement of traffic to/from the proposed filling/CNG station.

(5) **Offer Letter to the Applicant**

Simultaneously, an offer letter after preliminary review of the case shall be issued to the applicant for his consent as per **Appendix-III** by Director (OMU) or Corridor Management Contractor, which will be valid for one month only and extended for another month after valid justification on case to case basis.

(6) **Approval**

On receipt of report from Dy. Director (Maint.) or Corridor Management Contractor and consent of the applicant, case shall be examined by the General Manager (Operations)/Region thoroughly in the light of National Highways and Strategic Roads (Control) Rules 1998 as amended in 2002 and Regulatory Framework and Standard Operating Procedures – 2002 who shall forward his recommendations to RAMD HQ, Islamabad for processing of approval of Competent Authority [(Member (Operations)/Chairman or Executive Board as the case may be)]. The RAMD shall issue the No Objection Certificate (copy attached as **Appendix-IV**) and sign the lease or license agreement with intimation to General Manager, Regional or Corridor Management Contractor.

OIL MARKETING COMPANY'S UNDERTAKING

We, M/s do hereby undertake to remove the structures to be constructed on the premises of the M/s at , pursuant to this NOC, as and when desired by the National Highway Authority and so directed by its representative through a written notice, within 30 days of receipt of such notice, at our own risk and cost and that no claim for compensation shall lie against the National Highway Authority from the owner, dealer and oil marketing company or their representatives, heirs and successors, consequent thereto.

2. The dispenser shall be installed outside the NHA's ROW limit. The distance of dispenser (in feet) from edge of the road shall be:

<u>Description</u>	<u>Rural Area</u>	<u>Urban Area</u>	<u>Hilly Area</u>	<u>Mountainous Area</u>
Filling Station	70'	60'	50'	40'
CNG Station	55'	45'	35'	25'

3. We will ensure that cut off drains are provided on the approaches of We also ensure construction of road user facilities such as construction of cut off drain, construction of reverse slope of approach roads, development of road user facilities such as ladies and gents toilets, provision of drinking water cooler, provision of tyre shop or air pressure facility, provision of tuck shop(in areas where no market is available in the vicinity), provision of prayer room(in case no mosque is available in the vicinity), provision of fire fighting equipments, provision of fauna and flora in green belt between approaches and in median in front of amenity, construction of 50 meter acceleration and deceleration lanes along the road, provision of lighting arrangements in median according to the attached design, and fulfillment of all other conditions set forth in NOC/Lease Agreement. In case of default by the owner/dealer, we will be responsible to take action as per directions of NHA.

4. We further undertake that we will pay the administrative charges/rent of approaches annually on a single notice from NHA if owner/dealer does not do so.

5. We also undertake that NHA has full right to depute its representative for inspection of our at any time and check services provided to the road users.

6. We shall ensure that ladies/gents toilets shall be kept clean and functional at all times otherwise penalty may be imposed on the owner of the amenity as prescribed by the authority.

7. In case of default, we will comply with the following conditions:-

- (a) "In case the owner of commercial entity/amenity or any Govt/Semi Govt agency owning the utility fails to pay the lease or ground or approach rental charges or fee in due course of time and fail to comply with the instructions of the authority through Dy. Director (Maint) concerned, the owner shall be charged surcharge at the rates given as under:

- (i) 1 month after due date: Surcharge of 10% of ground rental charges or fee
- ii) 2 months after due date: Surcharge of 20% of ground rental charges or fee
- iii) 3 months after due date Surcharge of 30% of ground rental charges or fee
- iv) More than 90 days In case the Lessee does not abide by the provisions contained herein or any dues are outstanding against him for more than ninety (90) days, the Lessor may exercise right to terminate the Agreement forthwith and to seize / retain his articles, goods, materials etc. and remove, sell or dispose off the same in such manner as the Lessor may deem fit without being liable to pay any expenses incurred in connection with such retention, removal or disposal.

b) Remove or stop supply of our products to the at once at our risk and cost without claiming any compensation from NHA.

8. NHA reserves the right to cancel NOC and re-occupy approach road, without paying any compensation to the or Oil Marketing Firm as the case may be. In addition to this the applicant will have no objection in providing the facility without any compensation to the authority in case of road expansion.

9. The Authority reverses the right to cancel the NOC and reoccupy the ROW at any time for its convenience, for the purpose of planned utilization of ROW or if it becomes necessary in the public interest, after serving Ninety (90) days notice to the owner of the amenity. In no event such cancellation of the NOC shall be deemed as default by the Authority under this Agreement. However, the owner of the amenity shall be entitled to some kind of compensation for the carried out civil works within ROW, which is to be fixed by a Sole Adjudicator appointed by the Authority and acceptable to the owner of the amenity, in accordance with the Rules in vogue at that time.

Date

Seal

Notary

Witness:

- 1. _____
- 2. _____

OWNER/DEALER'S UNDERTAKING

I, s/oresident of , Lessee of plot at (..... Bound Carriageway) on N-5, designated site for establishment of Station, do hereby undertake as under:-

(1) The dispenser shall be installed outside the NHA’s ROW limit. The distance of dispenser (in feet) from edge of the road shall be:

<u>Description</u>	<u>Rural Area</u>	<u>Urban Area</u>	<u>Hilly Area</u>	<u>Mountainous Area</u>
Filling Station	70'	60'	50'	40'
CNG Station	55'	45'	35'	25'

(2) That I shall construct cut-off drains on the approaches of the Station. I shall also ensure construction of road user facilities such as construction of cut off drain, construction of reverse slope of approach roads, development of road user facilities such as ladies and gents toilets, provision of drinking water cooler, provision of tyre shop or air pressure facility, provision of tuck shop(in areas where no market is available in the vicinity), provision of prayer room(in case no mosque is available in the vicinity), provision of fire fighting equipments, provision of fauna and flora in green belt between approaches and in median in front of amenity, construction of 50 meter acceleration and deceleration lanes along the road, provision of lighting arrangements in median according to the attached design, and fulfillment of all other conditions set forth in NOC/Lease Agreement..

(3) That I shall not install the OMC’s/GC's sign within 20 meters of the highway berm.

(4) That I shall not construct approaches wider than 10 meters and the same will be paved in their entire width and a slope of 5% maintained from the road berm up to the cut-off drain.

(5) That I shall pay the lease rental charges and rent of approaches to the National Highway Authority before 31st of July each year, payable in advance as required in the NHA Offer Letter in favor of “NHA RM Account, Islamabad”.

(6) That I shall shift or remove the structures and other installations of my amenity from the Right of Way/prescribed ribbon area, as and when called upon to do so through a written notice, from the Authority, without claiming any compensation thereof.

(7) That I shall construct the on the Leased land.

(8) That NHA has full right to depute any of representative for inspection of my amenities area at any time. Directions of NHA inspecting officers will be complied with.

(9) Ladies and gents toilets shall be kept clean and functional at all times otherwise fines/penalty may be imposed as prescribed by the authority.

(10) In case of any fault on my part, following conditions will be complied with:-

- a) Pay lease rental charges with fine as prescribed by NHA.
- b) Remove/stop business of my amenities units at once at my own risk and cost without claiming any compensation from NHA.

Signature
of the Lessee

Thumb Impression
of the Lessee

(Name and NIC number of the Lessee)
(attach photo copy of NIC)

NATIONAL HIGHWAY AUTHORITY
"TYPICAL OFFER LETTER"

No.....
To,

Address.....
Telephone Number.....
Dated:

Subject:- **Offer to Process the NOC for Establishment of Amenity (mention name of OMC/GC and Name/Style of MS/HSD Retail Outlet/Filling/CNG Station etc) at Km to Km on N -).**

With reference to your request for grant of NOC received vide District Coordination Officer (DCO) letter No:..... dated the Authority shall process grant of No Objection Certificate for establishment of (specific amenity/Filling Station etc.) at Km to km on (N.....) as shown on the layout plan, subject to fulfillment of the following conditions:-

- a. You will pay Rs..... (Rupees only) per annum on account of administrative charges/land rent. First five year's dues are payable in advance by bank draft/pay order drawn in favor of NHA RM Account, Islamabad. The charges will be revised periodically. In case of non payment of dues, the NOC will be withdrawn.
- b. The NOC shall be without prejudice to the rights of NHA to acquire land and property under the relevant land acquisition rules/laws. The NOC/registration fee shall be Rs. 50,000/- which is non-refundable.
- c. The dispenser shall be installed outside the NHA's ROW limit. The distance of dispenser (in feet) from edge of the road shall be:

<u>Description</u>	<u>Rural Area</u>	<u>Urban Area</u>	<u>Hilly Area</u>	<u>Mountainous Area</u>
Filling Station	70'	60'	50'	40'
CNG Station	55'	45'	35'	25'

- d. You will not construct any openings in the median to allow movement of traffic across the adjoining carriageway through the median, thereby creating a traffic hazard.
- e. Eight (08) copies of the layout plan shall be submitted for approval of the Authority. The layout plan must contain "1 Km" Trading Area Plan. The distance of sign, cut-off-drain, MS/ HSD dispensers and kiosk shall be shown with reference to center line of the nearest carriageway, edge of berm and the ROW line. The full extent of the ROW (both sides) will also be clearly indicated on the plan. In case of any change in the layout plan, the

revised plan will be submitted for approval of the Authority through proper channels.

- f. You will construct cut-off-drain astride both the approaches, along the Right-of-Way line as per typical design issued by NHA (copy enclosed). You will furnish refundable cash security to the Authority amounting to Rs..... (Rupees..... only) as an earnest of your intent to construct the reverse slope of approach roads and other road user facilities such as ladies and gents toilets, provision of drinking water cooler, provision of tyre shop or air pressure facility, provision of tuck shop(in areas where no market is available in the vicinity), provision of prayer room(in case no mosque is available in the vicinity), provision of fire fighting equipments, provision of fauna and flora in green belt between approaches and in median in front of amenity, construction of 50 meter acceleration and deceleration lanes along the road, provision of lighting arrangements in median according to the attached design, and fulfillment of all other conditions set forth in NOC/Lease Agreement.. The refundable cash security will be released after requisite certification by the Dy. Director (Maintenance) concerned/RAMD Staff upon satisfactory completion of the work. If cut-off drain and other road user facilities aforementioned are not provided as per drawing, the refundable cash security will be forfeited and said work will be completed by NHA out of this amount at your risk and cost.
- g. Acceleration/deceleration (entry/exit) lanes will be provided by you as per approved design of NHA. Length of the lane may vary from 50m to 200m, depending upon the site condition. These special lanes will not be required if the building line of the existing outlet is set back/shifted beyond the 220 ft or prescribed ribbon development limit.
- h. Distance of the nearest existing bridge, filling station and horizontal or vertical curve or any obstruction placing limitation on sight distance, if any, will be shown on the plan or in an attached Annexure.
- i. The access road from the facility to the edge of the main carriageway shall be paved in its entire width. It shall not be more than 10 meters in width and it shall have a slope of 5% from the edge of the highway berm upto the cut-off drain.
- j. The signs shall not be less than 20/10 meters from the edge of the road berm in case rural and urban areas respectively.
- k. In case of any deviation from the above mentioned conditions or other directions of NHA, the NOC shall be withdrawn forthwith.
- l. Delay in payment of annual approach/lease rental charges will be liable to fine as prescribed by NHA/cancellation of NOC.
- m. Authorized officers of NHA will inspect your project from time to time to ensure fair services to the road users and fulfillment of terms and conditions of NOC. You will provide full co-operation/assistance to the inspecting officers.

- n. You will start construction work at site within one year after issuance of NOC, otherwise the NOC stands cancelled.
- o. You will not allow construction of any other amenity on your plot. A separate lease / rent will be charged if an additional amenity is to be established subject to NOC by this authority.
- p. You will give undertaking to this effect that clean wash room/toilet facility would be provided for the use of general public round the clock.
- q. The owner of Filling/CNG Station shall plant/grow and maintain shrubs/flowers in between approaches and median in front of the amenity.
- r. Dimensions of Plot

The minimum dimensions of the plot (length x depth) in feet shall be:–

<u>Description</u>	<u>CNG Station</u>	<u>Filling Station</u>
Rural	125' x 150'	150' x 200'
Urban	100' x 100'	125' x 150'
Hilly Areas	75' x 100'	125' x 125'
Mountainous Areas	60' x 80'	75' x 100'

Note: The plot size can vary as per available Government Land in NHA Right of Way (ROW). The above minimum requirements is for the guidance of applicants. However, dimension along the road, shall not be less than 15% of dimensions mentioned above, i.e. a length of 100 feet may only be reduced upto 85 feet.

2. If above conditions are acceptable to you, confirmation thereof may kindly be conveyed to this office in the form of separate affidavits, rendered in accordance with the attached Performa bearing the title "Owners/Dealers Undertaking" and the "Oil Marketing Company's Undertaking", so that the case may be processed.

3. This offer stands cancelled if no response is received from your side within one month.

Dy. Director (Maintenance) (Name in full)

C.C.

Member (Operations) NHA, Islamabad.
 General Manager (Region)
 General Manager (Operations)
 District Coordination Officer
 File

APPENDIX-IV

NATIONAL HIGHWAY AUTHORITY "TYPICAL NOC LETTER"

Address: 27 Mauve Area, G-9/1, Islamabad

Telephone Number: 051-9261148

No.....

Dated:

Subject: - Grant of No Objection Certificate (NOC) for Installation of
at Km on N....., (M/s District)

Reference: With reference your letter No. dated on the above subject.

Consequent upon fulfillment of conditions by the M/s (*name of Oil Marketing Firm*), as specified in Asstt./Dy Director (Maint.), NHA or CMC letter No....., dated through General Manager (*concern*), NHA, it has been decided by the Authority to grant NOC for the establishment of a Filling/CNG Station on plot Khasra No. on N....., (M/s.....), at Km....., District, in accordance with the approved plan.

2. Copy of approved layout plan is enclosed herewith.
3. This NOC is conditional and will be valid for one year only to start and complete the construction work.
4. The applicant/retailer will ensure the fulfillment of following conditions: -
 - a. Provision of Public facilities such as Toilets for Ladies/Gents with marble/ceramic tiles and washrooms. Toilet shall be clean and functional at all time and shall be available for public use. NHA official will periodically check the facilities as mentioned in clause 4 sub section 'a' to 'q' and if these facilities are found out of order / not upto required standard, the lessee/lessor shall be warned/fined (or penalties imposed as prescribed by the authority) and if he fails to improve his license shall stand cancelled.
 - b. Provision of Tyre Shop and Tuck Shop.
 - c. Provision of permanent drinking water arrangements.
 - d. No temporary/permanent construction like advertisement boards, fountain etc between drain and the nearest carriageway.
 - e. Relocation/protection of all utilities like WAPDA, Telephone Underground/Over head Cables, Suigas installations etc, at your own risk & Cost.
 - f. There shall be nothing repugnant to any Government order or policy on the subject.
 - g. Should it become necessary in the public interest the owner shall remove all the structure within (220) feet from the center line of the road within 30 days of notice from the Department at his own expenses and without any compensation what ever on this account.
 - h. The No Objection Certificate /Approval are subject to the application of any bye Law/Rules of local body concerned.
 - i. The Owner will not be authorized to erect any sort of structure other than mentioned in the enclosed plan and further until and unless agreement is executed with NHA.
 - j. A Slab/Pipe culvert as Cut Off drain Should be provided underneath the approach for proper cross drainage of Rain/Flood water. Besides, the drains with grating shall also be

provided on approaches to ensure proper drainage and to stop the water coming to road. Proper brick pavement on the shoulders should be accomplished by the company in full length in frontage of the Petrol Pump/CNG station.

- k. This No Objection certificate is subject to approval of the other Agencies including District Administration.
 - l. This No Objection Certificate is subject to the condition that final NOC will be issued by the District Coordination Officer concerned.
 - m. The Drainage of Petrol Pump/CNG station should be kept away from the road and level of open area be kept at least one foot lower than the road.
 - n. Provision of acceleration & deceleration lanes as service road as per NHA standard design.
 - o. Provision of streetlight by installing streetlight poles in the median @ 35 meters c/c distance in front of facility.
 - p. Land scaping of area in the median and in front of the amenity including acceleration & deceleration lanes.
 - q. This NOC is liable to be cancelled at any stage on coming to the notice of National Highway Authority of any of the terms and conditions mentioned above or of that any is found to be bogus or has been obtained/arranged by mis-representation. In such case the ground rental charges deposited as advance of five years and refundable cash security shall be forfeited in favor of NHA RM Account, Islamabad.
- i. In case of non-compliance of any of above conditions, NOC will be cancelled and entry/exit lanes shall be blocked.
- ii. The officers of NHA or CMC will randomly visit the sites with regard to above conditions.

Director (OMU)

Chapter 2 For information and taking necessary action

Dy. Director (Maint concern) (1) Please ensure that the conditions specified in the offer of NOC are complied with. In case of non-compliance, the work should be stopped and the matter reported to this office for cancellation of NOC.

(2) Two certified prints of the layout plan are enclosed herewith. Please hand over one of the drawings to D.D O&M/Maint. Concerned for monitoring the work.

M/s (Oil Marketing Firm) For information and taking necessary action.

Owner/Dealer Please ensure compliance with the conditions governing the grant of NOC in the light of our offer letter/SOP already accepted by you.

Director (OMU)

C.C.

- Member (Operations), NHA
- General Manager (Operations)
- General Manager (Region), NHA

CHAPTER - V

Lease of Government Land for the Erection of Hotels/Motels, Restaurants, Kiosks, Khokhas and other Amenities

1. The Procedure for processing of lease agreement with owner of Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities for leasing Government land on ground rental charges is prescribed as under:

(1) The owner/firm/person or agency shall submit an application comprising of the followings:

(i) **Proposed Locations**

Precise location of proposed Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities along with drawings/layout plans [photographs if required]. The applicant shall contact respective Deputy Director (Maintenance) or Corridor Management Contractor for guidance and pin pointing the locations within the NHA Right of Way (ROW).

Eight (08) copies of the layout plan of the proposed Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities which in-variably contain the following:-

- (a) Distance of the Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities, sign, cut-of-drain, and buildings from the centre of nearest carriageway [edge of the berm and the Right of Way (ROW) line].
- (b) Distance of the nearest existing bridge, Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities, horizontal or vertical curve or any other obstruction in the sight.
- (c) Attested photocopies of National Identity Card of the owner/dealer and authorized representative of the Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities.

(ii) **Dimensions of Plot**

Plot size shall be as per requirement of the interested firm or person or government agency. The plot size can vary as per available Government Land in NHA Right of Way (ROW). The area

of the land to be leased shall be clearly mentioned in square meters on the lease agreement and ferro plan accompanying it.

(iii) **Development of Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities and its related works**

(a) Development of Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities and its related works will be the responsibility of the firm, person or agency). NHA will approve the building plans and drawings as per conditions set forth.

(b) Under Taking of owner of the Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities (On Rs 100- Stamp Paper).

(iv) **Safety Specifications**

(a) The Effect of Proposed Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities on Flow of Traffic and Highway Safety.

If the proposed site is likely to interfere with the smooth flow of traffic or aggravate an existing problem, or cause an obstruction physically or visually due to its proximity to a bridge or curve, whether horizontal or vertical, the case shall be sent to the Member (Operations) along with all plans and recommendations for decision.

(v) **Road User Facilities**

The interested parties shall illustrate in their proposal which sort of road User Facilities will be developed by them. The Facilities must be provided by the firm, person or agency or Concessionaire are:

- Construction of cut off drain,
- Construction of reverse slope of approach roads,
- Development of road user facilities such as ladies and gents toilets,
- Provision of drinking water cooler,
- Provision of tyre shop or air pressure facility,
- Provision of tuck shop(in areas where no market is available in the vicinity),
- Provision of prayer room(in case no mosque is available in the vicinity),
- Provision of fire fighting equipments,
- Provision of fauna and flora in green belt between approaches and in median in front of amenity,
- Depending upon the site condition, construction of 50m to 200m acceleration and deceleration lanes along the road,

- Provision of lighting arrangements in median according to the attached design, and
- Fulfillment of all other conditions set forth in NOC/Lease Agreement.

In addition to this the firms or person or agency may include any other facility they consider necessary for road users.

(vi) **Technical Proposal**

- (a) Should include detailed methodology for establishment of Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities.
- (b) The owner of the amenity or agency shall specify the nature of Business with all technical details.

(vii) **Lease Period**

- (a) **Immovable Property like Hotels/Motels, Restaurants etc. etc.**

The lease agreement shall be for thirty (30) years (Maximum) or for the period prescribed by the authority and value of the land shall be assessed every three (3) years or on annual basis or as prescribed by the authority.

- (b) **Movable Property like Nurseries, kiosks, Khokhas, Vendor Stalls etc**

The lease agreement shall be for thirty (30) years (Maximum) or for the period prescribed by the Chairman NHA and value of the land shall be assessed every three (3) years or on annual basis or as prescribed by the Authority.

(viii) **Financial Proposal**

The financial offer shall be in the form of annual ground rental charges for a period of thirty (30) years which shall be in excess of 5% (minimum) of the assessed and notified value of land by the District Revenue Officer in case of immovable property and 2½% (minimum) in case of movable property. These charges shall be paid annually in advance or 3 years in advance or as prescribed by the authority in the Lease Agreement from the date of assessment and shall be subject to increase. The rate of increase for the annual ground rental charges shall be the same as that of the increase in the value of land notified by the District Revenue Officer from time to time during the currency of lease period and shall be adjusted on annual basis or after each 03 years period or as prescribed by the authority in the Lease Agreement.

(ix) Ground Rental Charges

The lease charges shall be assessed on the following percentages for Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities:

Immovable Property like Hotel/ Motels, Restaurants, other Structure and amenities etc.	Minimum 5% of the land value assessed and notified by District Revenue Officers or any other prescribed authority for this purpose
Movable Property like Nurseries, Khokhas, Vendor Stalls Orchards, Kiosks, etc. etc.	Minimum 2½% of the land value assessed and notified by District Revenue Officers or any other prescribed authority for this purpose

(x) Registration/NOC Fee

The registration/NOC fee shall be Rs. 20,000/- in favor of NHA RM Account, Islamabad for each Hotels/Motels, Restaurants, Kiosks, Khokhas and other amenities (movable / immovable) which shall be non-refundable.

(xi) Refundable Cash Security

The financial proposal must be accompanied with a Refundable Cash Security in favor of NHA RM Account, Islamabad/Region as prescribed under:

i. Immovable Property Hotel/ Motels, Restaurants, other Structure and amenities etc.	Rs. 50,000/-
ii. Movable Property like Nurseries, Orchards, Kiosks, etc. etc.	Rs. 20,000/-
iii. Khokhas, Vendor Stalls	Nil

The applicant shall deposit the above mentioned amount in the shape of demand draft/pay order in favor of NHA RM Account, Islamabad/Region and provide receipt of Accounts/Revenue Section to RAMD to ensure construction of cut off drain, reverse slope of approach roads, development of road user facilities such as ladies and gents toilets, drinking water cooler, tyre shop or air pressure, tuck shop (in areas where no market is available to road users in the vicinity), prayer room (in case no mosque is available in the vicinity), fire fighting equipment, provision of fauna and flora in green belt between approaches and median in front of amenity and all other conditions set forth in NOC/Lease

Agreement. The Refundable Cash Security will only be released by General Manager (Operations) after the completion of the road user facilities duly verified by the Dy. Director (Maintenance) concerned / RAMD Staff OR in case of termination of Agreement OR cancellation of NOC, as the case may be.

However, for movable property like nurseries, khokhas, vendor stalls, orchards etc. construction of ladies and gents toilets, tyre shop, tuck shop, pray room is not a requirement. The Refundable Cash Security will only be released by General Manager (Operations) after the completion of the amenity duly verified by the Dy. Director (Maintenance) concerned / RAMD Staff OR in case of termination of Agreement OR cancellation of NOC, as the case may be.

(xii) **Agreement**

An agreement on a stamp paper of worth equivalent to 4% of one year ground rental charges would be duly executed under sub-section 1 & 2 of rule 13 & 14 of National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002 by the two parties. The expenses for providing the stamp paper shall be borne by the lessee. Where Government is the lessee it is exempted from stamp duty.

(xiii) **Termination Notice in case of any dispute**

In case of any dispute, either party shall have the right to terminate the Contract Agreement after serving ninety (90) days notice for termination to the other party.

(xiv) **Termination of Contract in Public Interest**

The Authority reverses the right to terminate the Lease Agreement at any time for its convenience, for the purpose of planned utilization of leased land or if it becomes necessary in the public interest, after serving Ninety (90) days notice to the Lessee. In no event such termination shall be deemed as default by the Authority under this Agreement. However, the Lessee shall be entitled to some kind of compensation for the carried out civil works on the leased land, to be fixed by a Sole Adjudicator appointed by the Authority and acceptable to the Lessee in addition to allotment of an alternate site, if available, in accordance with the Rules in vogue at that time.

(2) **Already Established Installations:-**

- (a) The ground rental at the rate of 5% (minimum) or as prescribed by the authority for already established installations within NHA ROW like immovable property, Hotels/Motels, Restaurants etc. and 2½% (minimum) or as prescribed by the authority for movable property like nurseries, khokhas, vendor stalls, kiosks etc. of assessed value of the land by District Revenue Officers or any other prescribed authority shall be charged with effect from 1st July, 1999.

(b) **Registration/NOC Fee**

The registration/NOC fee shall be Rs. 20,000/- in favor of NHA RM Account, Islamabad for each Hotels/Motels, Restaurants, whereas NOC fee for Kiosks, Khokhas and other amenities (movable / immovable) shall be Rs. 5,000/-, which shall be non-refundable.

(c) **Agreement**

An agreement on a stamp paper of Rs. 200/- would be duly executed under sub-section 1 &2 of rule 13 & 14 of National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002 by the two parties. The expenses for providing the stamp paper shall be borne by the lessee. Where Government is the lessee it is exempted from stamp duty.

(d) **Termination Notice in case of any dispute**

In case of any dispute, either party shall have the right to terminate the Contract Agreement after serving ninety (90) days notice for termination to the other party.

(e) **Termination of Contract in Public Interest**

The Authority reverses the right to terminate the Lease Agreement at any time for its convenience, for the purpose of planned utilization of leased land or if it becomes necessary in the public interest, after serving Ninety (90) days notice to the Lessee. In no event such termination shall be deemed as default by the Authority under this Agreement. However, the Lessee shall be entitled to some kind of compensation for the carried out civil works on the leased land, to be fixed by a Sole Adjudicator appointed by the Authority and acceptable to the Lessee in addition to allotment of an alternate site, if available, in accordance with the Rules in vogue at that time.

(3) **Methodology of Payment:**

All payments will be made in favor of NHA RM Account, Islamabad. through bank draft/pay order.

CHAPTER VI

NOC Requirement for Approach Rental Charges for using NHA land for approaches to Amenities installed out of NHA Right of Way (ROW) such as Industries, Hotels, Commercial Markets, Restaurants, Shops, Tea Stalls etc.

1. Provisions and Regulations

(1) NHA shall charge the approach rental charges for using NHA land as approach road as per rule 12 of National Highways and Strategic Roads (Control Rules) Rules 1998, as amended in 2002 from already established and future installations of commercial amenities like Industries, Hotels, Commercial Markets, Restaurants, Shops, Tea Stalls etc.

(2) Registration/NOC Fee

The registration/NOC fee shall be Rs. 20,000/- in favor of NHA RM Account, Islamabad for each new installation of amenities using NHA ROW for approaches like Industries, Hotels, Commercial Markets, Restaurants, Shops, Tea Stalls etc. which shall be non-refundable.

(3) The Dy. Director (Maintenance) or Corridor Management Contractor for respective sections shall administer the related affairs.

(4) Approach road ground rentals shall be charged at the following rates:

	Major Cities	Minor Cities	Rural
Category-1			
1) Industry/Hotel/Motel /Market (more than 10 shops) Factories/Mills, Restaurant & workshop (more than 1 kanal area) Cinema	Rs. 15,000/- per year	Rs 10,000/-	Rs 10,000/-
Category-2			
1) Driver Hotel, Car/Furnit. Showroom, Restaurant & Workshop (less than 1 kanal area), Kilns, Marriage Hall	Rs 7,000/- per year	Rs. 5,000/-	Rs. 5,000/-

Category-3

1) Service Station Shops/ Khokhas, Tea stall etc. etc.	Rs. 2,000/- per year	Rs. 1,000/-	Rs. 1,000/-
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(5) **Approach/Access Road Rental Charges** shall be paid for 1st five years in advance or on annual basis on case to case basis as approved by the Member (Operations). The owner of the amenity shall deposit the ground rental charges in advance on yearly basis by 31st July of every financial year.

(6) **Revision of Rates**

All the above rates will be revised by the NHA Rate Revision Committee appointed by Chairman, NHA on annual basis or as the case may be.

(7) The Dy. Director (maintenance) or CMC shall ensure that the owner of the commercial amenity deposit the approach ground rental charges in advance by 31st July of every financial year.

(8) Precedent procedures, same as for the Filling /CNG station, will be applied in the case of public amenities for the above categories 1 and 2.

(9) **Existing Amenities**

All the existing amenities like Hotels, Motels, restaurants etc. will be registered by NHA. Proper inventories will be developed and approach rental charges collected by Dy. Director (Maintenance) or CMC in case of Corridor Management agreement. All the owners of amenities will be forced to fulfill the criteria for construction of ladies and gents toilets and construction of drains in case of Category 1 amenities. The approach rental charges for the existing amenities will be the same as fixed for the above section 1(4). For Existing Amenities, the procedure for application listed below for future installation will be followed except for provision of bank guarantee and NOC registration fees as given at section 2(v) & (vi), where Bank Guarantee @ Rs. 100,000/- (for Category-I) as Performance Guarantee is essential requirement. However, Dy. Director (Maintenance) or Corridor Management Contractor shall ensure that the existing amenity of Category I has all requirement as enlisted in case of future construction against the Bank Guarantee. The owners of existing amenities shall pay the approach rental charges on yearly basis commencing from July 1999.

(10) NHA reserves the right to cancel any NOC and re-occupy approach road, without paying any compensation to the filling/CNG station or oil marketing firm or any other amenity as the case may be. In addition to this the applicant will have no objection in providing the facility without any compensation to the authority in case of road expansion.

(11) The Authority reverses the right to cancel the NOC and reoccupy the ROW at any time for its convenience, for the purpose of planned utilization of ROW or if it becomes necessary in the public interest, after serving Ninety (90) days notice to the owner of the amenity. In no event such cancellation of the NOC shall be deemed as default by the Authority under this Agreement. However, the owner of the amenity shall be entitled to some kind of compensation for the carried out civil works within ROW, which is to be fixed by a Sole Adjudicator appointed by the Authority and acceptable to the owner of the amenity, in accordance with the Rules in vogue at that time.

2. **Standard Operating Procedure for Amenities Like Industries, Hotels/Motels, Restaurants, Shops, Khokhas, Kiosks etc. etc. (Applicable Only For The Categories 1 And 2)**

(1) **Future Construction/Installations**

- (i) Request of the Owner
- (ii) The distance of amenity from centerline of nearest carriageway.
- (iii) Undertaking of Owner (On Stamp Paper of Rs. 100/-) that as and when the land will be required by NHA for road improvement, no compensation shall be paid for removal of structures - **Appendix-V.**
- (iv) Land Ownership Documents (original Farad and Aks Shajra) signed by concerned Land Revenue Officer.
- (v) Non-Refundable NOC Charges of Rs 20,000/- in favor of NHA RM Account, Islamabad.
- (vi) Refundable Cash Security @ Rs. 50,000/- (for Category-1) and Rs. 20,000/- (for Category 2) as Performance Guarantee to ensure construction of cut-off drain, ladies and gents toilets, drinking water, slope of approach road as per the conditions set forth in NOC.
- (vii) Attested photo copies of NICs of the owners.
- (viii) Eight (08) copies of the layout plan of the proposed public amenities which in-variably contain the following:-
 - a) Distance of the advertisement sign, cut-of-drain, and buildings from the center of nearest carriageway (edge of the berm and the ROW line).
 - b) The full extent of the ROW (both sides).
 - c) Distance of the nearest existing bridge, horizontal or vertical curve or any other obstruction in the sight.
 - d) Size of plot.
 - e) Structures to be constructed on the plot with measurements and distances.
- (ix) Proof of ownership/concession lease document of the land upon which the amenity is proposed.

(x) Payment Methodology

All payment will be made in favor of NHA RM Account, Islamabad, through bank draft/pay order.

(3) **Application Processing Procedure:**

- (i) The owner of the amenity will submit application to Dy. Director (Maintenance) or CMC in case of Corridor Management Contract or General Manager (Operations) directly. The application will be reviewed & applicant informed about the shortcomings, if any. Otherwise application will be processed for site verification, checking of Revenue documents, confirmation of ownership, site condition details.
- (ii) Deputy Director (Maintenance) or Corridor Management Contractor will forward the case along with his recommendations to General Manager (Region) for recommendation and onwards submission to RAMD, NHA, HQ.
- (iii) At HQ, NHA, the case shall be processed by Operation Management Unit of RAMD and shall be sent to General Manager (Operations), who will obtain approval from Competent authority [i.e. Member (Operations)]. Operation Management Unit of RAMD shall issue NOC to the applicant and shall be the custodian of all the record pertaining to NOC.

The applicant shall deposit Rs. 50,000/- or 20,000/- (as the case may be) in the shape of demand draft/pay order in favour of NHA RM Account, Islamabad/Region and provide receipt of Accounts/Revenue Section to RAMD to ensure:

- Construction of cut off drain,
 - Construction of reverse slope of approach roads,
 - Development of road user facilities such as ladies and gents toilets,
 - Provision of drinking water cooler,
 - Provision of tyre shop or air pressure facility,
 - Provision of tuck shop(in areas where no market is available in the vicinity),
 - Provision of prayer room(in case no mosque is available in the vicinity)
 - Provision of fire fighting equipments,
 - Provision of fauna and flora in green belt between approaches and in median in front of amenity,
 - Construction of 50 meter acceleration and deceleration lanes along the road,
 - Provision of lighting arrangements in median according to the attached design, and
 - Fulfillment of all other conditions set forth in NOC/Lease Agreement.
- The refundable Cash Security will only be released by General Manager(Operations) after the completion of road user facilities duly verified by Deputy Director(Maintenance) concerned/RAMD Staff or in case of termination of Agreement or cancellation of NOC, as the case may be.

(vi) The Total processing time for application from the date of complete submission should not exceed thirty (30) days.

(4) **Check list** for Evaluation for Installation of the new amenity for Category 1 & 2 for preparation of Report by Deputy Director (Maintenance) or Corridor Management Contractor.

The respective Dy. Director (Maint) or Corridor Management Contractor shall prepare his report keeping in view the following factors:-

(i). **The Implications of NHA's Development Plan on the Proposal.**

In case the proposed site falls within the band likely to be acquired for construction of additional carriageway or for the development of highway related services etc, the matter shall be brought to the notice of Member (Operations) through RAMD office. In such instances, the owner of the amenity will be asked to consider other locations outside the limits determined by NHA in the light of its development plans. Where the land requirement is not specified in the proposed development scheme of NHA, a minimum off set distance as outlined in Rule No. 3 of National Highways and Strategic Roads Control Rules 1998 as amended in 2002 will be recommended for the establishment of building line reckoned from the center line of the existing carriageway, provided further that the recommended plot line lies well outside the limit of the Right of Way.

(ii). **The Effect of Proposed Amenities on Highway Drainage.**

If the proposal is likely to obstruct general or specific drainage within the ROW, the applicant will be advised to either relocate the amenity or make special arrangements for the smooth discharge of drainage.

(iii) **The Effect of Proposed amenities on Flow of Traffic and Highway Safety.**

If the proposed site is likely to interfere with the smooth flow of traffic or aggravate an existing problem, or cause an obstruction physically or visually due to its proximity to a bridge or curve, whether horizontal or vertical, the case shall be sent to the competent authority along with all plans and recommendations for decision.

(iv) **Estimated Cost and Frequency of Repairs of NHA Assets As a Result of Movement of Traffic to/from the amenities.**

The applicant shall be called upon to pay the estimated cost of repairs/maintenance of the highway/related assets in advance for five years in the form of rent/ administrative charges payable annually, prescribed by the authority from time to time.

(v) **Effect of the Maintenance/Operations of Underground Utilities.**

If the proposed site is likely to interfere with the operation/maintenance of an existing utility line or service, the effect thereof shall be estimated by the utility department concerned and necessary steps taken to prevent

damage or interference with the existing utility. In case, the affected utility line is to be shifted outside the Right of Way (ROW), the proposed location of the said utility line shall be approved by respective Dy. Director (Maint). If for certain unavoidable reasons, the utility line is proposed to be located within the Right of Way, permission shall be required from Member (Operations) and cost shall be borne by the owner of the amenity. Damages caused to Utility Department shall be borne by the owner of amenity.

(vi) **Miscellaneous Factors**

The following miscellaneous factors should also be kept in mind while considering requests for grant of NOC:-

- (a) Proper road safety and information signs, lane marking and lightings (as per site requirements) shall be installed by the owner of the amenity.
- (b) Removal of a visual obstruction in the median of a divided carriageway which is likely to cause accidents due to lateral movement of traffic to/from the proposed amenity.

(5) **Offer Letter to the Applicant**

Simultaneously, an offer letter after preliminary review of the case shall be issued to the applicant for his consent as per **Appendix-VI** which will be valid for one month only and extended for another month after valid justification on case to case basis.

(6) **Approval**

On receipt of report from Dy. Director (Maint.) or Corridor Management Contractor and consent of the applicant, case shall be examined by the General Manager (Operations)/(Region) thoroughly in the light of National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002 and Regulatory Framework and Standard Operating Procedures – 2002 and submit his recommendations to RAMD HQ, Islamabad for processing of approval of Competent Authority [Member (Operations) or Chairman NHA]. The RAMD shall issue the No Objection Certificate (**Appendix-VII**) and sign the lease or license agreement with intimation to General Manager (Region) or Corridor Management Contractor.

OWNER UNDER TAKING

I, (dealer's name) s/o resident of, owner/lessee of plot (survey/khasra No. village, Tehsil and District) (attach proof of ownership/concession lease) the designated site for establishment of bearing the name/style of situated at (state Kilometer and Section of National Highway (N.....) do hereby undertake as under:-

(1) I will not construct nor cause to be constructed any building or structure within 220 feet from the centre line of the nearest carriageway, except where expressly prior approval of National Highway Authority will be obtained and conditions stipulated therewith be complied.

(2) That I shall construct cut-off drains on the approaches of the amenity and ensure that adverse drainage towards the highway embankment is not caused due to construction or operation of my amenity.

(3) That I shall not install the advertisement sign within 10 meters (Urban=10m, Rural=20m) of the highway berm.

(4) That I shall not construct approaches wider than 10 meters and the same will be paved in their entire width and a slope of 5% maintained from the road berm up to the cut-off drain. I further undertake to develop the area between the approaches and median in front of the amenity by providing fauna & flora.

(5) That I shall pay the administrative charges/rent of approaches to the National Highway Authority before 31st July of each financial year. For first five years, dues payable in advance as required in the offer of NOC in the form of a Demand Draft/ Pay Order of Rs..... (No..... dated:.....) drawn "in favor of NHA RM Account, Islamabad" is enclosed.

(6) That I shall shift or remove the structures and other installations of my amenity (.....) from the Right of Way/proscribed ribbon area, as and when called upon to do so through a written notice, from the Authority, without claiming any compensation therefore.

(7) That I shall construct the amenity on my privately owned/leased land.

(8) That NHA has full right to depute any of representative for inspection of my amenities area at any time. Directions of NHA inspecting officers will be complied with.

(9) In case of any fault on my part, following conditions will be complied with:-

(i) Pay lease rent with fine as prescribed by NHA.

(ii) Remove/stop business of my amenities units at once at my own risk and cost without claiming any compensation from NHA.

Date/place and Stamp
of Notary Public

Signature of Owner
Name in full
NIC Number
(attach photocopy of NIC)

Thumb
Impression of owner
(left hand)

APPENDIX-VI

NATIONAL HIGHWAY AUTHORITY
"TYPICAL OFFER LETTER"

No.....
Address.....
Telephone Number.....
Dated:

To,

Subject:- Offer to Process the NOC for Establishment of Amenities (Mention name) Km to Km on N.....).

With reference to your request for grant of NOC received vide District Coordination Officer (DCO) letter No:..... dated the Authority shall process grant of No Objection Certificate for establishment of (specific amenity.) at Km to km on (N.....) as shown on the layout plan, subject to fulfillment of the following conditions:-

- a. You will pay Rs..... (Rupees..... only) per annum on account of administrative charges/land rent, first five year's dues payable in advance by bank draft/pay order drawn in favour of NHA RM Account, Islamabad. The charges will be revised periodically. In case of non payment of dues, the NOC will be withdrawn.
- b. The NOC shall be without prejudice to the rights of NHA to acquire land and property under the relevant land acquisition rules/laws. The NOC/registration fee shall be Rs. 20,000/- - Non-refundable.
- c. The Building line of the proposed amenity will be at a distance of 220 ft from the center line of the nearest carriageway.
- d. You will not construct any openings in the median to allow movement of traffic across the adjoining carriageway through the median, thereby creating a traffic hazard.
- e. Eight (08) copies of the layout plan shall be submitted for approval of the Authority. The layout plan must contain "10 Km" Trading Area Plan. The distance of sign, cut-off-drain, shall be shown with reference to centre line of the nearest carriageway, edge of berm and the ROW line. The full extent of the ROW (both sides) will also be clearly indicated on the plan. In case of any change in the layout plan, the revised plan will be submitted for approval of the Authority through proper channels.
- f. You will construct cut-off-drain astride both the approaches, along the Right-of-Way line as per typical design issued by NHA (copy enclosed). You will

provide a Refundable Cash Security to the Authority amounting to Rs..... (Rupees..... only) as an earnest of your intent to construct the cut-off drain as per specification. The Refundable Cash Security will be released after requisite certification by the Dy. Director (Maintenance) concerned/RAMD Staff or CMC upon satisfactory completion of the work. If cut-off drain will not be provided as per drawing, the Refundable Cash Security will be forfeited and said work be completed by NHA out of this amount at your risk and cost.

- g. Acceleration/deceleration (entry/exit) lanes will be provided by you for existing amenities only as per approved design of NHA i.e. 100m service line of entry and 100m of exit. These special lanes will not be required if the building line of the existing outlet is set back/shifted beyond the 220 ft or as prescribed ribbon development limit.
 - h. Distance of the nearest existing bridge, filling station and horizontal or vertical curve or any obstruction placing limitation on sight distance, if any, will be shown on the plan or in an attached annexure.
 - i. The access road from the facility to the edge of the main carriageway shall be paved in its entire width. It shall not be more than 10 meters in width and it shall have a slope of 5% from the edge of the highway berm upto the cut-off drain.
 - j. The signs shall not be less than 20/10 meters from the edge of the road berm in case rural and urban areas respectively.
 - k. In case of any deviation from the above mentioned conditions or other directions of NHA, the NOC shall be withdrawn forthwith.
 - l. Delay in payment of annual approach/lease rental charges will be liable to fine as prescribed by NHA/cancellation of NOC.
 - m. Authorized officers of NHA will inspect your project from time to time to ensure fair services to the road users and fulfillment of terms and conditions of NOC. You will provide full co-operation/assistance to the inspecting officers.
 - n. You will start construction work at site within one year after issuance of NOC, otherwise the NOC stands cancelled.
 - o. You will not allow construction of any other amenity on your plot. A separate lease rent will be charged if an additional amenity is to be established subject to NOC by this authority.
 - p. You will give undertaking to this effect that clean wash room/toilet facility would be provided for the use of general public.
2. If above conditions are acceptable to you, confirmation thereof may kindly be conveyed to this office in the form of separate affidavits, rendered in accordance with the

attached performa bearing the title "Owners Undertaking" so that the case may be processed.

3. This offer stands cancelled if no response is received from your side within one month.

Dy. Director (Maintenance) or MC
(Name in full)

C.C.

Member (Operations) NHA, Islamabad
General Manager (Operations)
General Manager (Region)
File

APPENDIX-VII

NATIONAL HIGHWAY AUTHORITY
"TYPICAL NOC LETTER"

Address: 27 Mauve Area, G-9/1, Islamabad
Telephone Number: 051-9261148
Dated:

No.....

To: Owner of the Amenity
(Concerned)

Subject:- **Grant of No Objection Certificate for Establishment of
..... at Km of (N.....)**

Consequent upon fulfillment of conditions by the owner as specified in NHA letter No. dated, it has been decided by the Authority to grant NOC for the establishment of a (specify amenity e.g.: Hotel/Motel/Restaurant etc) on plot survey/khasra No..... Deh Tehsil/Taluka District, corresponding to Km of Section of (N), in accordance with the approved plan.

2. Copy of approved layout plan is enclosed.
3. This NOC will be valid for one year only to start and complete the construction work.

Director (OMU)

For Information and taking necessary action.

- | | | |
|--------------------------|-------|--|
| Director (Maint) Region- | (1) | Please ensure that the conditions specified in the offer of NOC are complied with. In case of non-compliance, the work should be stopped and the matter reported to this office for cancellation of NOC. |
| | (2) | Two certified prints of the layout plan are enclosed herewith. Please hand over one of the drawings to D.D (Maint) concerned for monitoring the work. |
| Owner | - (1) | Please ensure compliance with the conditions governing the grant of NOC in the light of our offer letter already accepted by you. |

Director (OMU)

CC: Member (Operations) NHA
General Manager (Operations)
General Manager (Region)
File

CHAPTER - VII

NOC Requirement for Laying of utilities such as Sui Gas Pipeline, Electricity line, Oil Pipeline, Water/ Sewerage Pipeline, Optical Fiber Line, Telephone Line etc.

1. Different Government agencies as well as non-governmental agencies can use the NHA Right of Way (ROW) by obtaining No Objection Certificate (NOC) with the payment of rental charges to the authority to pass/lay/carry any cable, wire, pipeline, drain, duct, sewer or channel of any kind of utility through, across, under or over any road, highway, motorway and bridge under its control as per Rule 11 & 12 of National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002.

2. The Government /non-governmental agencies will pay annual lease rent to the authority in advance for five (05) years or on yearly basis or as prescribed by the authority. The agency has to deposit yearly advance rental charges by 31st July every year. The authority reserve the right to remove the utility from its Right of Way (ROW), if their annual advance payment is not received from due date as described in Chapter III, Regulation 11.

3. The Right of Way (ROW) usage charges shall be as under:

- (i) Rs. 10.00 per running meter upto 12" for corridor use.
- (ii) Rs. 16.00 per running meter upto 18" dia for corridor use.
- (iii) Rs. 24 per running meter for dia 24" dia for corridor use.
- (iv) In case of dia more than 24", the Member (Operations), NHA will decide the rental charges on case to case basis as per use and availability of NHA corridor.
- (v) Rs. 20.00 per running meter will be charged in case of 1x1 meter duct or corridor use for cables, wires etc.
- (vi) In case the utility duct is more than 1x1 meter size, Member (Operations) NHA will decide the rental charges on case to case basis.
- (vii) Special Rent will be charged from all agencies using the authority, bridges/culverts (utility ducts or super structure) to cross the utilities. The annual charges shall be as follows :

➤ Major River/Railway Bridge	Rs. 500,000/-
➤ Bridges from 51 to 100 meter length	Rs. 100,000/-
➤ Bridges upto 50 meter length	Rs. 75,000/-

The Rates shall be changed with the approval of the Board. These rates will also be applicable to already existing utilities in ROW.

4. NHA reserve the right to cancel any NOC and re-occupy leased land, without paying any compensation to the utility department or agency or person or the Firm as the case may be. In addition to this the applicant will have no objection in removing the facility out of Right of Way (ROW) in case of road expansion.

5. The Authority reverses the right to cancel the NOC and reoccupy the ROW at any time for its convenience, for the purpose of planned utilization of ROW or if it becomes necessary in the public interest, after serving Thirty (30) days notice to the concerned agency. The agency shall remove all the structures (sui gas pipelines, electricity lines, oil pipe lines, water/sewerage pipelines, optical fiber cable, telephone lines etc.) within notice period at its own expense without any compensation whatsoever on this account.

6. **Procedure for processing of application:**

(1) The Government /non-government agency shall submit an application to the office of General Manager (Operations)/(Region) or Corridor Management Contractor along with following details:

- (a) Layout plan along with the details such as geometric layout, topographic details, cross sectional details, technical information (07 copies), duly verified by concerned representative of company and Dy. Director (Maintenance).
- (b) Undertaking on stamp paper of Rs. 100/- that all conditions laid down in NHA offer letter shall be abided by them - **Appendix-VIII**.
- (c) NOC registration fee of Rs. 20,000/- (non-refundable).
- (d) Agency will submit yearly advance charges in shape of Bank draft in favor of NHA, RM Account, Islamabad.
- (e) Road Reinstatement charges will be charged in addition to this as per procedure laid down in NHA Code 2000 (if road cut is involved).
- (f) Deputy Director (Maintenance) or CMC or Director (OMU) RAMD, NHA will make visit to the specific site along with the applicant to ensure that the said cable, wire, pipeline, drain, duct, sewer or channel are laid at the extreme edge of ROW and cause no hindrance or safety crisis.
- (g) After site confirmation, the case will be processed by the Deputy Director (Maintenance) or CMC and forwarded to General Manager (Operations)/(Region) who after satisfaction shall recommend the case to RAMD, HQ to get approval of competent authority [i.e. Member (Operations)/Chairman NHA]. NOC will be issued by Director (OMU).

7. **Methodology of Payment:**

All payment will be made in favor of NHA RM Account, Islamabad through bank draft/pay order.

8. Owing to the extra ordinary complexity, difficulty and cost of construction of an asphalt road and technical factors which preclude proper restoration of a disturbed asphalt surface to the original design specification, it is imperative that an asphalt road not be tampered with or cut after its construction. To avoid road cut for transverse passage of utilities, the following procedures shall be adopted:

- a. Thrust boring under highways without disturbing the surface/flow of traffic.
- b. Methodology statement for passage of utilities with minimum disturbance to the road, highway and traffic flow where thrust boring is not feasible with the following details along with the proposed cross section and plan/drawing in triplicate with the following details:-
 - (i) Precise chainage of National Highway at which the crossing is intended.
 - (ii) Location of ingress and egress of the proposed utility line.
 - (iii) Layout of the proposed utility line astride the ROW and the prescribed ribbon in case the utility line is to be laid longitudinally in the prescribed ribbon, duly verified by agency's representative and Dy. Director (Maintenance) concerned.
 - (iv) Type of utility/pipeline and depth of proposed crossing; special safety precautions, if any, required during the laying of pipeline and subsequently.
 - (v) Name and address of the company's authorized official who will be responsible for the work at site.
 - (vi) An undertaking for removal of utility service at any time on the notice by NHA within the time prescribed in the notice (Annexure-A).
 - (vii) The utility company will pay supervisory charges to NHA at the amount to be prescribed with the approval of Chairman, NHA.

9. The Dy. Director (Maintenance) or CMC will visit site and give their recommendations to the General Manager (Operations)/(Region) whether laying of utility service is feasible or not. If the project is feasible the Dy. Director (Maintenance) or CMC will give an offer to the utility company with the approval of General Manager (Operations)/(Region) as per Performa given at (**Appendix-IX**).

10. On fulfilling/acceptance of the terms and conditions of the offer letter, the case along with complete documents will be forwarded with the clear recommendation by the General Manager (Operations) for approval of the Member (Operations) through RAMD Section. NOC will be issued by RAMD with the approval of the competent authority as per

Performa given at (**Appendix-X**). However, where cutting of road is not involved and length of a utility line is not more than 300 meters, the Regional GM will approve the case for grant of NOC under intimation to NHA HQ.

11. The government agency, the firm or person or department after issuance of NOC will ensure the following:-

(1) Carriage, storage and safety of materials/labour to be used for crossing of the road or laying of utility lines in the safe secure manners at its own risk and cost.

(2) The temporary stores/offices for completion of work will be kept away at the minimum distance of 30 meters from toe of embankment of the nearest carriageway.

(3) No disturbance to the traffic.

(4) Furnish a schedule of work and its methodology.

12. The Dy. Director (Maint) or CMC will supervise the work of government agency, the firm or person or department to ensure that conditions of NOC are fully adopted during the works. In case of violation, he will issue notice to the company for work as per terms and conditions of NOC under intimation to General Manager Region and RAMD, otherwise work at site will be stopped with the approval of General Manager Region.

13. On completion of work the utility department will submit following documents to the Dy. Director (Maintenance) or CMC.

(1) As built drawing in triplicate which will be verified by Dy. Director (Maintenance) or CMC. Two copies of drawing will be sent to Regional General Manager by placing one copy for their own record and the second will be sent to the RAMD.

(2) Certificate of completion of work.

14. Cutting of a macadamized/asphalt or concrete road for crossing of utility lines shall be permissible under the following circumstances only:-

(a) When arrangements for thrust boring are not available with the utility company at any of its locations/stations.

(b) All efforts to arrange for thrust boring equipment within the Region have failed. General Manager (Regional) will render a certificate to this effect. A statistical analysis will be conducted at RAMD periodically to assess/ascertain trends in the Regions.

15. The original record will be maintained in the offices of Dy. Director (Maintenance) or CMC. Copies thereof will be maintained at RAMD for statistical purposes.

16. The Dy. Director (Maintenance) or CMC will ensure that annual lease rent from utility companies /departments is being received regularly by 15th of January each year. The rental charges will be collected by Dy. Director (Maintenance) or CMC on the basis of inventories verified by Regional General Managers or RAMD. In case of failure for the payment of lease rent a fine will be charged to the utility department or agency or firm as prescribed in Chapter III Regulation 11.

UNDERTAKING

(On stamp paper of Rs.100/-)

We, M/s, a Company having Registered Office at and Head office at hereby accept the terms and conditions offered vide Dy. Director (Maintenance) or CMC letter No. dated and do hereby undertake for the purpose of laying at Km+.....) Section of National Highway/strategic road/Motorway (N...../M.....) as per drawing/layout plan (8 copies enclosed). We further undertake that:-

- a. (Company) agrees to relocate the utility line outside R.O.W., at our own expense, as and when called upon to do so by NHA or by its authorized representative, without demanding any charges or compensation from NHA thereof.
- b. (Company) agrees to furnish a detailed schedule along with methodology statement for execution of work to NHA/Deputy Director (Maint) concerned at least one week in advance prior to the start of work.
- c. Notwithstanding to any terms and condition undertaking is hereby given that in the event of the National Highway Authority owned interest and consideration of the NHA so desires, then the pipeline will be removed, relocated dismantled, repaired the damages etc, complete to the full satisfaction of NHA within 30 days from the date of issue of such letter notice instructions from the authorized local representative of the NHA, not below the rank of the Deputy Director at our own cost and expenses. If we fail to carry out the constructions within the notice period the NHA will be eligible to remove our works, materials, etc on our risk and cost and we should lose our right of any claim against the National Highway Authority on any account.

Signature and Stamp
(Notary Public)

For and on behalf of Company
Managing Director
(Company's Seal)

NATIONAL HIGHWAY AUTHORITY
"TYPICAL OFFER LETTER"

No.....
To: _____

Address:
Telephone Number:
Dated:

Subject:- **Offer letter for Processing of Grant of NOC for Laying of Utility at Km+..... of National Highway / Motorway**

Dear Sir,

This refers to your request bearing No. dated for grant of permission to lay/cross a at the captioned location.

2. The National Highway Authority may grant a NOC/permission for the execution of the proposed work, subject to your fulfillment of the conditions as under:-

- a. an undertaking as per the specimen attached.
- b. Five years annual lease rent in advance will be paid by you through bank draft or pay order amounting to Rs. and subsequently it will be paid before 31st July of each financial year otherwise fine will be imposed as prescribed by NHA from time to time.
- c. You will pay supervisory charges to NHA at the amount of Rs..... per day.
- d. Work at site after grant of NOC will be started upto entire satisfaction of the authorized representative of NHA.
- e. Safe and secure arrangements for labour and stores as well as carriage of material and machinery will be responsibility of your company.
- f. Temporary office/store arrangements will be kept away at a minimum distance of 30 meters from the toe of embankment of the nearest carriageway.
- g. There will be no hindrance to the traffic during the works at site.
- h. Any loss/damage caused to the road due to construction work will be borne by the company.

- i. In case of thrust boring, it will be with appropriate equipments horizontally.
- j. The depth of pipe line/conduit will not be less than 1.5 meters under any circumstances.
- k. On completion of work "as built drawing" will be submitted to NHA before leaving site.
- l. Your company will get NOC from all other concerned quarters.
- m. Reinstatement charges amounting to Rs..... as per estimate attached shall be deposited in favor of NHA RM Account, Islamabad.
- n. Departmental charges @ 45% of the estimate amounting to Rs. to be deposited in favor of NHA RM Account, Islamabad.
- o. NOC charges @ Rs. 20,000/- to be deposited in favor of NHA RM Account, Islamabad.
- p. The owner of the amenity will enter into an agreement with NHA as per specimen attached.

3. Kindly furnish the requisite undertaking along with plans, bank draft or pay orders and other documents as specified therein at your earliest convenience so that the case may be processed for decision of the competent authority.

Dy. Director (Maintenance) or CMC

C.C.

Member (Operations)
 General Manager (Operations)
 General Manager (Region)
 File

APPENDIX-X

NATIONAL HIGHWAY AUTHORITY
"TYPICAL NOC LETTER"

Address: 27 Mauve Area, G-9/1, Islamabad
Telephone Number: 051-9261148
Dated:

No.....

To: _____

Subject:- **Grant of NOC for Laying of at
Km+..... of National Highway / Motorway**

Consequent upon fulfillment of conditions by your company as specified in NHA offer letter No:..... dated issued by Dy. Director (Maintenance), the competent authority has decided to grant NOC for laying as per layout plan/drawing received from your company with the undertaking dated

2. The terms and conditions of the offer letter/undertaking will be strictly followed. One approved copy of the layout plan is enclosed herewith for your necessary action. Please ensure compliance with the conditions governing the grant of NOC in the light of our offer letter already accepted by you.

Director (OMU)

Copy to:-

Member (Operations)
General Manager (Operations)
GM (Region)

- (1) Please ensure that the conditions specified in the offer of NOC are complied with. In case of non-compliance, the work should be stopped and the matter reported to this office for cancellation of NOC.
- (2) Two certified prints of the layout plan are enclosed herewith. Please hand over one of the drawing to D.D (Maint)/PD concerned for monitoring the work.

Dy. Director (Maintenance) concerned or CMC

CHAPTER VIII

Bus Stands/Bus Bays

1. Provisions of Regulations

(1) NHA may construct bus bays within its ROW by itself or through public/private partnership (on BOT Basis). Entry fee, from the vehicles entering the bus stands/bus bays, shall be charged according to the rates given below:

Sr. No.	Vehicle category	Rates (Rupees)
A	All kind of Cars/Taxies	5/-
B	Wagon upto 12 seats, Pickup all types modified to carry passengers (Toyota Hilux single/double Cabin), Milk trucks T-3000 and equivalent	10/-
C	Wagon 13-24 Seats, Coaster and Mini Bus built on T-3500 Mazda chassis (upto 24 seats) and Mini Truck/Tanker built on T-3500 Mazda Chassis and equivalent	15/-
D	Buses (more than 25 seats)	20/-

All the above rates may be revised by the Chairman, NHA on annual basis or as the case may be.

(2) The entry fee shall be collected by the agency, person or firm procured by NHA as Management Contractor and deposited to NHA RM Account, Islamabad as per agreement.

(3) The Dy. Director (Maintenance) or MC for respective section shall administer the related affairs.

(4) Keeping in view the public interest, NHA may establish or remove bus bays within its ROW.

2. **NOC requirement for Bus Bays/Bus Stands established by Government Agency or Person or Firm out of NHA Right of Way (ROW) in their own land but using the NHA land for approaches**

(1) **Application Processing Procedure**

- (i) Request of Municipal Administration or Regional Transport Authority or Firm or Owner of the Amenity or Government Agency.

CHAPTER - IX

Removal of Encroachments and Maintaining Sanctity of Building Line

1. Provisions of Act (National Highway Authority Act 1991 as amended in 2001)

(1) Under Section 2 (g) of NHA Act, 1991, "National Highway" means a road specified in Part-1 of the Schedule and includes a road declared by the Federal Government, by Notification in the Official Gazette, to be a National Highway.

(2) Under Section 12 of NHA Act, 1991, subject to rules, the Authority shall have power to summarily eject any un-authorized occupant of National Highway or Strategic Road or proposed site thereof and demolish and remove any structure thereon, and to use such force, including police force as may be necessary for the purposes and to recover the cost thereof from the person responsible for such occupation or obstruction.

2. Provision of Rules (National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002)

2.1 **Rule 3: Restriction on Encroachment and Ribbon Development:-**

(1) Subject to sub rule (2) of rule 3, no person shall without the consent, in writing, of the Authority , (a) erect any, building, boundary wall and structure whether temporary or permanent, moveable or immovable; (b) set up any fence, hedge, post, scaffolding, tower, pylon, transmission line, dispenser, sign board, advertisement, hoarding or banner; (c) deposit or cause to be deposited building material, goods for sale, rubbish, industrial waste, waste water, sullage, industrial effluent or any other such matter or article etc.; (d) carry any cable, wire, pipeline, drain, duct, sewer or channel of any kind through, across, under or over; (e) and make any excavation on road, highway, motorway, bridge or land:-

- (i) within seventy meters from center line of Right of Way of a National Highway and no industrial building within one hundred meters on either side of the center line;
- (ii) within two hundred and fifty meters from center line of Right of Way of a motorway;
- (iii) within one thousand meters on either side of center line at all interchanges and service areas in a length of one kilometer beyond connecting point of ramps and loops with a motorway and feeding roads; and
- (iv) within forty meters from center line of the Right of Way (ROW) in case of sections of a National Highway or strategic road or bridge which is situated in municipal limits and hilly areas.

(2) No such restriction on ribbon development referred to in sub-rule (1), shall apply in case of.-

- (a) any building/structure or excavation which is used or intended to be used mainly or exclusively for purposes of or relating to cultivation of land adjacent thereto otherwise than as a dwelling house or a commercial property;
- (b) any work begun before the date of coming into force the Highway Ordinance, 1959 (W. P. Ord. XXXII of 1959), or any other provincial law on the subject or any work carried out in accordance with permission of any competent authority before that date; or
- (c) any National Highway in respect of which a building line has been determined under rule 5 or under any provincial law before the commencement of the Act.

2.2 Rule 4: Prohibition to construct or layout any means of access:- No person shall, without the consent, in writing, of the Authority, construct or layout any means of access to or from a National Highway, motorway, strategic road or any other road or bridge declared as such under the Act.

2.3 Rule 6: Prohibition to construct or maintain any structure or make any excavation between a Building Line and the Right of Way (ROW):- (1) No person subject to sub-rule (2) of rule 3 without the consent, in writing and no objection certificate of the Authority shall:-

- (a) erect any, building, boundary wall, shed, dispenser and structure whether temporary or permanent, moveable or immovable;
- (b) setup any fence, hedge, post, scaffolding, tower, pylon, transmission line, sign board, advertisement, hoarding or banner;
- (c) deposit, cause to deposit building material, goods for sale, rubbish, industrial waste, waste water, sullage, industrial effluent or any other such matter and articles;
- (d) and carry any cable, wire, pipeline, drain, duct, sewer or channel of any kind through, across, under or over;

the land between Right of Way (ROW) and building line.

(2) In case any building or structure and other amenities defined in sub-section (1) of Rule 6 including a work or any part thereof which already existed (before determination of building line by the authority under rule 5 or under any provincial law before the commencement of the act) between the ROW and building line, the Authority may, whenever such building, structure and other amenities or part thereof has fallen down, by notice require such building, structure and other amenities or part thereof to be demolished and set back to the building line and if the portion of land thus rendered

vacant be included within the boundaries of road in relation to which such building line has been determined, such portion shall become part of the National Highway, motorway, strategic road or bridge, as the case may be. Provided that the Authority shall pay compensation to the owner of such portion of land or of the building which existed thereon for any damage caused to it by the setting back of building and structure.

2.4 Rule 9: Removal of Encroachment:- (1) If any person, without the consent of the Authority, makes any encroachment, the Authority shall give such person a notice in the form set out in **Appendix-XI** to remove the encroachment within such period as may be specified by it and the period so specified shall not be of less than twenty four hours.

(2) In case such person fails to comply with such notice within the period specified therein, the Authority may under section 12 of the Act take such action against such person as may be necessary to remove the encroachment and to recover the cost thereof.

2.5 Rule 10: Determination and recovery of cost:- (1) The cost to be recovered under rule 9 shall be the actual cost incurred in removing the encroachment and the peace keeping cost as may be determined by the Authority.

(2) The Authority shall serve the person concerned with a notice to pay the cost within such a period as may be specified by it in the notice.

(3) In case such person fails to pay the cost, the Authority may recover the cost by sale of the material removed and the remaining sum due, if any, as an arrears of land revenue.

2.6 Rule 17: Notices:- All notices under these rules shall be served in the following manner:-

(1) In case the identity of the offender is known, the notice shall be served on him or on his known authorized representative or on the person found to be representing him at the site of occurrence of the offence personally and if these persons be not available or traceable or refuse to receive the notice, by affixation at a conspicuous place at the site of the offence. Copy of the notice shall also be provided to the National Highways & Motorway Police.

(2) In case the authority is satisfied that the identity of the offender cannot be ascertained, a notice with the heading "To whom it may concern" affixed at a conspicuous place at the site of offence shall be deemed to have been served on the offender."

3. General Provision and Regulations (National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002)

(1) As per Rule (9), Sub-section (1), if any person, without the consent of the authority, makes any encroachment, the authority shall give such person a notice in the form set out in **Appendix-XI** to remove the encroachment within such period as may be

specified by it and the period so specified shall not be of less than twenty four (24) hours under Rule 9(1). Further as per Rule (9), Sub-section (2) in case such person fails to comply with such notice within the period specified therein, the authority may under section 12 of the Act take such action against such person as may be necessary to remove the encroachment and to recover the cost thereof.

(2) The Dy. Director (Maintenance) or CMC shall ensure that no encroachment (movable or immovable) should be made within the ROW and between the ROW and Building Line within their respective jurisdiction.

(3) Any encroachment noticed by the Dy. Director (Maintenance) or CMC and declared encroachment by the concerned land acquisition collector shall immediately be removed.

(4) The Director (Maintenance) or CMC shall submit the fortnightly report to the Regional General Manager with respect to status of removal of encroachments within their jurisdiction with one copy to RAMD office.

(5) Regional General Managers shall make anti encroachment squads which shall ensure through field visits that there are no encroachments along the National Highways. The squads will monitor the job of Dy. Director (maintenance) or CMC for removal of encroachments and take immediate action against the field officers or CMC if encroachments exists on National Highways within their respective jurisdiction. The squads may also take direct action for removal of encroachments in cases where Dy. Director (Maintenance) or CMC have failed to remove the encroachments.

(6) ROW markers shall be installed on both sides of the carriageway to fix the National Highways boundaries permanently and to avoid the illegal encroachments.

(7) All the bypasses of National highways shall have controlled access and chain link fences shall be installed and maintained.

(8) The cost of removal of encroachments shall be estimated and shall be recovered from the owner of the encroachment as per Rule 10.

4. Procedure for Removal of Encroachment :

In order to remove a building, fence, hedge, post, tower, pylon, transmission line, pipeline, gas line, duct, dispenser, sign board, advertisement, hoarding or banner, any structure constructed by person without the consent in writing from the authority, the authority shall adopt following procedure for its removal:

- (a) The representative of the authority i.e. Dy. Director (Maintenance) or CMC shall visit the site and after determination of the extent of encroachments as per Rule 3(1), 4, 6, 9 & 11(1), shall issue the notice as per Rule 20 in writing for removal of encroachments to the owner of the encroachments (movable or immovable), constructed without the consent of the authority as detailed in the National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002 under intimation to the District/Tehsil Administration.

- (b) In case the removal of encroachments requires hiring of machinery or other related expenditures, Dy. Director (Maintenance) or CMC shall submit the case for approval of machinery and other related expenditures to General Manager (Region).
- (c) In case such persons or encroachers fail to comply with the notice within the period specified therein and upon the completion of notice period, Dy. Director (Maintenance) or CMC shall carry out the operation for removal of encroachments in coordination with District/Tehsil Administration.

NATIONAL HIGHWAY AUTHORITY
"TYPICAL Notice for Removal of Encroachments Letter"

No.....
To,

Address:
Telephone Number:
Dated:

Through:- Dy. Director (Maintenance) _____(In Duplicate).

SUBJECT:- NOTICE FOR REMOVAL OF ENCROACHMENT

WHEREAS, M/s/Mrs. Son/daughter of has made an encroachment within the Right of Way/between Right of Way and building line in violation of the restriction on ribbon development in respect of the National Highway/Motorway/Strategic Road, within the meaning of National Highways and Strategic Roads (Control) Rules, 1998 as amended in 2002 at and whereas the said encroachment is liable to removal under the aforesaid rules.

2. Now, THEREFORE, you are hereby directed to remove the aforesaid encroachment within twenty four hours, failing which the aforesaid encroachment shall be removed by the National Highway Authority, at your expenses and cost.

3. Given under the hand and seal of (specify designation) at AM/PM on this day of(specify month and year) on behalf of the National Highway Authority.

Signature: _____
Name: _____
Designation: _____

Seal of the
National Highway Authority

For information and taking necessary action please

Project Manager (MC) with a request to coordinate with and arrange/ensure the removal of encroachment after the lapse of above specified notice period.

DCO
SSP To provide the Police force for legal cover and to control law and order situation.

CHAPTER - X

Display of Promotional Material

1. **Provision of Act (National Highway Authority Act 1991 as amended in 2001)**

Without prejudice to the generality of the powers conferred by sub-section(1), the Authority may for the purpose of carrying out the purpose of this Act License Facilities on roads under its control on such terms as deems fit [Section 10 (2)(viii)]

2. **Provisions of Rules (National Highways and Strategic Roads (Control) Rules 1998, as amended in 2002)**

2.1 **Rule 8: Construction of means of access to or from the road or to construct a building, structure and other amenities within a building line:-** (1) Any person wishing to obtain the consent of the Authority to construct a means of access to or from the highway or to construct a building, structure and other amenities within the building line determined under rule 5 or under any provincial law before the commencement of Act shall apply to the Authority for grant of its permission.

(2) The applicant shall furnish to the Authority such plans, other relevant documents and fees as it may require in this behalf as prescribed under NHA regulatory framework and standard operating procedures for preservation and commercial use of Right of Way (ROW).

(3) The Authority shall, subject to due consideration to highway safety and convenience of road users and if satisfied that the permission to construct a means of access to, or from, the highway or to construct a building, structure and other amenities within the building line may be granted, inform the applicant accordingly, subject to such conditions as it may deem fit to impose on payment of such fees as it may fix.

(4) In case the Authority is of the opinion that such permission may not be granted, it shall record its reasons, in writing, for refusal to grant such permission and inform the applicant accordingly with reasons for such refusal.

2.2 **Rule 11:.**(1) Notwithstanding anything contained in any other law/rule for the time being in force no person, municipal committee, district government, cantonment board or any other government agency shall do any of the following acts within ROW of the authority, namely:-

- (a) open or break up the surface of any road, highway, motorway, strategic road and bridge; or
- (b) construct or carry any cable, wire, pipe, drain, sewer channel of any kind through, across, under or over any road and bridge; or

- (c) within the boundaries of any road, repair or alter or execute any works on, or in relation to, any existing cable, wire, pipe, drain, sewer or channel of any kind, running through, across, under or over such road, highway, motorway and bridge.
- (d) erect and install any structure or amenities and carry out commercial activities;

Unless such person or authority have first obtained the consent, in writing, to do the proposed works within ROW of National Highway Authority.

(2) In giving its consent under sub section (1) of rule 11, the authority may impose such conditions as it may deem necessary and consistent with the performance of its duty. As such the authority may impose a rent or other charge for any land forming part of the road occupied by or applied to the proposed work.

(3) Any person or agency contravening or causing the contraventions of the provision of Sub-section (1) of Rule-11 shall be liable to prosecution under the provision of these Control Rules and the Authority may, also without giving any notice to the offender, remove the offending works, restore the road to its former condition and the Authority may recover the cost thus incurred from the offender as determined by the Authority.

(4) The cost recoverable under Sub-section (3) shall be such sum as may be determined to be the actual cost by the Authority may require the offender through a demand notice to pay the cost within a reasonable period not exceeding fifteen (15) days and in case he fails to make the payment within the specified period the cost shall be recovered as arrears of land revenue or from sale of material so removed.

(5) If any dispute arises between the Authority and any other government agency or person, out of or in relation to the exercise of powers of such authority under Sub section-1 such dispute shall be referred to arbitration under 1940 Arbitration Act. The cost of the arbitration shall be borne by municipal committee, district government, cantonment board and any other agency or the person concerned.

2.3 Rule 12: License for the grant of permission to construct approach roads or culverts for the use of Government land for construction, installation of filling/CNG stations, other amenities and laying of utility lines through, across, under and over the road or bridge:-

(1) The authority may, at its discretion, with due regard to the safety and convenience of the road user and subject to such conditions as it may impose and on payment of such fees and rental/lease charges as it may fix, permit any person or agency to; (a) setup filling/CNG stations, hotel/motel, restaurants, sign boards, nurseries, shops, khokhas, hoardings, banners for a specific period; (b) to carry any cable, wire, pipeline, drain, duct, sewer or channel of any kind through, across, under or over any national highway, motorway, strategic road and bridge under its control; (c) to manage the national highway, strategic road or bridge corridor including all amenities in sections or sub-sections or part thereof as commercial entity through management contractor on behalf of the authority, at a fee or ground rental charges prescribed by the authority in the duly executed contract agreement

approved by the Board or as prescribed under Regulatory Framework and Standard Operating Procedures of the Authority.

(2) Any person or agency wishing to obtain the consent of the authority to construct or lay out a means of access to or from or to construct a building, structure and other amenities within ROW and building line to which restrictions have been applied by or under sub-section (1) of rule 3, 6 and 11 and shall furnish with his application such plans and other particulars as may be prescribed by authority and the authority may refuse to grant the application or may grant the application subject to such conditions as it may deem fit to impose and ground rental charges and fees prescribed under Regulatory Framework and Standard Operating Procedures of the Authority.

(3) If the owner of CNG/Filling stations, restaurants, hotels/motels, factories, nurseries, shops/khokhas and any other amenities or Government agencies, departments, cantonment boards fails to pay the lease or ground rental charges in the prescribed time and fail to comply with the instructions of the authority, a surcharge fee shall be charged at the prescribed rates as given in the regulatory framework and standard operating procedures of the authority.

3. General Provisions and Regulations

(1) NHA reserves the right to franchise any or all sections of National Highways and Motorways for the purpose of hoarding.

(2) No advertising agency/company/person shall install hoardings and advertising material along the National Highways without NOC of NHA. The Dy. Director (Maintenance) or Corridor Management Contractors (CMC) shall ensure that such activities are not taken place within the ROW without necessary NOC.

(3) If any un-authorized advertising material is found available, notice for removal of the same will be issued/served to the persons/agency/company concerned by the above officers. If no response is given by the party within stipulated time, the hoardings will be removed at the risk and cost of the person/agency/company concerned.

(4) The locations for Display of Promotional Material shall be classified as under:-

- | | | |
|------|--------------------|---|
| (i) | Prime Locations: | Toll Plazas, Major Cities Urban Areas, Weigh Bridges, Overhead Bridges, Pedestrian Bridges, Pedestrian or Vehicular Underpasses on National Highways, Beauty Spots, Panoramic Views and Historical Monuments etc. |
| (ii) | Ordinary Locations | Other location than Prime Locations on National Highways |

(5) The annual lease rent will be collected through Dy. Director (Maintenance) or Management Contractor or franchisee. The annual lease rent of different amount will be based on above types of locations but not less than the amount shown below:-

- (i) Prime Locations: The rental charges shall be decided by the Chairman, NHA on case to case basis or determined through auction of the rights for a particular reach or location or structure of the highway.
- (ii) Ordinary Locations: Rs. 45 per Square Foot for places other than Prime Locations on National Highways

(6) The Dy. Director (Maintenance/Monitoring) or MC of respective section shall administer the erection of hoardings and related matters.

(7) The maximum size of hoardings or board shall be 90 x 30 feet or as approved by the authority.

(8) Installation of unipole advertising boards shall be encouraged (but the bigger would require multi legs – trussed).

(9) Annual ground rental charges on the basis of type of location as given above [Section (4) (i) & (ii)] shall be charged as per section (5) or as prescribed by the authority from time to time with the approval of Chairman, NHA.

(10) The rights to display hoarding promotional materials and other displays on Prime Locations of National Highways shall be auctioned on annual basis or period as prescribed by the authority through open auction/competition or through CMC to interested Advertising Agencies or Firms.

4. Pre-qualification/Registration of Advertising Agencies

(1) Different Advertising Agencies shall be registered on the panel of authority after due pre-qualification with the approval of Member (Operations) NHA on annual basis.

- (i) The Advertising Agencies shall be registered with NHA and shall pay registration fee and subsequent renewal fee every year as prescribed under:

◆ Registration Fees (one time only)	Rs. 20,000/- (Non-refundable)
◆ Renewal Fees	Rs. 5,000/- per year (Non-refundable)

- (ii) The formation of the committee for pre-qualification/registration of advertising agencies is given as under:

(a) General Manager (Operations)	Chairman
(b) Director (OMU)	Member
(b) Dy. Director (P&CA)	Member
(c) Dy. Director (O&M)	Member
(d) Asstt. Director (Ops)	Member/Secretary

- (iii) At least 30 days will be given for submission of applications by Advertising Agencies for pre-qualification. The agencies interested in taking part for pre-qualification shall submit their applications along with necessary documents as published in the Public Notice. Dy. Director (O&M) will frame the public notice for publication containing information about relevant papers.

5. Application Processing Procedure

(1) All the registered agencies will apply to obtain NOC for their installations from NHA through Dy. Director (Maintenance/Monitoring) or Management Contractor (MC). Dy. Director (Maintenance/Monitoring) or MC will check the site as per NHA Standard Operating Procedure (SOP) and submit the case for grant of NOC to General Manager (Operations/(Region) for processing of approval of Member (Operations) NHA through RAMD office. NOC will be issued by RAMD office with the approval of Member (Operations).

(2) NOC processing time shall be thirty (30) days from Dy. Director (Maintenance/Monitoring) or MC till the issuance of NOC by RAMD office.

(3) Following general conditions will be followed by the advertising agencies and the implementation will be the responsibility of Dy. Director (Maintenance/Monitoring) or Management Contractor.

- (a) All hoarding shall be of approved dimensions and in accordance with the rules/procedure issued by the authority.
- (b) All hoarding or boards shall not be less than 6 feet off the ground level and will be fixed on concrete or metallic structures.
- (c) No hoardings will be allowed within the median or any other reserve area as declared by NHA.
- (d) No hoarding/sign, display board shall obstruct, cover or cause reduction of visibility of traffic sign.
- (e) Distance between each hoarding or display board shall not be less than 100 meters or as prescribed by the authority.
- (f) No hoarding to be placed or made of material which may reflect the lights of the passing vehicles or sunshine towards the road users.
- (g) Each hoarding/sign board shall contain the lease details and period of expiry on bottom left corner.
- (h) Minimum distance from the center of carriageway shall be fixed with the consultation of Dy. Director (Maintenance/Monitoring) or MC for each board. (it shall not be less than 2.5 meter from outer edge of shoulder)

- (i) No hoardings or display shall be left in poor, damaged state.
- (j) Electronic bill boards shall be encouraged as a policy
- (k) No promotional material shall be allowed to be displayed unless cleared by the Dy. Director (Maintenance/Monitoring) or MC with reference to its morality.

(4) In case of default by the advertising agency or firm, the Dy. Director (Maintenance/Monitoring) or MC shall serve the notice to the advertising agency or firm for removal of hoardings/bill boards within specified period of time and shall have the right to:-

- (a) Confiscate, remove or allocate hoarding sites to the next other advertising agency without further notice, if notices to the defaulter have not been complied by the advertising agency.

(5) Payment of ground rental charges or the amount mentioned in the lease agreement shall be made through demand draft/pay order to NHA RM Account, Islamabad through Dy. Director (Maintenance/Monitoring) or MC.

(6) The following arrangements have been made for the payments of ground rental charges by the advertising agencies:

- (i) The payments for the 1st year shall be made on 6 monthly basis starting from the date of registration.
- (ii) The payments for the next financial years shall be made on or before 31st July of each year on annual basis. In case of non payment on the due date, Regulation (11), Chapter III shall apply.

(7) Before installation each board will be inspected by the Deputy Director (Maintenance/Monitoring) or MC of reach concerned who will ensure that the board is prepared in accordance with NHA Standard Operating Procedures (SOP) otherwise he will not allow installing the board.

(8) A register will be maintained by the offices of the Dy. Director (Maintenance/Monitoring) and MC and RAMD and in this regard as per Performa given at **Appendix-XII**. A Monthly return statement will be submitted in the same Performa by Dy. Director (Maintenance/Monitoring) or MC and Regional General Manager by 5th of each month to the office of the RAMD.

APPENDIX-XII

REGISTER/RETURN OF ADVERTISING BOARDS INSTALLED IN _____
 REGION DURING THE MONTH OF _____

Name of Owner/Company	Size of Board	Location where Board is installed	Maint Unit	Contract period with dates	Approving Authority	Amount of Lease Rent fixed	Amount of Lease rent received	Boards removed on completion of Contract	Boards removed due to violation of Contract	Remarks (if any)

ANNEXURE – I

NHA Act 1991 as amended in 2001
(8 pages)

NHA ACT 1991 AS AMENDED IN 2001

CHAPTER I PRELIMINARY

1. Short title, extent and commencement.----(1) This Act may be called the National Highway Authority Act, 1991, amended in 2001.
 - (2) It extends to the whole of Pakistan.
 - (3) It shall come into force at once.
2. Definitions.---In this Act, unless there is anything repugnant to the subject or context:
 - (a) "Auditor General" means the Auditor General of Pakistan;
 - (b) "Authority" means the National Highway Authority established under section 3;
 - (c) "Board" means the Executive Board of the Authority;
 - (ca) "CDWP" means the Central Development Working Party;
 - (d) "Chairman" means Chairman of the Authority;
 - (e) "Council" means the National Highway Council;
 - (ea) "ECNEC" means the Executive Committee of National Economic Council;
 - (f) "Member" means member of the Council or, as the case may be, of the Board;
 - (g) "National Highway" means a road specified in Part I of the Schedule and includes a road declared by the Federal Government, by notification in the official Gazette, to be a National Highway;
 - (h) "President" means President of the Council;
 - (i) "Regulations" means regulations framed under this Act;
 - (j) "Right of Way" (ROW) means the land acquired for the purpose of construction of a National Highway or any other road assigned to the Authority;
 - (k) "road" means a road including land within the right of way and all works, such as, carriageways, cartways, footpaths, berms, side drains, culverts, bridges, tunnels, fences, posts, sign boards, plantation and lighting arrangements, intersections and medians assigned to the Authority;
 - (l) "rules" means rules made under this Act and
 - (m) "strategic road" means a road specified in Part-II of the Schedule and includes a road declared by the Federal Government by notification in the official Gazette, to be a strategic road.
 - (n) Deleted

CHAPTER II

ESTABLISHMENT AND MANAGEMENT OF THE AUTHORITY

3. Establishment of National Highway Authority.----(1) As from the commencement of this Act, there shall be established for carrying out the purposes of this Act, an Authority to be known as the National Highway Authority:

(2) The Authority shall be a body corporate having perpetual succession and a common seal with power to acquire, hold and dispose of property; and may by its name sue and be sued.

(3) The headquarters of the Authority shall be at Islamabad.

4. Purpose and functions of Authority.----- The purpose and functions of the Authority shall be to plan, promote, organize and implement programmes for construction, development operation, repairs and maintenance of National Highways and strategic roads specially entrusted to it by the Federal Government, or by a Provincial Government or other authority concerned.

5. National Highway Council.----- (1) There shall be established a National Highway Council consisting of:

- | | |
|---|-------------------|
| (a) The Minister for Communications
Government of Pakistan. | President |
| (b) The Secretary Finance Division,
Government of Pakistan. | Member |
| (c) The Secretary Planning &
Development Division,
Government of Pakistan. | Member |
| (d) The Secretary Communications,
Government of Pakistan. | Member |
| (e) A professional in the field of
Highway Construction and Management
(nominated by the President) | Member |
| (f) A professional in the field of Finance & Accounts
(nominated by the President) | Member |
| (g) The Chairman NHA. | Member/ Secretary |

(2) The meetings of the Council shall be called by the Secretary of the Council, at least once a year, or at any such date and time as may be specified by the President.

(3) The Minister for Communications may, on the recommendation of the Board, accord anticipatory approval to any matter which falls within the jurisdiction of the Council.

6. Powers and functions of the Council. --- (1) The functions of the Council shall be

- (a) To approve five year plans and perspective plans, prepared by the Board, in consultation with the Planning and Development Division, for the construction, development, repair and maintenance of National Highways and strategic roads specially entrusted to the Authority by the Federal Government or by a Provincial Government or other authority concerned;
- (b) To lay down national policies and guidelines to be followed by the Authority in the performance of its functions;
- (c) To review and reappraise projects.
- (d) to approve the annual budget of the Authority

(2) The Council shall have power to control, direct and regulate the affairs of the Authority.

7. Management --- (1) The general direction and administration of the Authority and its affairs shall vest in the Executive Board which may exercise all powers, perform all functions and do all acts and things which may be exercised, performed or done by the Authority:

(2) The Board shall consist of:

(1) The Chairman, NHA	Chairman
(2) Inspector General National Highways & Pakistan Motorway Police(or nominee)	Member
(3) Additional Secretary (Finance)	Member
(4) Member or Additional Secretary, (Planning & Development Division)	Member
(5) Joint Secretary (II), Ministry of Communications	Member
(6) Senior Chief, NTRC	Member
(7) Vice President, NESPAK	Member
(8) Member (Finance),NHA	Member
(9) Member (Planning), NHA	Member

(3) The meetings of the Board shall be held at least once in 3 months.

(4) The Chairman or, in his absence, a Member authorized by him in this behalf, and three Members shall constitute a quorum for a meeting of the Board.

8. Functions of Board.-- Functions of Board shall be --

(a) to consider and approve proposals, schemes and projects exceeding fifty million rupees but not exceeding one hundred million rupees and to consider and recommend, through the Ministry, to CDWP or ECNEC proposals, schemes and projects exceeding one hundred million rupees;

(b) to consider progress reports of the Authority;

(c) to perform such other functions as may be delegated to it by the Council;

(d) to recommend for approval the annual budget of the Authority and

(e) to approve projects to be funded through toll and other receipts from operation of highways.

9. Chairman, his duties, functions and powers... (1) The Council shall appoint the Chairman who shall be the Chief Executive of the Authority and shall exercise such powers and perform such functions as may be specified by the Council.

(2) The Chairman shall receive such salary and allowances and be subject to such conditions of service as may be determined by the Council.

(3) The Chairman shall have the power to approve projects of emergent nature, maintenance, rehabilitation and construction affecting traffic movement and safety of structures up to fifty million rupees and to recommend for approval, proposals, schemes and projects exceeding fifty million rupees to the Executive Board.

(4) The Chairman on the recommendations of the Executive Board shall have the power to reappropriate funds from one project to another on the basis of progress of projects.

CHAPTER III
POWERS AND DUTIES OF THE AUTHORITY

10. The powers of the Authority --- (1) The Authority may take such measures and exercise such powers as it considers necessary or expedient for carrying out the purposes of this Act.

(2) Without prejudice to the generality of the powers conferred by sub-section (1), the Authority may for the purpose of carrying out the purpose of this Act ---

- (i) advise the Federal Government on matters relating to National Highways and strategic roads;
- (ii) acquire any land in accordance with legal procedure and obtain and dispose of moveable and immovable property or interests therein;
- (iii) undertake any work specified in sub-sections (1) and (2) of section 11;
- (iv) incur expenditure on works specified in clause (iii);
- (v) procure plant, machinery, instruments and materials required for its use;
- (vi) enter into and perform all such contracts as it may consider necessary;
- (vii) levy, collect or cause to be collected tolls on National Highways, strategic roads and such other roads as may be entrusted to it and bridges thereon;
- (viii) licence facilities on roads under its control on such terms as it deems fit;
- (ix) determine a building line between which and the ROW it shall not be lawful without the consent of the Authority to construct or maintain any structure or make any excavation;
- (x) cause studies, surveys, experiments and technical researches to be made or contribute towards the cost of such studies, surveys, experiments or technical researches made by any other agency;
- (xi) exercise power to award negotiated contracts for projects to be undertaken through Private Sector Financing programme;
- (xii) seek and obtain advice and assistance for the preparation and execution of any plan, programme or project;
- (xiii) raise funds (local and foreign) through borrowing, floating of bonds, sharing or leasing of assets or any other means, from time to time:
Provided that a foreign loan shall be negotiated in consultation with the relevant Ministry of the Government of Pakistan;
- (xiv) perform any other function supplemental, incidental or consequential to the purposes and functions aforesaid; and
- (xv) takeover ROW of the roads declared as National Highway with the consent of provinces and approval of the Federal Cabinet and Provinces shall simultaneously effect the mutation free of cost and without any liability or condition.

11. Plans and Schemes. --- (1) The Authority shall prepare a master plan for the development, construction, operation and maintenance of National Highways and roads in Pakistan for the approval of the Council.

(2) The Authority may frame a scheme or schemes for all or any of the following matters, namely:-

- (i) construction, expansion, operation and development of National Highways and strategic roads;

- (ii) research and development in the field of Highways:
 - (iii) training of the Authority's employees:
 - (iv) welfare of the Authority's employees; and
 - (v) any other matter pertaining to the purposes and functions of the Authority or incidental thereto.
12. Powers to eject unauthorized occupants.---Subject to rules, the Authority shall have power to summarily eject any unauthorized occupant of National Highway or strategic road or proposed site thereof and demolish and remove any structure thereon, and to use such force, including police force, as may be necessary for the purpose and to recover the cost thereof from the person responsible for such occupation or obstruction.

CHAPTER IV

ESTABLISHMENT

13. Appointment of officers, servants etc.---(1)The Authority may from time to time employ such officers and servants, or appoint such experts or consultants, as it may consider necessary for the performance of its functions, on such terms and conditions as it may deem fit.
- (2) Notwithstanding any thing contained in sub-section(1), any rule made, or order or instruction issued, by the Authority, or in the terms and conditions of service of any person employed by or serving under the Authority, the Authority may at any time terminate the services of any person, after giving him not less than sixty days notice or pay for the period by which such notice falls short of sixty days.
- (3) Service under the Authority is hereby declared to be service of Pakistan and every person holding a post under the Authority, not being a person who is on deputation to the Authority from any province, shall be deemed to be a civil servant for the purposes of the Service Tribunals Act, 1973.
14. Recruitment and conditions of service. --- The Authority shall, with the approval of the Council, prescribe the procedure for appointment and terms and conditions of service of its officers and servants.
15. Chairman, etc to be deemed to be public servants---The Chairman, Members, officers and servants of the Authority shall, when acting or purporting to act in pursuance of any of the provisions of this Act, be deemed to be public servants within the meaning of section 21 of the Pakistan Penal Code (Act XLV of 1860).
16. Delegation of powers to Chairman, etc. --- The Authority may by general or special order delegate to the Chairman, a Member or officer of the Authority any of its powers, duties or functions under this Act, subject to such conditions as it may think fit to impose.
17. Industrial Relations Ordinance, 1969 (XXIII of 1969), not to apply.-- Nothing contained in the Industrial Relations Ordinance, 1969 (XXIII of 1969) shall apply to, or in relation to the Authority.
18. Persons serving National Highways Board. --- (1) Any person on deputation to the National Highways Board immediately before the constitution of the Authority, shall, on the constitution of the Authority be deemed to be on deputation to the Authority on the same terms and conditions of service to which he was entitled in the National Highways Board.
- (2) Employees of the National Highways Board immediately before the constitution of the Authority, including a person on deputation to any other organization in Pakistan or abroad, may, on the constitution of the Authority, opt to become an employees of the Authority.

(3) An employee exercising an option under sub-section(2) shall become an employee of the Authority on such terms and conditions as may be prescribed by rules or regulations.

(4) The Federal Government shall contribute to the pension, gratuity and final payment of provident fund of a person absorbed in the Authority under sub-section(3) in accordance with the rules of the Federal Government in force at the time of such absorption.

19. Authority to be local Authority.-- The Authority shall be deemed to be a local authority for the purpose of borrowing money under the Local Authorities Loans Act, 1914 (IX of 1914).

CHAPTER V

REPORTS AND STATEMENTS

20. Submission of yearly reports and returns, etc--- (1) The Authority shall submit to the Federal Government, as soon as possible after the end of every financial year but before the last day of September next following, a report on the conduct of its affairs for that year.

(2) A copy of the report mentioned in sub-section(1), together with a copy of the audit report shall be placed by the Federal Government before the National Assembly and the National Assembly shall refer the same to its Committee on Public Accounts for scrutiny and examination.

(3) The Committee on Public Accounts shall scrutinize and examine the reports referred to it under sub-section (2) in the same manner, and shall in respect thereof, perform the same functions and exercise the same powers as are required by it to be performed and exercised in respect of appropriation accounts of the Federal Government and the report of the Auditor General thereon.

(4) The Federal Government may require the Authority to furnish it with---

- (i) any return, statement, estimate, statistics or other information regarding any matter under the control of the Authority; or
- (ii) a report on any such matter; or
- (iii) a copy of any document in the charge of the Authority; and the Authority shall comply with every such requisition.

CHAPTER VI

FINANCE

21. National Highway Authority Fund.--(1) There shall be formed a non-lapsable fund vesting in the Authority known as the "National Highway Authority Fund", to be utilized by the Authority to meet charges in the connection with its functions under this Act including the payment of salaries and other remuneration to the Chairman, Member, officers, servants, experts and consultants of the Authority.

(2) The National Highway Authority Fund shall be kept in scheduled banks and shall be operated according to rules and regulations of the Authority.

(3) The National Highway Authority Fund shall have to its credit all funds received by the Authority from which the Authority can incur expenditure related to its functions including--

- (i) loans obtained from the Federal Government;
- (ii) other loans obtained by the Authority;

- (iii) grants made by the Federal Government;
 - (iv) income from tolls;
 - (v) funds provided by the Federal Government;
 - (vi) foreign aid, grants and loans negotiated and raised by the Authority;
 - (vii) all other sums received by the Authority, such as fees, damages costs, refund, forfeitures, sale proceeds, lease money, rentals and fines;
 - (viii) income from the sale of assets, land or vehicles; and
 - (ix) funds from floating bonds, shares or through any other means.
22. Maintenance of accounts. ---The Authority shall maintain complete and accurate books of accounts in such forms as may be prescribed by it.
23. Annual statement, of accounts. --- In the month of January each year, the Authority shall submit to the Federal Government for approval a statement of the estimated receipts and expenditure in respect of the next financial year.
24. Audit. --- (1) The accounts of the Authority shall be audited every year by the Auditor General in such manner as may be prescribed by the Federal Government.
- (2) Copies of the audit report shall be sent to the Authority and, with the comments of the Authority, to the Federal Government and shall also be available for public inspection.
- (3) The Authority shall carry out any directive issued by the Federal Government for rectification of an audit objection.

CHAPTER VII

MISCELLANEOUS

25. Recovery of arrears due as arrears of land revenues. --- Any sum due to the Authority shall be recoverable as an arrear of land revenue.
26. Land acquisition. --- The acquisition of any land or any interest in land for the Authority or for any project under this Act shall be deemed to be acquisition for a public purpose within the meaning of the Land Acquisition act, 1894 (I of 1894), and the provisions of the said Act shall apply accordingly.
27. Transfer of rights and liabilities. --- (1) As from the commencement of this Act all assets and liabilities and all rights and obligations of the National Highways Board and the Directorate General National Highways shall stand transferred to the Authority.
- (2) All contracts made by the National Highway Board or the Directorate General National Highways shall be deemed to be contracts made by the Authority.
28. Authentication of orders and other instruments of the Authority. --- All orders, decisions and other instruments of the Authority shall be authenticated by the signature of the Chairman and any other Member or any officer of the Authority authorized by it in this behalf.
29. Power to enter. --- Subject to any regulation made in this behalf, any person generally or specially authorized by the Authority may, whenever it is necessary for the purposes of this Act at all reasonable times, enter upon any land or premises, and
- (i) make any inspection survey, measurement, valuation or enquiry;
 - (ii) take levels;

- (iii) dig or bore into sub-soil;
- (iv) set out boundaries and intended lines of work;
- (v) mark such levels, boundaries and lines by placing marks and cutting trenches; and
- (vi) do such other acts or things as may be prescribed:

Provided that no such person shall enter any boundary or any enclosed court or garden attached to a dwelling-house except with the consent of the occupant thereof for obtaining which at least twenty-four hours notice in writing of his intention to do so has been given to the occupant.

30. Indemnity, etc. --- (1) Nothing in this Act shall be construed as imposing upon the Authority, either directly or indirectly, any duty enforceable by proceedings before any court.
- (2) No suit, prosecution or other legal Proceedings shall lie against the Authority, the Chairman or any Member, officer, servant, expert, or consultant of the Authority in respect of any damage caused or likely to be caused or anything done or intended to be done in good faith under this Act or rules or regulations.
31. Rules.--- The Federal Government may, by notification in the official Gazette, make rules for carrying out the purposes of this Act.
32. Regulations. --- The Authority may make regulations, not inconsistent with the rules, on all matters for which regulations are expedient.
33. Removal of difficulties. --- If any difficulty arises in giving effect to any of the provisions of this Act, the Federal Government may make such order, not inconsistent with the provisions of this Act, as may appear to be necessary for the purpose of removing the difficulty.

THE SCHEDULE
[See section 2(g) and (m)]
PART-I

Designation Of National Highway	Route	Approved Length Km
N-5 Karachi-Thatta-Hyderabad-Moro-Multan-Sahiwal-Lahore-Jhelum-Rawalpindi-Peshawar-Torkham (formerly known as (G.T.Road)		1819
N-10 Liari-Gwadar-Gabd		653
N-15 Mansehra-Naran-Jalkhad		175
N-25 Karachi-Bela-Khuzdar-Kalat-Quetta-Chaman		813
N-35 Hassanabdal-Abbottabad-Thakot-Gilgit-Khunjrab		806
N-40 Lakpass-Naukundi-Taftan		610
N-45 Nowshera-Dir-Chitral		309
N-50 Khuchlak-Zhob-D.I.Khan		531
N-55 Kotri-Shikarpur-D.G.Khan-D.I.Khan-Kohat-Peshawar (Indus Highway)		1264
N-65 Sukkur-Sibbi-Saryab		385
N-70 Qilla Saifullah-Loralai-D.G.Khan-Multan		447
M-1 Islamabad-Peshawar Motorway		155
M-2 Lahore-Islamabad Motorway Including 32 km links and Lahore Bypass		367
M-3 Pindi Bhattian-Faisalabad Motorway		53
M-9 Karachi-Hyderabad Motorway		136

Part - II

Highway No.	Route	Length
S-1	KKH(Gilgit)-Skardu	167

ANNEXURE – II

**The National Highways & Strategic Roads
(Control) Rules, 1998 as amended in 2002**
(18 pages)

TO BE PUBLISHED
IN THE NEXT ISSUE OF THE
GAZETTE OF PAKISTAN PART-1

GOVERNMENT OF PAKISTAN
MINISTRY OF COMMUNICATIONS

Islamabad, the, 2005.

NOTIFICATION

S.R.O.....:- In exercise of the powers conferred by section 31 of the National Highway Authority Act, 1991 (XI of 1991), the Federal Government is pleased to make the following rules, namely:-

THE NATIONAL HIGHWAYS AND STRATEGIC ROADS
(CONTROL) RULES, 1998 AS AMENDED IN 2002.

1. **Short Title, Application and Commencement:-** (1) These Rules may be called the National Highways and Strategic Roads (Control) Rules, 1998, as amended in 2002.

(2) They shall apply to the national highways, motorway, strategic roads and bridges declared as such under the Act.

(3) They shall come into force at once.

2. **Definitions:-** (1) In these Rules, unless there is anything repugnant in the subject or context:-

(i) "Act" means the National Highway Authority Act, 1991 (XI of 1991).

(ii) "Appendix" means an appendix to these Rules.

(iii) "Authority" means the National Highway Authority established under Section-3 of the Act.

(iv) "Board" means the Executive Board of the Authority.

(v) "Bridge" means any structure including its sub structure and guide banks which carries a highway, road, railroad, utility, facility, pedestrian, other traffic over a water course, river, canal, nullas, water channels, railway line, stream, over, under or around an obstruction and with a clear span of more than 6.5 meters.

- (vi) "Building line" means the building line determined under Rule-5 or already established under West Pakistan Highways Ordinance, 1959 and as amended by Governments of Punjab, NWFP, Sindh, Balochistan, AJK and Northern Areas.
- (vii) "Chairman" means Chairman of the Authority.
- (viii) "Corridor Management" means carrying out of regulatory functions of the Authority in accordance with Regulatory Framework and Standard Operating Procedures (SOPs) or by any person or agency on behalf of the Authority.
- (ix) "Council" means the National Highway Council.
- (x) "Encroachment" means setting up, laying, erecting, excavating, constructing any type of building boundary wall, structure whether temporary or permanent (movable or immovable), scaffolding, tower, pylon, fence, hedge, post, sign board, advertisement, hoarding or banner, transmission line, duct or depositing or causing to be deposited, building material, dumping of garbage, solid/liquid waste, goods for sale, laying cable, wire, pipeline, drain, sewer/channel of any kind through, across, under or over any road, highway, motorway and bridge under its control or any other similar structure within the Right of Way (ROW) in violation of Rules-3, 4 & 6 without the consent, in writing, of the Authority;
- (xi) "Government" means the Federal Government.
- (xii) "Lease" means a letting of land or building to a person/firm/agency for specified rent and period.
- (xiii) "Management Contractor" means the service provider and under O&M agreement or any other duly executed agreement for corridor management, appointed to undertake the tasks assigned in the scope of services.
- (xiv) "Motorway" means a road especially designed and built for motor vehicles which does not serve the properties bordering on it except at special points and has separate carriageways for the two directions of the traffic and does not cross at level with any road, railway, tramway, cycle track or footpath.
- (xv) "National Highway" means a road specified in a Part-I of the Schedule and includes a road declared by the Federal Government by notification in the official Gazette, to be a National Highway.

- (xvi) "NHA" mean National Highway Authority.
- (xvii) "RAMD" means the Road Asset Management Directorate of the Authority as approved by the Board.
- (xviii) "Regulations" means Regulations framed under the Act.
- (xix) "Ribbon Development" means erection of any building or structure on the land lying between the ROW and the building line.
- (xx) "Right of Way (ROW)" means the land acquired for the purpose of construction of a national highway or any other road assigned to the Authority or taken over ROW of the roads declared as national highway or strategic road under the NHA Act and controlled by the Authority including bridges constructed and owned by the Authority.
- (xxi) "Road" means a road including land within the ROW and all works, such as, carriageways, cartways, footpaths, berms, side drains, culverts, bridges, tunnels, fences, posts, sign boards, plantation, lighting arrangements, intersections and medians assigned to the Authority.
- (xxii) "Regulatory Framework (Regulations)" means Regulations framed under the Act.
- (xxiii) "Rules" means Rules made under the Act.
- (xxiv) "SOP" means the Standard Operating Procedures.
- (xxv) "Strategic Road" means a road specified in Part-II of the Schedule and includes a road declared by the Federal Government by notification in the official Gazette, to be a Strategic Road.

(2) All other expressions used but not defined in these Rules, shall have the same meaning as are assigned to them under the Act.

3. **Restriction on Encroachment and Ribbon Development:-** (1) Subject to Sub Rule (2) of Rule 3, no person shall without the consent, in writing, of the Authority; (a) erect any, building, boundary wall and structure whether temporary or permanent, moveable or immovable; (b) set up any fence, hedge, post, scaffolding, tower, pylon, transmission line, dispenser, sign board, advertisement, hoarding or banner; (c) deposit or cause to be deposited building material, goods for sale, rubbish, industrial waste, waste water, sullage, industrial effluent or any other such matter or article etc.; (d) carry any cable, wire, pipeline, drain, duct, sewer or channel of any kind through, across,

under or over; and (e) make any excavation on road, highway, motorway, bridge or land:-

- (i) within seventy meters from center line of ROW of a national highway and no industrial building within one hundred meters on either side of the centre line;
- (ii) within two hundred and fifty meters from centre line of ROW of a motorway;
- (iii) within one thousand meters on either side of centre line at all interchanges and service areas in a length of one kilometer beyond connecting point of ramps and loops with a motorway and feeding roads; and
- (iv) within forty meters from center line of the ROW in case of sections of a national highway or strategic road or bridge which is situated in municipal limits and hilly areas.

(2) No such restriction on Ribbon Development referred to in Sub-Rule (1), shall apply in case of:-

- (a) any building/structure or excavation which is used or intended to be used mainly or exclusively for purposes of or relating to cultivation of land adjacent thereto otherwise than as a dwelling house or a commercial property;
- (b) any work begun before the date of coming into force the Highway Ordinance, 1959 (W P Ord XXXII of 1959), or any other provincial law on the subject or any work carried out in accordance with permission of any competent authority before that date; or
- (c) any national highway in respect of which a Building Line has been determined under Rule-5 or under any provincial law before the commencement of the Act.

4. **Prohibition to Construct or Layout any Means of Access:-** No person shall, without the consent, in writing, of the Authority, construct or layout any means of access to or from a national highway, motorway, strategic road or any other road or bridge declared as such under the Act.

5. **Determination of Building Line:-** (1) The Authority may determine a building line along one or both sides of a national highway, motorway, strategic road or any other road or bridge declared as such under the Act.

(2) The Authority shall, before proposing to determine a Building Line, take into consideration report of the National Highways and Motorways Police (NH&MP) or traffic police concerned and any planning scheme proposed, prepared or enforced in the same vicinity by any other local authority in that behalf.

(3) The Authority shall, if it is of opinion that a Building Line may be determined, publish in a local newspaper a notice in the form set out in Appendix-I for information of the general public and all persons having interest in the land and property covered under the proposed Building Line but it shall not be necessary to include a plan of the proposed Building Line in such notice.

(4) A copy or copies of the plan of the proposed Building Line shall be deposited at one or more places in or near the locality of the proposed building line and such place or places shall be specified in the notice.

(5) The plan of the proposed Building Line shall be available for public inspection for a period of not less than sixty days from the date of publication of notice under Sub-Rule (3).

(6) The notice shall invite objections to the proposed Building Line to be filed before a person specified therein within a period of sixty days from the date of issuance of the notice and all objections received within such period shall be taken into consideration by the Authority before determination of the Building Line.

(7) The Building Line so determined shall be declared by notification in the official gazette, and shall be effective from the date of such publication.

6. Prohibition to Construct or Maintain any Structure or Make any Excavation Between a Building Line and the ROW:- (1) No person subject to Sub-rule (2) of Rule-3 without the consent, in writing and no objection certificate of the Authority shall:-

- (a) erect any, building, boundary wall, shed, dispenser and structure whether temporary or permanent, moveable or immovable;
- (b) setup any fence, hedge, post, scaffolding, tower, pylon, transmission line, sign board, advertisement, hoarding or banner;
- (c) deposit, cause to deposit, building material, goods for sale, rubbish, industrial waste, waste water, sullage, industrial effluent or any other such matter and articles;

- (d) and carry any cable, wire, pipeline, drain, duct, sewer or channel of any kind through, across, under or over;

the land between a ROW and a Building Line.

(2) In case any building or structure and other amenities defined in Sub-section (1) of Rule-6 including a work or any part thereof which already existed (before determination of Building Line by the Authority under Rule-5 or under any provincial law before the commencement of the act) between the ROW and Building Line, the Authority may, whenever such building, structure and other amenities or part thereof has fallen down, by notice require such building, structure and other amenities or part thereof to demolish and set back to the building line and if the portion of land thus rendered vacant is included within the boundaries of road in relation to which such building line has been determined, such portion shall become part of the national highway, motorway, strategic road or bridge.

Provided that the Authority shall pay compensation to the owner of such portion of land or of the building which existed thereon for any damage caused to him by the setting back of building and structure.

7. **Payment of Compensation:-** (1) The Authority shall pay compensation to a person having interest in land, if he proves that his interest in land has been adversely affected by determination of Building Line.

Explanation:- For the purposes of this Sub-rule, the expression "interest in land" shall mean the interest in land vested in such person on the day the determination of Building Line comes into effect.

(2) For grant of compensation, such person shall furnish proof of danger or loss to the satisfaction of the Authority.

(3) No compensation shall be paid for any loss in so far as the land is subject to a substantially similar restriction under any other law or when compensation in respect of a substantially similar restriction has already been paid under the Act or any other law.

(4) The Authority shall pay compensation according to the market value of the interest in land prevailing at the time when determination of building line came into effect.

8. **Construction of Means of Access to or From the Road or to Construct a Building, Structure and Other Amenities Within a Building Line:-** (1) Any person wishing to obtain the consent of the Authority to construct a means of access to or from the highway or to construct a building, structure and other amenities within the Building Line determined under Rule-5 or under any provincial law before the commencement of Act shall apply to the Authority for grant of its permission.

(2) The applicant shall furnish to the Authority such plans, other relevant documentation and fees as it may require in this behalf as prescribed under NHA regulatory framework and SOPs for preservation and commercial use of ROW.

(3) The Authority shall, subject to due consideration to highway safety and convenience of road users and if satisfied that the permission to construct a means of access to, or from, the highway or to construct a building, structure and other amenities within the Building Line may be granted, inform the applicant accordingly, subject to such conditions as it may deem fit to impose on payment of such fees as it may fix.

(4) In case the Authority is of the opinion that such permission may not be granted, it shall record its reasons, in writing, for refusal to grant such permission and inform the applicant accordingly with reasons for such refusal.

9. **Removal of Encroachment:-** (1) If any person, without the consent of the Authority, makes any encroachment, the Authority shall give such person a notice in the form set out in **Appendix-II** to remove the encroachment within such period as may be specified by it and the period so specified shall not be of less than twenty four hours.

(2) In case such person fails to comply with such notice within the period specified therein, the Authority may under Section-12 of the Act take such action against such person as may be necessary to remove the encroachment and to recover the cost thereof.

10. **Determination and Recovery of Cost:-** (1) The cost to be recovered under Rule-9 shall be the actual cost incurred in removing the encroachment and the peace keeping cost as may be determined by the Authority.

(2) The Authority shall serve the person concerned with a notice to pay the cost within such a period as may be specified by it in the notice.

(3) In case such person fails to pay the cost, the Authority may recover the cost by sale of the material removed and the remaining sum due, if any, as an arrears of land revenue.

11. (1) No person, municipal committee, district government, cantonment board or any other government agency shall do any of the following acts within ROW without the consent of the Authority in writing, namely:-

(a) open or break up the surface of any road, highway, motorway, strategic road and bridge; or

- (b) construct or carry any cable, wire, pipe, drain, sewer channel of any kind through, across, under or over any road and bridge; or
- (c) within the boundaries of any road, repair or alter or execute any works on, or in relation to, any existing cable, wire, pipe, drain, sewer or channel of any kind, running through, across, under or over such road, highway, motorway and bridge; or
- (d) erect and install any structure or amenities and carry out commercial activities;

(2) In giving its consent under Sub-section (1) of Rule-11, the Authority may impose such conditions as it may deemed to be necessary and consistent with the performance of its duty as such the Authority may impose a rent or other charge for any land forming part of the road occupied by or applied to the proposed work.

(3) Any person or agency contravening or causing the contraventions of the provision of Sub-section (1) of Rule-11 shall be liable to prosecution under the provision of these Control Rules and the Authority may, also without giving any notice to the offender, remove the offending works, restore the road to its former condition and the Authority may recover the cost thus incurred from the offender as determined by the Authority.

(4) The cost recoverable under Sub-section (3) shall be such sum as may be determined to be the actual cost by the Authority may require the offender through a demand notice to pay the cost within a reasonable period not exceeding fifteen (15) days and in case he fails to make the payment within the specified period the cost shall be recovered as arrears of land revenue or from sale of material so removed.

(5) If any dispute arises between the Authority and any other government agency or person, out of or in relation to the exercise of powers of such authority under Sub section-1 such dispute shall be referred to arbitration under 1940 Arbitration Act. The cost of the arbitration shall be borne by municipal committee, district government, cantonment board and any other agency or the person concerned.

12. License for the Grant of Permission to Construct Approach Roads or Culverts for the use of Government Land for Construction, Installation of Filling/CNG Stations, Other Amenities and Laying of Utility Lines Through, Across, Under and Over the Road or Bridge:- (1) The Authority may, at its discretion, with due regard to the safety and convenience of the road user and subject to such conditions as it may impose and on payment of such fees and rental charges/lease charges as it may fix, permit any person or agency to; (a) setup filling/CNG stations, hotel/motel,

restaurants, sign boards, nurseries, shops, khokhas, hoardings, banners for a specific period; (b) to carry any cable, wire, pipeline, drain, duct, sewer or channel of any kind through, across, under or over any national highway, motorway, strategic road and bridge under its control; (c) to manage the national highway, strategic road or bridge corridor including all amenities in Sections or Sub-sections or part thereof as commercial entity through management contractor on behalf of the Authority, at a fee or ground rental charges prescribed by the Authority in the duly executed contract agreement approved by the Board or as prescribed under Regulatory Framework and SOPs of the Authority.

(2) Any person or agency wishing to obtain the consent of the authority to construct or lay out a means of access to or from or to construct a building, structure and other amenities within ROW and Building Line to which restrictions have been applied by or under Sub-section (1) of Rules-3, 6 and 11 and shall furnish with his application such plans and other particulars as may be prescribed by Authority and the Authority may refuse to grant the application or may grant the application subject to such conditions as it may deem fit to impose and ground rental charges and fees prescribed under Regulatory Framework and SOPs of the Authority.

(3) If the owner of CNG/filling stations, restaurants, hotels/motels, factories, nurseries, shops/khokhas and any other amenities or government agencies, departments, cantonment boards fails to pay the lease or ground rental charges in the prescribed time and fail to comply with the instructions of the Authority, a surcharge fee shall be charged at the prescribed rates as given in the Regulatory Framework and SOPs of the Authority.

(4) The land utilized other than approach road as specified by NHA shall be mandatory for the applicant to pay ground rental charges as determined by DCO or prescribed by the Authority @ 7% of the land value.

13. Lease of Government Land for the Erection of Filling/CNG Stations and Other Structures, Service Area Concessions and Amenities:- Licenses, leases and agreements for the construction or use by a private person or works of a private nature by any other agency for public works/utilities on land which is the property of government shall govern under the following Sub-sections of the Rule:-

- (1) Future Installation
 - (a) No objection/registration fees as prescribed by the Authority under its Regulatory Framework and SOPs for commercial use of ROW.
 - (b) Ground rental charges @ 7% (minimum) or prescribed by the Authority (with the approval of Board), of the land value assessed and notified by District Revenue Officers or any other prescribed authority for this

purpose, in the lease year shall be taken as ground rental for land.

- (c) The area of the land to be leased shall be clearly mentioned in square meters on the lease agreement and ferro plan accompanying it.
- (d) The ground rental charges shall be deposited in advance for three (3) years or on annual basis as prescribed by the authority in its Regulatory Framework and SOPs from the date of assessment.
- (e) The lease agreement shall be for thirty (30) years (maximum) or for the period prescribed by the authority. The ground rental charges will be fixed and will be appreciated after every three (03) years @ 7% or as prescribed by the authority in its Regulatory Framework and SOPs for the purpose of revision of ground rental charges.
- (f) In case of any dispute, either party shall have the right to terminate the Contract Agreement after serving ninety (90) days notice for termination to the other party.

(2) **Already Established Installations:-** The ground rental charges at the rate of 7% (minimum) of assessed value of the land by District Revenue Officers or any other prescribed authority shall be charged with effect from 1st July, 1999 from the already established CNG/filling stations within NHA ROW (previously leased by C&W Deptt. or District Councils) along with approach rental charges and NOC registration fees.

(3) **Agreement:-** An agreement on a stamp paper of a value equivalent to 4% of the annual ground rentals would be duly executed under Sub-sections-1 & 2 of Rule-13 by the two parties. The expenses for providing the stamp paper shall be borne by the lessee. Where government is the lessee it is exempted from stamp duty.

(4) The Authority may fix the ground rental charges for other commercial amenities with the approval of Board.

(5) If the owner of CNG/filling stations, restaurants, hotels/motels, factories, nurseries, shops/khokhas and any other amenities or government agencies, departments, cantonment boards fails to pay the lease or ground rental charges in the prescribed time and fail to comply with the instructions of the Authority, a surcharge fee shall be charged at the prescribed rates as given in the Regulatory Framework and SOPs of the Authority.

(6) Service area concessions under legally executed contracts approved by Board on case to case basis.

(7) The area up to the first dispenser will be charged in approaches while the remaining area will be measured in square meters. The ground rental charges will be fixed as notified by the DCO and will be appreciated @ 7% after every three (03) years.

14. **Lease of Government Land for Establishment of Movable Property like Nurseries, kiosks, Khokhas, Vendor Stalls etc:-** Licenses, leases and agreements for the construction or use by a private person or works of a private nature by any other agency for public works/utilities on land which is the property of government shall govern under the following sub sections of Rule:-

- (1) Future Installation
 - (a) No objection/registration fees as prescribed by the Authority under its Regulatory Framework and SOPs for commercial use of ROW.
 - (b) Ground rental charges @ 2½ (minimum) or prescribed by the Authority (with the approval of Board), of the land value assessed and notified by District Revenue Officers or any other prescribed authority for this purpose, in the lease year shall be taken as ground rental for land.
 - (c) The area of the land to be leased shall be clearly mentioned in square meters on the lease agreement and ferro plan accompanying it.
 - (d) The ground rental charges shall be deposited in advance for three (3) years or on annual basis as prescribed by the Authority in its Regulatory Framework and SOPs from the date of assessment.
 - (e) The lease agreement shall be for five (05) years (maximum) or for the period prescribed by the Authority. The ground rental charges will be fixed and will be appreciated after every three (03) years @ 2½% or as prescribed by the Authority in its Regulatory Framework and SOPs for the purpose of revision of ground rental charges.
 - (f) In case of any dispute, either party shall have the right to terminate the Contract Agreement after serving ninety (90) days notice for termination to the other party.

(2) **Already Established Installations:-** The ground rental charges at the rate of 2½% (minimum) of assessed value of the land by District Revenue Officers or any other prescribed authority shall be charged with effect from 1st July, 1999 from the already established moveable property like nurseries, khokhas, vendor stalls etc. within NHA ROW (previously leased by C&W Deptt or District Councils) and NOC registration fees and will be appreciated @ 2½% after every three (03) years.

(3) **Agreement:-** An agreement on a stamp paper of a value equivalent to 4% of the annual ground rentals would be duly executed under Sub-sections 1 & 2 of Rule-14 by the two parties. The expenses for providing the stamp paper shall be borne by the lessee. Where government is the lessee it is exempted from stamp duty.

(4) The Authority may fix the ground rental charges for other moveable commercial amenities with the approval of Board.

(5) If the owner of CNG/filling stations, restaurants, hotels/motels, factories, nurseries, shops/khokhas and any other amenities or government agencies, departments, cantonment boards fails to pay the lease or ground rental charges in the prescribed time and fail to comply with the instructions of the Authority, a surcharge fee shall be charged at the prescribed rates as given in the Regulatory Framework and SOPs of the Authority.

15. **Acquisition of Land:-** (1) The Authority may acquire any land situated between a building line and the ROW to which it relates, if in its opinion, such acquisition is necessary for the construction or improvement of the highway or motorway or strategic road or bridge.

(2) If the purchase cannot be effected by agreement, the Authority may certify that the land is required for the construction or, as the case may be, the improvement of a national highway, motorway, strategic road and bridge, and thereafter acquisition may be effected under the Land Acquisition Act, 1894.

16. **Temporary Closure of National Highway, Motorway, Strategic Road and Bridge:-** When any national highway, motorway, strategic road and bridge or portion thereof is temporarily closed for repairs or for any other purpose connected with the functions of the Authority under its Act and Rules in such a manner as to interfere with the passage of traffic, it shall be the duty of the Authority to set such notices as may be prescribed at each end of the closed portion, and the Authority may also announce the fact by such other means as it may deem proper; and the Authority shall further provide, so far as may be, reasonable means of access to the open portion of the road from the adjoining areas which have been deprived of access by such closure as well as a reasonable passage for through traffic, and may, for these purposes make temporary access or diversion roads through contiguous lands, after giving

reasonable notice to the owner thereof and shall pay reasonable compensation for any damage caused to such land thereby.

Copy of the notices shall also be provided to National Highways and Motorways Police fifteen days before the temporary closure.

17. **Notices:-** All notices under these Rules shall be served in the following manner:-

(1) In case the identity of the offender is known, the notice shall be served on him or on his known authorized representative or on the person found to be representing him at the site of occurrence of the offence personally and if these persons be not available or traceable or refuse to receive the notice, by affixation at a conspicuous place at the site of the offence.

Copy of the notice shall also be provided to National Highways and Motorways Police.

(2) In case the Authority is satisfied that the identity of the offender cannot be ascertained, a notice with the heading “to whom it may concern” affixed at a conspicuous place at the site of offence shall be deemed to have been served on the offender.”

18. **Financial and Administrative Powers**

<u>Nature of Power</u>	<u>To Whom Delegated</u>
(i) Determination of Building Line under Rule-5, along sides of National Highways, Motorways and Strategic Roads and Bridges.	Executive Board
(ii) Fixation of ground rental/lease charges For CNG/filling stations, hotels/motels, nurseries, shops, khokhas and other structures & other amenities under Rules-12, 13 & 14.	Executive Board
(iii) Payment/fixation/grant of compensation under Rule-7.	Chairman

- (iv) Approval of lease of government land under Rules-13 & 14.
- Executive Board Above Rs. 20.0 million (in each case) for lease period
 - Chairman Upto Rs. 20.0 million (in each case) for lease period
 - Member (Ops) Upto Rs. 5.0 million (in each case) for lease period
- (v) Permission to construct or layout any means of access to or from a National Highway, Motorway, Strategic Road and Bridge under Rules-8, 11 & 12. Member (Ops)
- (vi) Orders for Removal of Encroachments within ROW and preservation of Building Line under Rules-3, 4, 6, 9 & 11. GM (Region)/(Project)
- (vii) Determination and recovery of cost of removal of encroachment, from the person making the encroachment under Rules-10 & 11. GM (Region)/(Project)

NOTICE FOR DETERMINATION OF BUILDING LINE

WHEREAS, the National Highway Authority is of opinion that a building line may be determined between Km _____+ _____ and Km _____+_____ of National Highway/Motorway/strategic road (N-_____) (M-_____) (SR-_____) covering _____ side (specify cardinal direction i.e. Western/ .Eastern/Southern/Northern in addition to left or right of the said section of the road).

NOW, THEREFORE, this notice is hereby published for the information of the general public and of persons having interest in land and property covered under the proposed building line. The plan of the proposed building line has been deposited at _____ and at _____ for inspection at any time during the period from _____ to _____ and to file their objections in the office of _____(specify designation and address) within the period ending on _____.

Given under the hand and seal of _____ (specify designation), this _____ day of _____ (specify month and year) on behalf of the National Highway Authority.

Signature:_____

Name:_____

Designation:_____

Seal of the National
Highway Authority.

NOTICE FOR REMOVAL OF ENCROACHMENT

WHEREAS, Ms/Mr./Mrs./Mss _____
son/daughter of _____ has made an
encroachment within the Right of Way/between Right of Way and building line
in violation of the restriction on ribbon development in respect of the National
Highway/Motorway/ strategic road, within the meaning of National Highways
and Strategic Roads (Control) Rules, 1998 as amended in 2002 at
_____ and whereas the said
encroachment is liable to removal under the aforesaid rules.

NOW, THEREFORE, you are hereby directed to remove the aforesaid
encroachment within twenty-four hours, failing which the aforesaid
encroachment shall be removed by the National Highway Authority at your
expense and cost.

Given under the hand and seal of _____ (specify
designation), at _____ AM/PM on this _____ day of
_____ (Specify month and year) on behalf of the National
Highway Authority.

Signature: _____

Name: _____

Designation: _____

Seal of the

National Highway Authority.
[No F. 1(7)/DG(C)/97]

NATIONAL HIGHWAY AUTHORITY (NHA) ACT**CHAPTER III
POWERS AND DUTIES OF THE AUTHORITY**

10. The powers of the Authority ----- (1) The Authority may take such measures and exercise such powers as it considers necessary or expedient for carrying out the purposes of the Act.
- (2) Without prejudice to the generality of the powers conferred by sub-section (1), the Authority may for the purpose of carrying out the purpose of this Act:-
- (i) advise the Federal Government on matters relating to National Highways and strategic roads;
 - (ii) acquire any land in accordance with legal procedure and obtain and dispose of moveable and immovable property or interests therein;
 - (iii) undertake any work specified in sub-section (1) and (2) of section 11;
 - (iv) incur expenditure on works specified in clause (iii);
 - (v) procure plant, machinery, instruments and materials required for its use;
 - (vi) enter into and perform all such contracts as it may consider necessary;
 - (vii) levy, collect or cause to be collected tolls on National Highways, strategic roads and such other roads as may be entrusted to it and bridges thereon;
 - (viii) license facilities on roads under its control on such terms as it deems fit;
 - (ix) determine a building line between which and the ROW it shall not be lawful without the consent of the Authority to construct or maintain any structure or make any excavation;
 - (x) cause studies, surveys, experiments and technical researches to be made or contribute towards the cost of such studies, surveys, experiments or technical researches made by any other agency;

- (xi) exercise power to award negotiated contracts for projects to be undertaken through Private Sector Financing programme;
- (xii) seek and obtain advice and assistance for the preparation and execution of any plan programme or project;
- (xiii) raise funds (local and foreign) through borrowing, floating of bonds, sharing or leasing of assets or any other means from time to time;

Provided that a foreign loan shall be negotiated in consultation with the relevant Ministry of the Government of Pakistan.

- (xiv) perform any other function supplement, incidental or consequential to the purposes and functions aforesaid; and
- (xv) takeover ROW of the roads declared as National Highway with the consent of provinces and approval of the Federal Cabinet and Provinces shall simultaneously effect the mutation free of cost and without any liability or condition.