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DEVELOPMENT
PLAN

AFGHANISTAN:
RESOURCE GROWTH
CORRIDORS

EXECUTIVE
SUMMARY & KEY
FINDINGS

July 2012

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Prepared For
The World Bank

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Executive Summary

The Resource Corridors Concept

The Afghan economy must find new sources of growth if continued development and long-term stability are to be achieved. Afghanistan's resources sector offers many opportunities for economic development not found in other areas of the economy. Leveraging resource investments and developments to expand their utility can help broaden and transform the Afghan economy.

The Government of the Islamic Republic of Afghanistan (GIROA) recognized that a corridor approach to development anchored to planned, large mining investments will be essential and launched the National and Regional Resource Corridor Program (NRRCP). The World Bank established an advisory team to help the GIROA prepare this Resource Growth Corridor strategy.

The development of regional resource corridors is made pressing by the planned exit of most ISAF¹ forces by the close of 2014. Stability and security demand a broad-based economy that creates benefits and opportunities for many segments of the Afghan nation.

This Report is about the roles the rail sector can, and cannot, play in helping to leverage the mineral resources of Afghanistan, and how railways can help broaden and transform the economy. An important consideration in thinking about railways in Afghanistan is that the country had no railways until last year. The railway spur that was extended from Uzbekistan towards Mazar-i-Sharif was designed and built and is still operated by Uzbekistan's national railway. Afghanistan has no institutional or technical experience with railway technology or regulation. Given

¹ International Security Assistance Force, a NATO led security mission in Afghanistan established by the United Nations

Afghanistan's other pressing economic and development needs, it has limited, if any, resources available to subsidize rail investment and continuing operations.

Key Findings

The most pressing *rail* need for Afghanistan's development of resource corridors is the (a) commercialization of any railway and (b) the provision of terminals and other facilities for local distribution of wagonloads to industries and for transshipment between roads and rail. Transshipment includes a small modern container dry port. Commercialization includes the brokers, logistics companies, railway sales and pricing staff, and a market-driven operations staff.

Another pressing need is for the development of rail expertise and a regulatory authority that can oversee safety and interoperability and ensure access to infrastructure for shippers of all commodities.

Many schemes for railway lines in Afghanistan have been conceived and proposed. It is unlikely that most of them should, or even could, be constructed. Many, even if constructible, may not be financially viable; instead, their construction would create a drain on the Afghan national economy. The lines would not generate sufficient economic development to cover the cost to the debt necessary to build, operate and maintain them.

A few railway lines are feasible and could foster economic development along the northern border. These lines extend from Kunduz in the east to the Iranian border between Herat and Khaf. These railway lines are extensions of other regional rail networks. Most extensions would be 1520 mm gauge line built to Commonwealth of Independent States (CIS) standards. The CIS lines would connect with the Iranian 1435 mm network at Herat extending to Khaf. The CIS lines would also extend the Uzbek railway connection at Hairatan and the Turkmen connection at Torghundi. Some of these lines have been built or are underway.

Connections to Tajikistan through Sherkhan Bandar should be deferred pending completion of a route to Kashgar in China. This rail link is simply not a priority; the likely deficit from its operation and maintenance would be a drain on the economy and

government. Distribution of material west of Kunduz would logically be by truck from terminals located near Kunduz.

A review of the proposal for the copper mines at Aynak strongly suggests that constructing a new major railway is not necessary for the operation of the mine. Copper products could be moved by road transport. But, it is highly uncertain that the oft-delayed Feasibility Study by Metallurgical Construction Company (MCC), that is now due in 2014, will show that a North-South railway from Hairatan to Kabul through to Torkham, thence connecting with the 1676 mm Pakistani network, will be economically justified. In any event, the feasibility report is not expected before 2014, and construction of this difficult line would extend at least through 2020.

There are alternative near-term investments in transportation that MCC could make that would foster economic growth sooner than the North-South line. Indeed, it is likely that the deficits incurred on operating and maintaining a North-South line would be an economic drain on the Afghan economy. Therefore, this report recommends against actively pursuing this route.

Analysis of the proposals for the iron ore mines and possible metallurgical works near Hajigak shows that the maximum projected output of the mines would exceed the current capacity of connecting Iranian or Pakistani networks without a major upgrading of those network's assets to support low-cost cargo operations. This upgrading is not currently contemplated. Exploiting the mines and any steelworks at the scales described for full production requires the eventual construction of an entirely new medium-to-heavy duty railway through Afghanistan plus substantial upgrading of existing lines or, more likely, a new rail line to ports in Iran or Pakistan. This entirely new mining railway would likely extend from Hajigak southwesterly, passing the Ring Road highway, thence by a new line to an ore port at Chabahar, Iran or Gwadar, Pakistan. Consideration of this future railway must await geo-political developments not within the time or scope of this report. At the present time, the Indian sponsors of the Hajigak mines have publicly stated that they intend to use trucks to move mine products to Gwadar for export. On the other hand, other sponsors have expressed plans to build a railway to one of the ports.

It is possible that not all of Hajigak's output would need to move across a single route (to either of the Iranian or Pakistani ports). It

is more likely that output would start low and rise over time.² Some output could be distributed and used inside Iran; some could exit via the CIS rail connections if a line were extended through Dar-i-Suf, and some, especially pig iron and steel mill products, might be trucked to various outlets, including within Afghanistan and Pakistan.

Construction of short-haul railways less than 100 km from coal mines or ore pits to generating stations or smelters may not add to the general transportation network. The iron ore mines, metallurgical works, coal mines, and associated electric power plants may choose to make these substantial investments as a part of their overall resource development investment. However, unless these lines contribute rail transport capacity beyond the limited short-haul, they are only part of the production mining/production facilities. In the future, such lines may become a part of a larger national rail network.

.... investments in basic highways and roads make more sense for local and regional corridor development at this time. ... transport investment should focus first on all-weather, high axle-load highways.

The Asian Development Bank's study of the railway gauge issue persuasively argues that both traffic flows and the problems of interoperability show that the *concept of a single gauge ring-railway around Afghanistan is flawed*. Our technical analysis shows that the use of UIC-oriented standards, which was the policy choice in the past, to be the wrong choice should a ring-railway even be built: a result also supported by the ADB's gauge study.

Because no subsidy mechanism has been identified to fund the inevitable major losses that light-density passenger services create, no investment or provision for service should be contemplated at this time.

We believe instead that investments in basic highways and roads make more sense for local and regional corridor development at this time. Indeed, transport investment should focus first on all-weather, high axle-load highways instead.

² It may be possible for the IRIR to gradually upgrade its capacity as volume builds.

Background Issues

Although there are only a few natural resource growth corridors, there are many competing, complementary and even contradictory proposals and plans for railways that might be built, and hence, contribute to the development of the corridors.



The first rail-oriented corridor is the mineral rich alignment centering on Kabul itself: to the South are the Aynak copper deposits; to the West are deposits of iron ore and steam and metallurgical coal. The iron and the copper ores have been concessioned for development. The concessions include opportunities to exploit the coal deposits.

The second rail-oriented corridor stems from the oil and gas fields in northern Afghanistan. These await further development, and lie along a natural railway route that extends out of Iran towards Tajikistan, linking up intermediate extensions of the Uzbekistan and Turkmenistan national railways, themselves linked through the CIS common rail network.

The purpose of the report was examining the myriad of proposals for constructing railways into and inside Afghanistan. Different parties have advanced different ideas; yet other parties have adopted some of these ideas, even though the initiating party may have abandoned the idea. Most of the ideas have not been

accompanied by careful engineering estimates. Only a few include any economic analysis, and even these analyses use global averages as if Afghanistan is an average nation with average terrain and typical problems.

Any current plan for a railway must consider its surrounding quite different politico-technical regions. Afghanistan is landlocked so railways to places outside Afghanistan must connect to railways built to different country technical standards.

The analysis of what, if any, railways could contribute to the development of resource growth corridors and to growth in the Afghan economy is made more difficult by significant constraints:

- Afghanistan’s security issues, which are well known and are not discussed here.
- Afghanistan has almost no institutional knowledge of railways, of how to design, operate, and maintain them.
- Afghanistan has almost no commercial knowledge to assist consignees and consignors, and logistics firms.
- The Government has few resources to subsidize railway investment, maintenance, and continuing operations.

Our analysis framed its recommendations in light of these constraints.

Interoperable cargo trains require that wagons have a common technical standard

Flaws with the Concept of a Ring Railway

Track Gauge

The obvious problem with the ring railway is that Afghanistan’s connections with other regional and trans-Asian networks have different gauges. Earlier studies assumed away this problem by positing that, because technologies and practices exist that permit railway stock to move from one gauge to another, change of gauge would not be a problem.

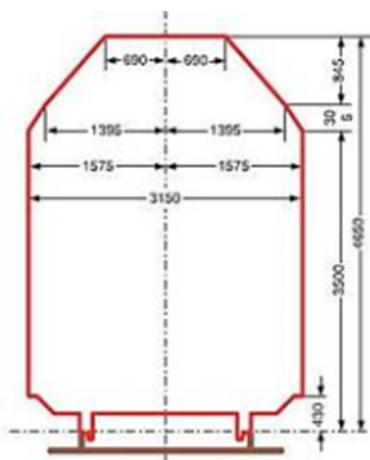
The ADB’s *Rail Gage Study Report* argues that there are manifest and serious problems with changes of gauge in a concept of a ring railway.³ Based on our analysis in Table One and our experience,

³ pages 8 thru 23, *Op Cit.*

we agree with the ADB's *Rail Gauge Study Report's* conclusions about these flaws and the need to resolve the problem by abandoning the concept of a 1435 mm true ring railway.

Interoperability

We go further than the ADB's report. The report brings up the important fact that the ability to operate trains from one region in another region around a ring railway becomes very difficult – and in some instances impossible – because the technologies and physical dimensions of the different regions are very different or totally incompatible.



The ADB report notes that different systems have different clearance outlines. That is: the tunnels, station platforms, curves and other features are narrower or lower on different systems: a railcar from China may not fit into a tunnel in Pakistan; an ore train from Afghanistan may be too heavy for a bridge in Iran.

Even when changing bogies and other compromises can accommodate a train, a basic problem remains. Trains – other than container trains and block trains of minerals or oil – are assembled from wagons from *everywhere* in one large region and then travel to *everywhere* in another region. This permits, for example, assembly of trains with wagons of Finnish paper, Ukrainian steel, Kazakh diesel fuel and Russian building lumber to arrive in Termez, Uzbekistan, for distribution to Uzbekistan and to the new Afghan line from Hairatan to Mazar-i-Sharif.

This assembly of wagons into cargo and even passenger trains requires the wagons all to be built to uniform technical requirements. The “running gear” of brakes, bogies, couplers must all couple with each other then interact uniformly. Air brakes must operate at the same pressures. The strength of couplers must be the same as the couplers act as the links of the chain of wagons that make up a train. Coupling these cars into the same train reduces the maximum permitted weight of the train to the strength of its weakest link. Requiring inter-regions to “hub” their cargo trains around the ring railway requires that all rail commerce be moved in either special block trains or be reduced to the technology of the weakest link of the railway chain, in this case the 19th Legacy infrastructure of Pakistan.

Financial Problems with the Ring Road

We summarized the various proposals contemplated by the Ministries to complete a ring railway and its branches. The entire construction budget – based on what may be highly problematic studies by third parties⁴ – amounts to \$12 billion dollars for 3,160 kilometers of new construction. This sum does not include the initial working capital or most of the rolling stock and maintenance depot spares, much less start-up losses! It is clear that the sheer cost of the ring railway and its branches are well beyond the financing ability of Afghanistan. The financial difficulties the subsidies to operate and maintain the railway.

A core financial problem is that even if the projected economic benefits projected in the studies happen, there is no method of capturing those savings by the railway operators or by the Government.

The core financial problem inherent in the Pre-feasibility studies concerns the projected economic benefits. The typical projected benefits arise from transport expenses reduced by diverting from highway to railway and from broader benefits, such as reduced pollution and increased safety. However, there is yet no method of capturing those savings by either the railway operators or by the Government. Shippers would privatize the supposed cost reductions benefits while the railways' operating losses would remain public.

Resource Corridor Development

In any event, a ring railway that acts as a routing hub for other regions to use Afghanistan as a rail conduit does not automatically generate resource growth corridors.⁵ Once construction is finished, development would be limited to transit fees and some train crew and maintenance crews. A review of the various studies for CAREC, TRACEC, and EurAsEc groups' routes transiting Afghanistan shows just that: ways of connecting distant economic regions, rather than developing regional economies inside the county being transited.⁶

⁴ For example, Table 3 of the *Pre-feasibility Study* for Phase II shows contingencies of 34% for a non-mountainous line but Phase III uses less than 10% for mountainous lines in security issues areas. See also the World Bank's informal note on Phase III suggesting that \$2.7 million per km may be more appropriate than the \$2.2 million km employed in Phase III.

⁵ The entire question of whether or not an Afghan-routed hub would compete with \$800 TEU sea routes is not addressed. However, HWTSK's work in other studies argues that such a route – even if there were not technical problems – would not compete with the current sea routes at \$800 per TEU.

⁶ See, for example, Appendix II of the Final Report for the Mazar-i- Sharif I-A Corridor.

Recommendations & Priorities

Summary

It is unlikely that many of the schemes conceived for railways in Afghanistan should, or even could, be constructed. Some, even if constructible, may not be financially viable; instead, constructing these rail lines will create a drain on the Afghan national economy. The lines will not generate economic development and its resulting revenue. Instead, the lines will require subsidies for operation of trains and maintenance of assets.

Therefore, basic highways and roads may assume a higher priority for local and regional corridor development. Basic highways and roads make more sense for local and regional corridor development. Indeed, the answer to what additional rail lines should be built may turn out to be a focus on all-weather, high axle load highways instead.

The first and foremost of these rail recommendations concerns commercialization.

#1 Commercialization & Development

The most pressing rail need for Afghanistan's development of resource growth corridors is the (a) commercialization of any railway and (b) the provision of terminals and other facilities for local distribution of wagon-loads to industries and for transshipment between roads and rail. Transshipment includes a small modern container dry port, possibly at Mazar-i-Sharif's airport. Commercialization includes the brokers, logistics companies, railway sales and pricing staff, and market-driven railway operations staff.

Because mineral-only railways will not provide a broad-based platform for economic development, it is important to sponsor general-purpose cargo railways that build in the physical capacity to move both general cargo and the output of mines and metallurgical works. To be successful at providing general cargo

services on a commercial basis, railway enterprises should have these characteristics:

- Railways are managed to minimize costs and generally have lean staffing levels
- Railways buy or lease second hand rolling stock – freight wagons, locomotives, and passenger equipment -or have customers lease their own wagons
- Commercial and marketing staff hold important high-level positions and have adequate sales staff and international representation. *The viability of the railway enterprise depends on attracting traffic and commercial arrangements with customers.*
- Railways team with and support freight forwarders, shipping agents, distribution and logistics companies, trucking companies and other commercial intermediaries normally involved in distribution and local shipping services

Successful general cargo railways are not forced to endure direct rail competition on the basis of access rights. They may share infrastructure with bulk operators, but they do not compete with other rail enterprises operating under access rights unless network density is high or the government subsidizes the infrastructure. This has implications for “open access” thinking: Giving competitors “open access” to an asset may discourage the potential developer of that asset from building it, thereby requiring more grant funds to construct the assets. Conventional wisdom is to permit “open access” but conventional wisdom fails in this case. But only an irrational or highly subsidized operator of a general cargo rail will finance and then develop a broad base of general cargo shippers and terminals if the operator must then face open competition from newcomers that did not share the expense and risk of creating the market.

Integration with Other Modes

The design of any future rail investment should include design provisions for integrating the rail mode with other modes, particularly trucking. These provisions include:

- Public delivery tracks with loading docks, unloading tracks for bulk wagons, loading ramps to flatcars, well-drained & graded parking for trucks, and well-drained, paved road access.
- Land that is available for private-sector business to set-up food service, truck repairs, and fueling stations.

- Track switches leading to land that is available for private-sector development of warehousing and logistics, bulk terminals for fuel, scrap and recycling material yards and even manufacturing plants.

These intermodal nodes should be located where rail lines cross the ring roads, particularly for new mining lines.

Operating Plan & Customs Clearance

The construction of any future rail investment should include an operating plan for trains. The plan should show at what classification or marshaling yard trains will be assembled; where customs will be cleared, and at what points passing loops should be placed. The operating plan should precede the design of the infrastructure.

#2 Regulatory Matters:

Technical, Safety and Environmental Regulation

A safety regulator is needed now because international experience shows that it is difficult to retrofit processes into an existing operation as methods of operations tend to become entrenched.

It is important not to impose unnecessary restrictions. However, mining railways should not be simply allowed to determine the standards they use. If they were, once the railways are eventually joined up, significant costs might be involved in conversion. On the other hand, railways built as spurs from adjacent countries should normally be allowed to adopt the standards of those countries.

For each railway, technical and safety standards need to be approved and their implementation supervised. They should be based on international standards such as those of the UIC, AAR or CIS, but should reflect Afghan conditions. Environmental standards would be subject to existing Afghan legislation and the rail regulator should co-operate with the National Environmental Protection Agency.

However, the powers of the regulator need to be constrained. For example, the regulator should not impose standards without justification, especially on such key policies as gauge, which have major economic and commercial implications. A national policy

on standards therefore needs to be established and possibly defined in law. The regulator would need to enforce the policy, mainly through the licensing process.

The regulator would also be responsible for ensuring accident investigations are carried out to the required standard although these might be carried out by separate bodies. Significant training is required to establish the capability to analyze the immediate and underlying causes of accidents, and to recommend practical remedies and implementation timetables. *The safety regulator must be independent of and insulated from all political and commercial pressures*, and may be affiliated with an outside organization, such as the United States' Federal Railway Administration or the United Kingdom's Office of the Rail Regulator. These organizations have few if any conflicting interests with the regional railway networks that would connect with Afghanistan.

The regulator's enforcement powers on safety would derive from its power to impose fines and to issue/revoke licenses to operate.

Economic Regulation

In principle, there should be no independent economic regulation. Railway companies would be allowed to charge "what the market will bear" and, if one railway company wishes to gain access to (and use of) the infrastructure of another railway, this should be matter for commercial negotiation between them. This would ensure that investors make good returns on their investment and so have an incentive to invest in Afghanistan's future.

However, the GoIRA may insist that for reasons of political acceptability or economic development, general cargo should be carried on miner owned lines. This is despite some miners not having much interest in this business, preferring, instead, to concentrate on exporting mining products. Another example where regulatory interventions may be desirable is where a small Afghan owned mine wants to use railway infrastructure owned by big foreign mine.

While it is generally desirable to require that third party access is permitted on high-volume railways, and that access charges are fair and do not discriminate between operators, there are exceptions if Afghanistan wants to encourage development of general cargo for resource growth corridors. (This exception does

not apply to mining movements.) Where there is no competition between operators, customer tariffs may also need to be regulated. Therefore, a national policy is needed to set the framework for access to reduce uncertainty to PPP and other investors.

The need for the regulator to also undertake independent economic regulation is not as urgent as it is for safety. It may be avoided altogether, depending on how the railways develop and the practicality of handling economic regulation through concession agreements and experience in other sectors with the proposed law on competition.

Location of Regulator

The initial ideal location for the rail regulator would be under the Ministry of Transport and Civil Aviation, which should also make transport policy. However, this Ministry needs institutional capacity building and lacks funding.

Ideally the regulator should be independent in its decision making of any Ministry. This is important for attracting private investment since potential investors may be concerned about political interference in decision-making. The head of RRA should therefore be appointed by Parliament on the recommendation of the responsible Minister. The regulator should have a Board on which other ministries might be represented to ensure that their policies are fully represented.

Funding the Regulator

The regulator could either be funded by the Government's general appropriations or by the railway industry through concession or license fees. Funding by the industry has the advantages that funding is not placed in jeopardy by Government financial problems and it may make it easier to pay higher salaries to attract better quality staff. The EU has provided a grant for training the staff in the regulator.

#3 Passengers Trains Inhibit Development

If the goal of constructing and operating railways in Afghanistan is to foster broad-based economic growth, especially in mineral resource corridors, *the operation of passenger trains will be a mistake.* Passenger trains require additional infrastructure investment,

create chronic operating expense deficits, and give rise to special safety needs. Governments face strong political pressures to force mineral and general cargo traffic to cross-subsidize passenger operations. All of these problems will dissuade potential investors and operators of railway service for coming forward. At the population densities and distance now facing Afghanistan, other modes of passenger travel are clearly more rational. These other modes include roads and airports.

#4 Development of Specific Rail Corridors

The Ring Railway & CAREC

The Asian Development Banks study of the railway gauge issue persuasively argues that both traffic flows and the problems of interoperability make the concept of a ring-railway around Afghanistan to be untenable. Our technical analysis shows that the use of a UIC-oriented 1435 mm gauge, which was the policy choice in the past, to be the wrong choice should a ring-railway even be built, a result also supported by the ADB's gauge study.

Our analysis based upon Table One of the Appendix shows that the 1435 mm Iranian network and the 1676 Pakistani network have serious limitations in the amount of cargo these railways can reliably move, and in the tonne-kilometer cost of moving cargo. These facts call into question the entire idea of a ring railway serving as a hub for CAREC routes or as a catalyst for resource growth corridor development.

Lines to the CIS

There are a few railway lines that might be feasible and might foster economic development along the northern border. These lines extend from Kunduz in the East to the Iranian border between Herat and Khaf. These railway lines are connections of other regional rail networks to Afghanistan's economy. Most connections would be 1520 mm gauge line built to Commonwealth of Independent States, or "CIS", standards, or better. The CIS lines would also extend the Uzbek railway connection at Hairatan and the Turkmen connection at Torghundi. Some of this has been built or has been studied. The ADB is facilitating these lines' development at present.

However, highway development, repairs, and improvement should not be deferred to fund rail expansion.

Lines to Iran

The CIS lines described above would connect with the Iranian 1435 mm network at Herat extending to Khaf. Package 4 of the Iranian line needs to be designed differently than the previous Iranian designs. This final 60+ kilometer line to Herat should have the commercial and intermodal facilities described above and should be built with a greater axle load and longer passing loop length.

Lines to China

Connections to Tajikistan through Sherkhan Bandar should be deferred pending completion of a route to Kashgar in China. This rail link is simply not a priority. As with other rail lines, the likely deficit from its operation and maintenance would be a drain on the economy and government. Distribution of material west of Kunduz would logically be by truck from terminals located near Kunduz should a 1520 mm line from Herat to Mazar to Nainabad be constructed.

Lines to Pakistan

The severe reduction in the Pakistan Railways' cargo capability closes off any short-term efforts to build connections at Torkham through the Khyber Pass and at Chaman through the Bolan Pass.

The cost of modernizing the Pakistan Railway infrastructure, and replacing its fleet of cargo locomotives is sufficiently large to terminate short-term efforts to build connectors to these outlets.

Miners: Aynak

A review of the proposal for the copper mines at Aynak strongly suggests that constructing a new, major railway is not necessary or even desirable for the operation of the mine. It is highly uncertain that the oft-delayed Feasibility Study by MCC that is due in 2014 will show that a North-South railway will be justified from Hairatan to Kabul through to Torkham, thence connecting with the 1676 mm Pakistani network. In any event, the feasibility report is not expected before 2014, and completion of this difficult line would extend at least through 2020. It appears that there are alternative near-term investments in transportation that MCC could make that would foster economic growth sooner than the

North-South line. Indeed, it is likely that the deficits incurred on operating and maintaining a North-South line would become an economic drain on the Afghan people and government. Therefore, this Report recommends against actively pursuing this route.

As attractive as a North-South Route extending through Kabul province may sound, it will have deep operating problems that will reduce potential revenue while increasing operating costs. To recap just some of these problems:

- (1) The high value copper from Aynak will probably exploit be transported using empty backhaul truck capacity instead of slower backhaul railway wagons, causing a loss of high-revenue cargo.
- (2) The South connection is to a dilapidated Pakistan system that has very limited capacity and troubled geo-politics.
- (3) Bamyan iron always has a shorter route down through the Dar-i-Suf coal fields to reach northern markets
- (4) Operating costs in the snow and steep grades are high.

Miners: Hajigak

Analysis of the proposals for the iron ore mines and possible metallurgical works shows that the maximum projected output of the mines would eventually overwhelm the capacity of connecting Iranian or Pakistani networks unless both networks commit to major upgrading programs, possibly coupled with new operating procedures in the interim. At the present, there is little to indicate this will come about for either Iran or Pakistan.

Instead, there are two alternatives for exploiting the mines and any steelworks. One alternative requires construction of an entirely new medium-to-heavy duty railway through not only Afghanistan, but also to ports in Iran or Pakistan. This entirely new mining railway would likely extend from Hajigak southwest, passing the Ring Road highway, thence by a new line to an ore port at Chabahar, Iran or at Gwadar, Pakistan. Because of political considerations, consideration of this future railway must await developments not within the time or scope of this report. At the present time, the Indian sponsors of the Hajigak mines have publicly stated that they intend to use trucks to move the mine

products to Gwadar and then to India; on the other hand, others have expressed plans to build a railway.

The best alternative is constructing a CIS-style 1520 mm line down past the coalfields to the new railhead at Mazar-i-Sharif and thence westward to connect with the CIS outlet at Torghundi and the Iranian outlet that is supposed to reach Herat..

The best alternative is constructing a CIS-style 1520 mm line down past the coalfields to the new railhead at Mazar-i-Sharif and thence westward to connect with the CIS outlet at Torghundi and the Iranian outlet that is supposed to reach Herat. This railway would facilitate economic growth by providing links to the CIS nations and Iran. The links would be for general cargo and mine outputs. Not all the products of the mines would need to be instantaneously funneled into one UIC-style Iranian rail corridor, and rail lines' axle gauges could be gradually upgraded as tonnage volumes increased.

Miners: Physical Characteristics of New Construction

In return for the ability to obtain an alignment and the provision of security forces, the GoIRA should require any mining railway to be built with basic physical characteristics. These characteristics should result in building a national transportation asset.

- The railway should have a loading gauge that permits general purpose cargo wagons and that facilitates the construction by third parties of cargo distribution terminals where there is the likelihood of demand for general rail cargo shipments.
- The railway should minimize reliance on sole-source technologies and products.
- The railway should not gamble on untried or cutting edge technologies. Afghanistan should not be a “test bed” for railway designs development.