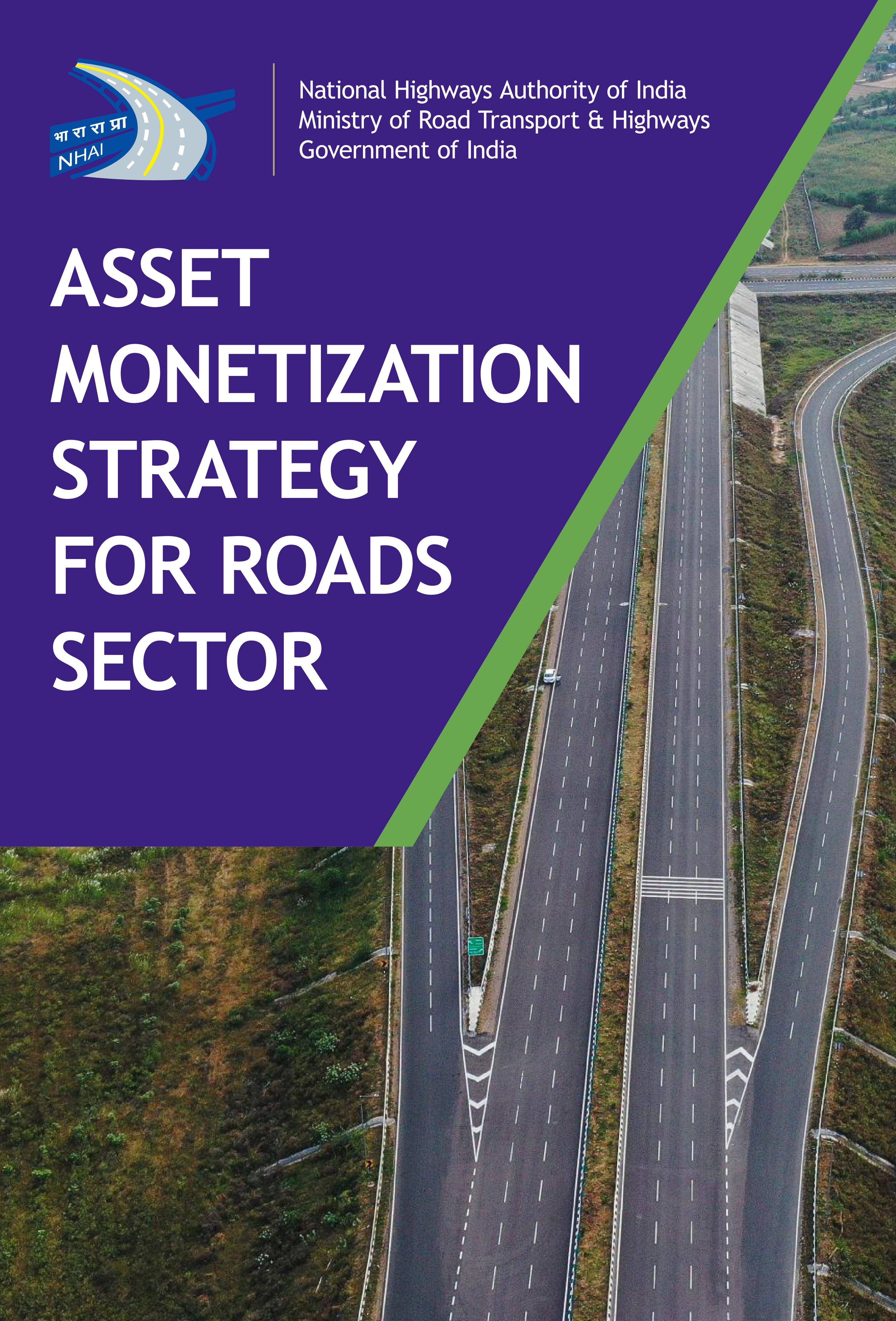
National Highways Authority of India
Ministry of Road Transport & Highways
Government of India

ASSET MONETIZATION STRATEGY FOR ROADS SECTOR



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Message from Chairman, NHAI

The National Highways Authority of India (NHAI) has been at the forefront of transforming India's road infrastructure, playing a pivotal role in the nation's economic growth and connectivity. As we continue to expand and enhance our national highways, it is imperative to explore innovative funding mechanisms to sustain and accelerate this development.

Asset monetization has emerged as a strategic tool in our efforts to unlock the value of existing assets and attract private sector investment. By leveraging models such as Toll-Operate-Transfer (ToT) and Infrastructure Investment Trusts (InvIT), we have successfully generated significant funds, which are being reinvested into new highway projects. This approach not only ensures financial sustainability but also brings in private sector efficiencies and advanced technologies, enhancing the quality and longevity of our road assets.

This document on the Asset Monetization Strategy outlines a comprehensive framework to maximize the benefits of asset monetization. It emphasizes the importance of a structured approach to asset identification, valuation, and transaction execution, ensuring transparency and fostering investor confidence.

"The successful implementation of this strategy will provide NHAI with a steady stream of financing, reducing our reliance on traditional funding sources."

This will enable us to undertake more projects, accelerating the pace of infrastructure development across the country. Additionally, private sector participation will bring in advanced technologies and management practices, enhancing the quality and longevity of our road assets and enhancing road user experience.

I appreciate the dedicated team at NHAI and our partners for their efforts in preparing this document. Together, we will continue to build a world-class highway network that meets the needs of today and paves the way for a prosperous future for India.

Santosh Kumar Yadav
Chairman,
National Highways Authority of India

Bridge over Narmada

Foreword by Member Finance, NHAI

India's extensive road network, particularly the national highways, plays a crucial role in the country's economic development. With increasing demands on our infrastructure, it is imperative to explore innovative funding solutions. Asset monetization, which involves leasing public assets to private entities for a defined period, has proven to be a valuable tool in this regard. By unlocking the economic value of completed road assets, we can attract private sector investment and improve operational efficiencies.

In July 2019, the National Highways Authority of India launched its first ever bundle of roads to be monetized under Toll-Operate-Transfer mode. Since then, NHAI has been actively engaged in asset monetization, leveraging this approach to generate funds for development of new highway infrastructure projects. As member of this ecosystem, I am pleased to present this strategy document, which aims to accelerate NHAI's asset monetization efforts and enhance its effectiveness.

By standardizing processes and disseminating relevant information, we aim to broaden our investor base, secure better valuation for our assets.

This document is a product of diligence of dedicated teams at NHAI and our consultants. I commend their hard work and dedication in putting together a document that would guide asset monetization efforts in highway sector.

> "This document outlines a strategic framework to maximize the benefits of asset monetization. It emphasizes the need for a structured approach to identify and value assets, ensuring transparency and fostering investor confidence."

NRVVMK
Rajendra Kumar
Member Finance
National Highways
Authority of India

Introduction to National Highways Authority of India (NHAI)

India has about 63 lakh km of road network, of which 1.46 lakh km are National Highways. ~50% of India's traffic is transported through national highways. As per a socio-economic assessment of national highways by IIM Bangalore[1], development of NHs has a multiplier effect on the economy, in terms of facilitating trade and enhancing the overall economic development of a region. As per a 2013 study by National Institute of Public Finance and Policy (NIPFP)[2], capital expenditure by the government on infrastructure (e.g., for development and construction of national highways) has a multiplier effect of 4.4x on the nation's GDP. A similar financial multiplier study conducted by RBI in 2019 assessed this capital expenditure multiplier as 3.25x.

The Ministry of Road Transport & Highways (MoRT&H) has been entrusted with development, maintenance, and management of National Highways. One of the primary mandates of MoRT&H is the development of world class National Highways and delivering quality service levels to the road users, which would aid the development of the economy and the nation.


UER-II

Through MoRT&H's various agencies, the National Highways Authority of India (NHAI), Roads Wing, and NHIDCL (National Highways & Infrastructure Development Corporation Limited), it is able to deliver on its mandate to develop and manage India's national highway network.

To fund this highway development program, MoRT&H has relied on multiple sources of funding, primarily including the below:

1. Budgetary support allocation from Government of India, accounting for 93% of total funds in FY24-25 (including toll accruals from completed National Highways and ToT proceeds)

2. Project based Financing and Monetization through InvIT, 7% of total funds in FY24-25

To support MoRT&H's increased funding requirements with accelerated pace of highway construction, new innovative models of monetization have been successfully explored and implemented to reduce dependence on Central Government budget and external debt.

The asset monetization program of road sector is managed entirely by NHAI.

The subsequent section provides the objectives of asset monetization as outlined by NITI Aayog as part of its National Monetization Pipeline.

[1] Draft Final Report of IIM Bangalore (2024): Assessment of Socio-Economic Impact of Investment in National Highways Development
[2] NIPFP Paper on Fiscal Policy, Devolution and Indian Economy (2019)

Introduction to Asset Monetization

Asset monetization, also commonly referred to as asset or capital recycling, is a widely used business practice globally. It entails a limited period license / lease of a public sector asset to a private sector entity for an upfront or periodic consideration through a well-defined concession/ contractual framework. Hence, it is a virtuous cycle where existing assets are converted into source of funds, which are then invested in creating new assets.

The objectives of NHAI's Asset Monetization Programme are derived from the National Monetization Pipeline of the NITI Aayog, Govt. of India, viz.:

"to unlock the value of investments in public sector assets by tapping into private sector capital and efficiencies which can thereafter be leveraged for capacity augmentation / greenfield infrastructure creation."[3]

Through asset monetization of roads, NHAI aims to achieve the following:

1. **Unlocking of Value:** Economic value of completed road assets is unlocked, leading to generation of funds that can be invested in new projects

2. **Attracting Alternate Sources of Capital:** Alternate source of attracting capital, in addition to traditional sources of funds such as budgetary allocation and toll revenues to ensure adequate and efficient funding

3. **Efficiency Improvements:** Through monetization, there is greater participation in Operations and Maintenance (O&M) of private players, who would ensure higher standards of project management and use of innovative technologies for upkeep of the road asset. This can lead to efficiency gains in management of road infrastructure

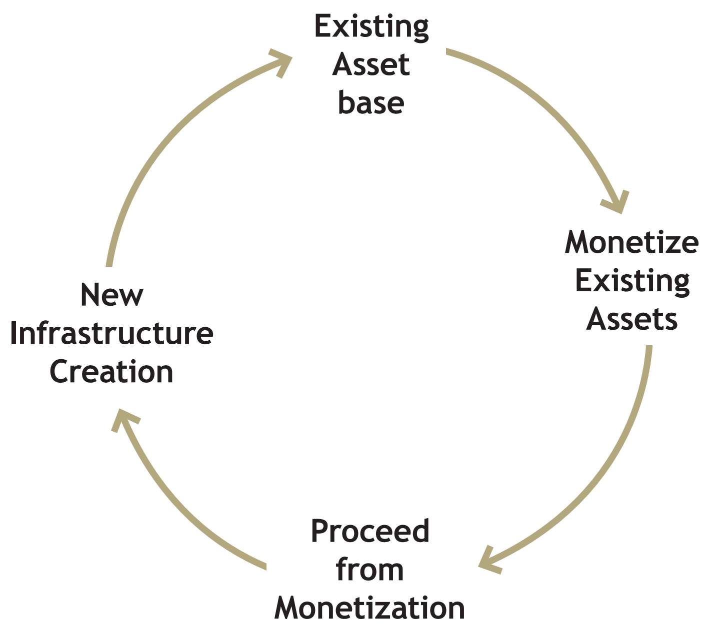
[3] NITI Aayog (2021): National Monetization Pipeline- Volume 1: Monetization Guidebook: Vol. I

Delhi - Dausa - Lalsot Section of Delhi - Mumbai Expressway

Asset monetization has thus become an important means to finance the infrastructure commitments made to the nation.

To ensure the benefits of asset monetization are realized fully by NHAI and MoRT&H, a comprehensive and structured strategy that systematically identifies monetization opportunities and details the actions required to unlock the same has been formulated. Subsequent sections of this document will cover this strategy across various dimensions.

Figure 1:
Infrastructure Asset Monetization Cycle



The strategy document is organized in the following manner:

Chapter 01

Chapter 01:
Overview of Current Status

1.1. Overview of Asset Monetization Models

Cabinet Committee on Economic Affairs, chaired by Hon'ble Prime Minister Shri Narendra Modi[4] authorized NHAI to monetize public funded NH projects which are operational and are generating toll revenues for at least two years after the Commercial Operations Date (COD) subject to approval of the Competent Authority in MoRTH/NHAI on case to case basis. Additionally, the Cabinet also approved the proposal[5] to authorize NHAI to set up Infrastructure Investment Trusts (InvITs) and monetize completed and operational NH projects.

NHAI monetizes assets through three modes – ToT, InvIT, and Securitization (Project based Financing through SPV). Under ToT and InvIT, operational assets with stable cashflow are offered to investors, freeing them from pre-construction and construction risks. The concessionaires are exposed to revenue risk and operations and maintenance obligations.

In each of these 3 modes, the allocation of risks across pre-construction, construction, financing, O&M, and revenue generation varies. Nuances of the variance in risk allocation in each of the 3 mechanisms have been captured in the below table:

Table 1: Risk Profile of Asset Monetization Modes

<table>
<tr><th>Mechanism</th><th>Pre-Construction Risk</th><th>Construction Risk</th><th>Financing Risk</th><th>O&M Risk</th><th>Revenue Risk</th></tr>
<tr><td>Toll-Operate-Transfer (ToT)</td><td rowspan="3">Authority (Cost of land acquisition and pre-construction is undertaken by the Authority)</td><td rowspan="2">Authority through different modes</td><td rowspan="2">Concessionaire</td><td>ToT Concessionaire (post DLP / concession period of EPC/HAM/ BOT Annuity concession)</td><td rowspan="2">Concessionaire</td></tr>
<tr><td>Infrastructure Investment Trust (InvIT)</td><td>InvIT SPV (post DLP / concession period of EPC/HAM/ BOT Annuity concession)</td></tr>
<tr><td>SPV</td><td>Authority (NHAI signs Implementation Agreement with SPV)</td><td>SPV (40% of HAM Civil Costs & 100% of EPC Civil Costs) & Authority (HAM Annuity)</td><td>Authority (Authority maintains the road on behalf of SPV)</td><td>Concessionaire[6]</td></tr>
</table>

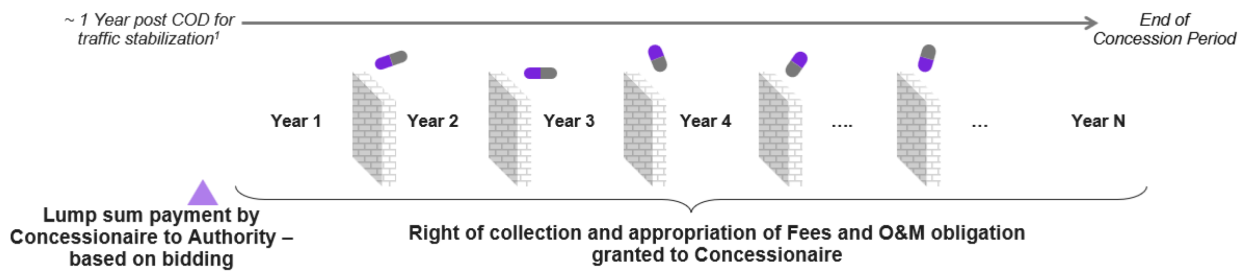
The philosophy of NHAI's asset monetization plan allows ToT, InvIT and SPV projects to complement each other and bring in a larger, more diverse investor pool. To understand in detail the workings of each of these 3 modes of asset monetization, a detailed overview has been provided in the subsequent section.

[4] vide Circular dated 3.08.2016 for proposal case no. 65/CCEA/2016
[5] Vide Circular dated 13.12.2019 for proposal case no. 346/39/2019
[6] In case of DME, Authority (Revenue accrues to NHAI, Debt guaranteed by NHAI)

1.1.1. Overview of Toll-Operate-Transfer Model

ToT Model is structured to attract private capital for management of completed assets, in exchange for toll collection rights. To gain these rights, the concessionaire needs to pay a lump sum amount to NHAI at the start of the concession and also undertake O&M obligations for the asset over the duration of the concession period.

Figure 2: Visual depiction of implementation of ToT model



ToT concessionaires are infrastructure players/investors with prior O&M experience in managing road infrastructure. ToT bundles are awarded to the bidder quoting the highest upfront concession fee to collect toll and maintain the roads over the life of the concession. Typically, the concession period of a ToT bundle has duration of 15 to 30 years. Presently, the concession period has been fixed at 20 years, after extensive market consultations. Through this mechanism, NHAI has raised Rs ~49,000 Cr till FY 24-25.

ToT benefits both NHAI and the concessionaire in the following manner:

1. Benefits to NHAI

A. Upfront Concession Fee provided as lump sum to NHAI, leading to quick infusion of capital to fund future development of NHs

B. Efficiency in O&M with private sector bringing best practices to enhance road user experience and safety

2. Benefits to the Concessionaire

A. No construction risk needs to be undertaken as assets are all completed, with relatively stable cash flows

B. Long concession life (15-30 years)[7] suitable to infrastructure investors / asset managers looking for long-term investment

C. Scope for synergizing operations as a single entity across multiple projects available, as ToT projects are bid together in joint bundles

Annexure-I provides details on the key features of players participating in ToT concessions along with key terms of concessions granted.

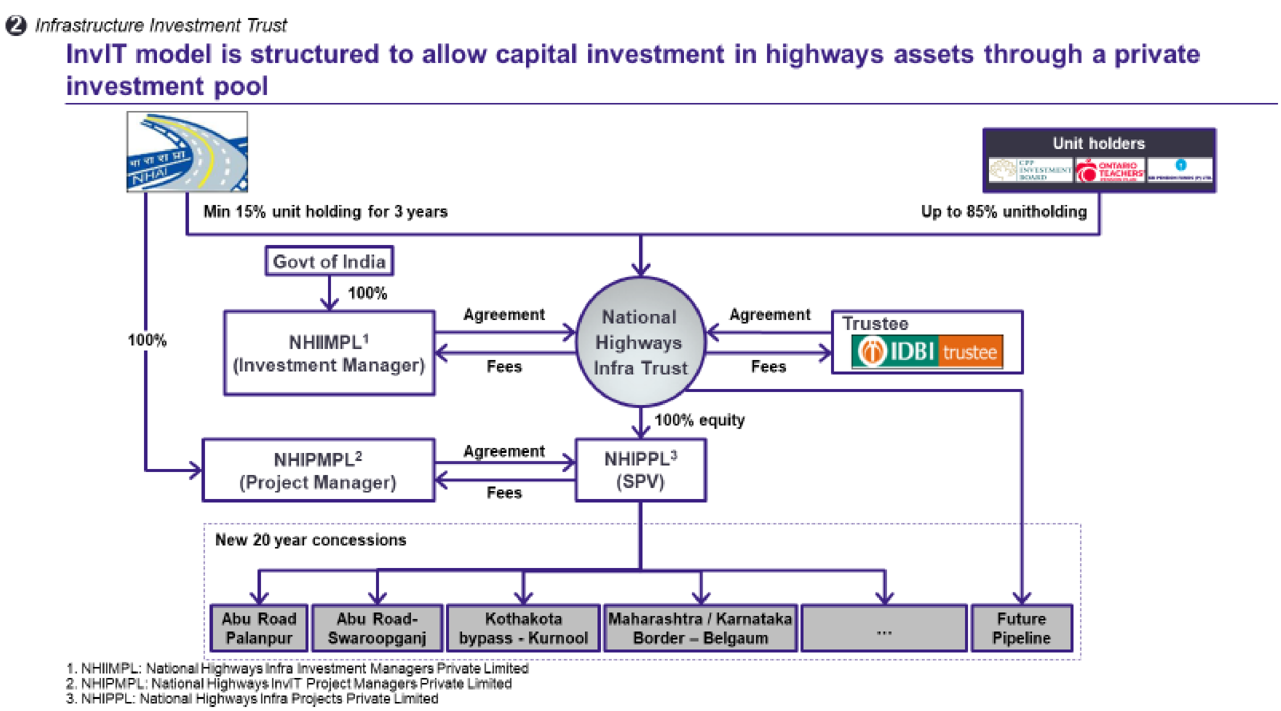
[7] As per Amendments in ToT Model Circular vide. 13th December 2019

1.1.2. Overview of Infrastructure Investment Trusts (InvIT)

An Infrastructure Investment Trust (InvIT) is a pooled investment vehicle that raises funds from investors by issuing units. Introduced in India in 2014, InvIT is an innovative financing mechanism that offers stable and predictable cash flows, low risk, liquidity, diversification, and tax benefits to investors. Infrastructure asset owners use InvITs to pool funds from a diverse set of investors, who receive cash flow generated by the assets periodically.[8] The InvITs are regulated by Securities and Exchange Board of India (SEBI), giving confidence to financial investors.

In an Infrastructure Investment Trust (InvIT) transaction, infrastructure asset owners transfer multiple revenue-generating asset Special Purpose Vehicles (SPVs) to a trust. The trust then issues units to investors to raise funds, which are subsequently invested in the development of infrastructure assets. To manage these assets and oversee operations, the Sponsor appoints an Investment Manager and a Project Manager. The Sponsor of the InvIT sets up the trust, which is responsible for supervising the activities of these appointed managers. The Investment Manager is responsible for managing the trust's assets and ensuring returns for unit holders, while the Project Manager oversees the operation and maintenance of the underlying road assets, held under the InvIT.

Figure 3: Visual depiction of InvIT model



[8] NITI Aayog (2021): National Monetization Pipeline- Volume 1: Monetization Guidebook: Vol. I

Bangalore Chennai Corridor

For management of InvIT, private sector professionals are engaged on contract basis to bring in market experience and private sector efficiencies. The InvIT is thus privately managed and led by an independent and competent Board of Directors, with corporate governance standards that match the Sponsor's (in this case, NHAI). Further, corporate governance practices have been incorporated into all aspects of asset monetization at NHAI (including the InvIT Trust), such as transparent business communication between multiple entities (e.g., NHAI, entities related to InvIT, private investors etc.) and periodic reporting/review/monitoring of performance for audit, risk management, and regulatory compliances. The Operations and Management (O&M) of the stretches on InvIT is done by the project manager (NHAI). Through this mechanism, NHAI has raised Rs ~43,000 Cr till FY 24-25.The roles of various stakeholders in InvIT are explained in Table 2.

The key stakeholders participating in NHAI's InvIT are captured in the table below:

Table 2: Stakeholders and their Responsibilities in InvIT Structure

Participant	Responsibility of Participant	Nature of Participant	Entity (in case of NHIT)
Sponsor(s)	— Sets up InvIT — Transfers initial and future assets to InvIT — Needs to hold minimum 15% units post issue for 3 years	— Can be Public / Private entity with a Rs. 100 Cr+ net worth and sound track record in infra development (e.g., NHAI)	— NHAI
Trust and Trustee	— Holds InvIT's assets for the benefit of unit holders — Oversees activities of Investment Manager and Project Manager	— Company with proven track record of providing trusteeship services	— NHIT (National Highways Infrastructure Trust) & IDBI Trustee Services
Investment Manager ("IM")	— Makes investment and financing related decisions — Responsible for compliance and governance — Signs an Investment Management Agreement with the Trustee and gets fee from Trust	— Company with Rs. 10 Cr+ net worth and at least 5 years of fund management or advisory experience	— NHIIMPL (National Highways Infra Investment Managers Private Limited)
Project Manager ("PMC")	— Operations and management of InvIT assets — Enters into Project Implementation & Management Agreement with Project SPV and gets fee from it	— Company, typically a subsidiary of the Sponsor, in case of NHAI	— NHIPMPL (National Highways InvIT Project Managers Private Limited)
Project SPV	— Holds assets of InvIT — InvIT can have multiple SPVs	— Typically formed by the Sponsor	— NHIPPL (National Highways Infra Projects Private Limited)

Annexure-II provides additional details on the key features of an InvIT phase.

Annexure-III also provides an overview of the key differences between the monetization modes of ToT and InvIT.

1.1.3. Overview of Securitization
(Project based Financing)

NHAI is authorized to raise long term finance from banks by securitizing user fee receipts from toll plazas as an alternate mode of asset monetization[9]. For large scale / high value highway projects, financing through formation of SPV can be done as a mode of asset monetization.

For construction of the 1,337 km Delhi-Mumbai Expressway, NHAI has formed a Special Purpose Vehicle (SPV) to securitize the corridor's future revenues and raise funds for its development. Through this mechanism, over Rs. 40,000 Cr. has been raised till date.

However, future SPVs will not be on lines of existing SPVs in view of the Government Guarantee Policy of 2022.

In summary, NHAI has raised Rs. ~1.4 Lakh Cr. through the above three modes till FY24-25, viz.:

i. 2,564 km of road assets monetized through ToT to raise Rs. 48,995Cr.

ii. 2,345 km of road assets monetized through InvIT to raise Rs. 43,638Cr.

iii. 1,337 km of DME (Delhi-Mumbai Expressway) SPV created, Rs. 46,847Cr.

Further details of NHAI's asset monetization achievements have been captured in **Annexure-IV.**

NHAI has achieved 71% of NITI Aayog's NMP Road Sector Pipeline from 21-22 to 24-25 (Rs. 1.15 Lakh Cr achieved out of target of Rs.1.60 Lakh Cr); However, total monetization till date is Rs. 1.4 Lakh Cr.

NHAI under MoRT&H has also identified a pipeline of assets that is plans on monetizing in the coming financial year. Details of the same have been captured in **Annexure-V.**

Delhi-Mumbai Expressway

[9] MoRT&H vide its circular dated 13.12.2019. NHAI Board in its 148th meeting held in July 2020 approved formation of similar SPVs for financing

Chapter

02

Chapter 02:
Objectives of Asset Monetization Strategy for NHAI

The goal of asset monetization is to maximize value for completed national highways and develop markets for public road assets.

The objective of this strategy document is to attain the goals of asset monetization of national highway assets in India and maximize outcomes from different modes of monetization in the future. Specifically, the objectives of this strategy document are to:

1. **Streamline Processes:** Strategy for simplification and standardization of processes involved in asset monetization, to ensure activities are conducted as per defined timelines in an efficient manner

2. **Enhance Transparency:** Strategy for development of measures to enhance transparency in all transactions and operations

3. **Mitigate Risks:** Identification of potential risks associated with asset monetization and develop strategies for risk mitigation

This document focuses particularly on the strategy for asset monetization through ToT and InvIT modes.

The strategy is formulated for medium term and would be revised after four years i.e. in FY 28-29. The strategy document will reflect the Government policies, market conditions with flexibility to cater to emergent circumstances.

To achieve the objectives of asset monetization, an asset monetization strategy for NHAI will focus on three pillars – value maximation, transparency, and market development. These pillars are discussed in the subsequent section.

Delhi-Meerut Expressway

Chapter

03

Chapter 03:
Asset Monetization Strategy for NHAI

The asset monetization strategy for NHAI is based on three pillars, viz.:

1. Value Maximation

A. The objective of this pillar is to codify and structure processes to systematically identify and offer attractive assets for monetization, so as to increase acceptance of bids that maximize value for the government. The philosophy of this pillar is driven by objective of ensuring value of public assets is maximized.

B. Value maximization is achieved through:

i. **Structured Identification of Appropriate Projects and Preparation of an Asset Register:** Guiding principles for systematic identification and preparation of an asset register, with list of assets with attractive monetization potential

ii. **Technical and Traffic Evaluation of Asset:** Guiding principles for assessing asset's technical quality and revenue potential (based on traffic)

iii. **Fair Asset Valuation:** Guiding principles for parameters used in fair monetary valuation of monetizable assets

iv. **Asset Categorization:** Guiding principles for categorization of assets to enable bundling and offering to investors

v. **Identification of Asset Bundles:** Guiding principles for identifying bundles of eligible assets that can be monetized together

vi. **Execution of Monetization Process:** Guiding principles for determining which monetization mode would be most appropriate for a given bundle and executing the process in a timely manner

vii. **Timing of Operations:** Guiding principles for frequency of issuing bundles for investment in the market in a given year, with consideration g**iven to prevailing market conditions**

2. Transparency

A. Transparency is a critical element in the successful implementation of any asset monetization strategy. The objective of this pillar is to codify processes that aid transparency both within the organization and in communications with investors

B. Transparency is achieved through

i. **Standardization and Dissemination of Processes and Documents:** Guidelines for standardization of processes and technical documents across the value chain, including both pre- and post-bidding stages

ii. **Public Dissemination of Relevant Investor Information:** Dissemination of relevant information for investors on public platforms, including projects forming part of NHAI's future monetization pipeline and macroeconomic factors / assumptions uses for estimating future toll revenues of different monetization bundles

3. Market Development

A. The objective of this pillar is two-fold:

i. Broaden the investor base to attract more private participation

ii. Enhance stakeholder engagement to increase traction of NHAI's asset monetization program

3.1. Value Maximization

This sub-section focuses on the codification of processes that are being used by NHAI to sustain its systematic approach towards identification and valuation of assets for monetization to achieve value maximization.

3.1.1. Identification of monetizable assets and preparation of an asset register

An asset register will be created which will include a list of highway assets that will be attractive to road infrastructure players and private investors looking to participate in NHAI's asset monetization program. The asset register will include all technical and financial details needed to determine the monetization potential of the asset. To identify projects and prepare the asset register from the universe of highways under NHAI, specific criteria have been defined to filter out attractive assets. These criteria include:

1. **Age of the Asset:** the completed asset should be already operational for at least 1 year, to enable an assessment of its operational and financial history

2. **Nature of the Stretch:** the asset should be complete with no requirement for enhancement works in the near future. In case some maintenance or small construction is required on the stretch at the time of monetization, same should be effectively reflected in its valuation

3. **Revenue:** the completed asset should have significant toll revenue so as to sustain positive cashflows and provide sufficient returns to the concessionaire. Currently, the assets with more than ~Rs. 0.8 Cr./ km per year toll revenue are being considered for monetization.

4. **Historic Revenue Growth:** the asset should be supported by steady revenue growth from start of commercial operations to give confidence to concessionaires of the asset's bankability. Either very high or very low growth rates may serve as an indicator that traffic within the corridor has not yet reached a state of stabilization. This lack of stabilization could potentially introduce unpredictability and risk into the monetization process. Given these considerations, it may be prudent to defer the monetization of the corridor until a more stable pattern of traffic growth has been established.

In addition to the above criteria, the asset shall also be examined for the following additional criteria, viz.:

- **No. of Toll Plazas in the Project:** the asset should be assessed for the number of toll plazas that lie on it. Cost of operations of the asset is also driven by the number of toll plazas that need to be managed and hence would be an important consideration for potential bidders while assessing the attractiveness of the asset

- **Legal compliance:** The asset should be in full compliance with applicable regulatory requirements as per NHAI and Govt. of India and be free of encumbrances, disputes, arbitrations, or any other legal liabilities. Existing IT infrastructure (Data Lake etc.) is to be utilized to keep records of projects with legal issues to make the asset selection process efficient.

3.1.2. Technical and traffic evaluation of the asset

A 360-degree evaluation of the asset will be done using field investigations to determine the existing quality of the asset, its capacity augmentation requirements (if any), and its revenue potential (with respect to traffic).

To undertake the technical evaluation, field investigations will be done through multiple tools and methodologies, including drone videography, mobile LIDAR surveys, axle load surveys, and network survey vehicles (NSV). Such field investigations will also leverage spatial planning platforms such as the PM Gati Shakti National Master Plan portal for comprehensive evaluation of the asset. Through this technical assessment of the asset, it will thus be determined if any investment is needed by NHAI in its upkeep and maintenance. If a substantial investment is required for initial improvement work, NHAI will itself undertake the improvements needed on the asset, as it is better positioned to execute works at more economical costs given its economies of scale and operational efficiencies.

Additionally, for revenue potential assessment of the asset, a traffic volume count survey will also be done on the asset to determine its traffic volumes, which will in turn feed into the calculation of the project's Initial Estimated Concession Value (IECV).

By undertaking such a technical and traffic evaluation on the asset prior to the launch of the bundle, the monetization value of the asset will be maximized. Additionally, it will also ensure that all issues that may impact monetization value of the asset are highlighted and addressed well in advance.

NHAI will leverage its Asset Monetization Cell comprising internal/external experts who will conduct an in-depth traffic and technical assessment as part of an asset's technical evaluation. The Asset Monetization Cell would provide techno commercial perspective of things and keep an industry point of view and international best practices in consideration.

3.1.3. Transaction valuation of ToT bundles / InvIT phases

The highways developed by NHAI are public assets and it is absolutely vital to ensure that the value received by NHAI from concessionaires in exchange for the asset's toll collection rights is maximized to ensure public interest. For this, the reserve price of the assets needs to be determined fairly and it should be ensured that the awarded amount of each monetized bundle (monetized either through ToT or InvIT) is mandatorily greater than the bundle's reserve price, i.e., IECV (Initial Estimated Concession Value). Fair valuation of the assets is to be ensured, considering risks to revenue and costs associated with the assets.

To ensure that the IECV valuation is robust so as to provide fair valuation to NHAI, CCEA mandated practice will be followed, using Free Cash Flow to Firm (FCFF) method. Following is the framework for using the Free Cash Flow to Firm (FCFF) method for calculating the Initial **Estimated Concession Value (IECV):**

1. **Calculating Free Cash Flow to Firm (FCFF):** Following components to be considered for determining FCFF:

   A. Operating Cashflow: Cashflows generated through toll collections and operating expenses for toll collection, security services and routine operation.

   B. Capital expenditure: Expenditure on routine and major maintenance and repair during contract period

2. **Determining Discount Rate:** The discount rate should reflect the risk associated with the road infrastructure asset and may incorporate factors such as the asset's volatility, market conditions, and cost of capital, based on the following:

   A. Equity / Project Return expectations - Benchmarking of market return expectations on Equity and Project Cash Flows for similar assets / projects and market interactions

   B. Financing Costs - assessing various financing options (term loans, bond issues, etc.) and market rates for the same.

3. **Calculating IECV:** The present value of FCFF is discounted at the rate determined in the previous step

Additionally, following factors are to be considered to carefully evaluate the IECV:

1. **Risk Factors:** Considering the risks associated with the road asset, such as traffic volatility, competitive pressures, regulatory risks, and force majeure events, valuation can be adjusted accordingly.

   A. **Traffic Volatility:** Variation of historical traffic volumes

   B. **Competition Metrics:** number of alternative routes, and competitive pricing comparisons

   C. **Force Majeure Probability:** Probability of occurrence of force majeure events based on historical data or risk models

2. **Market Conditions:** Market conditions can influence the perceived value of the road asset and the lump sum

   A. **Interest Rate:** Current prevailing interest rates in the market

   B. **Economic Indicators:** GDP growth rate and inflation rate

   C. **Investor Sentiment: Investor surveys or sentiment indices relevant to infrastructure investments**

3. **Regulatory Environment:** Potential changes in regulations or policies that could affect toll rates or operating conditions

   A. **Tolling Regulations:** Overview of existing tolling regulations and any proposed changes

   B. **Policy Stability:** Historical stability of tolling policies and any recent regulatory changes

4. **Upcoming Facilities and Industrial Nodes:** Assessment of traffic growth potential due to new industrial/ logistics hubs, commercial centres and infrastructure projects

Recognizing the pivotal role of the Initial Estimated Concession Value (IECV) in the success of asset monetization, it is imperative that the determination of IECV undergoes a thorough review periodically by a dedicated committee to ensure robustness of the process. The IECV Committee will comprise the following members:

- Additional Secretary & Financial Advisor (AS & FA), MoRT&H
- Member Finance, NHAI
- Member NHAI, as representative of the Chairman
- Member in charge of the State in which project is situated

To ensure fairness, IECV determination would be done after financial bids have been submitted and before the bids are opened by a dedicated Committee that will review the IECV determination process on a periodic basis, with the same process of scrutiny followed for both ToT & InvIT bundles.

Lastly, in the spirit of transparent evaluation, it is imperative that all technical, traffic, and financial due diligences conducted on the asset be done in a robust and timely manner

Table 3: Principles for categorization of assets

Category	Description
Highly Attractive	— Assets with high revenue per km and strong growth — Top revenue-earning assets, highly attractive for investment
Moderately Attractive	— Assets with decent revenue per km and steady growth — Reliable and positively contributing assets making them moderately attractive
Potentially Attractive	— Assets with lower current revenue per km but high growth potential — Can become more attractive with appropriate interventions
Assets with Low Revenue per km	— Assets with low revenue per km and have minimal growth

3.1.4. Categorization of assets

Once technical evaluation and traffic estimation of individual assets has been determined, assets will be categorized into various classes based on toll revenue per km and toll revenue growth rate. These classes will help creating balanced bundles of assets, which is detailed in the subsequent section.

Assets under the first three categories are to be considered for the next step i.e., bundling of the assets.

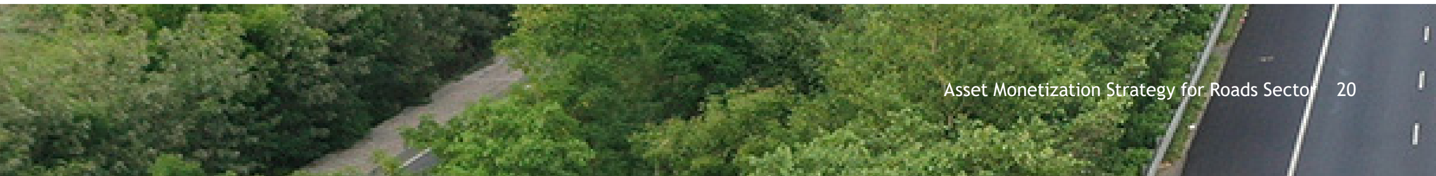
3.1.5. Identification of monetizable bundles

Once eligible assets have been shortlisted, they will be pooled together to create bundles that are of sizeable value and attractive to potential investors. The following considerations will be made while identifying asset bundles:

1. **Balanced Bundles:** Assets with varying revenue per km and revenue growth will be combined into bundles so as to balance immediate returns with future growth potential, making the bundles both more attractive and less risky for investment

2. **Geographic Synergies:** Assets in a given bundle will be preferably co-located, to leverage locational advantages. Further, concessionaires would also prefer to bid for assets that are in geographically favourable regions (such as regions with economic corridors). Geographic mapping of assets within each bundle is to be done keeping these two factors in mind. Conversely, concessionaires may alternatively prefer to have the assets of their bundle located in different parts of the country, so as to derisk and diversify their portfolios.

3. **Size of the Bundles:** The success of asset monetization hinges on strategic bundling of assets that align with the preferences and investment goals of the investor segment. Investors, ranging from institutional to retail, each have unique risk-return profiles, investment horizons, and capital availability. Therefore, the size of asset bundles will be tailored to meet these diverse needs. The current ToT bundles for which bids have been invited by NHAI are of varying sizes, to be able to cater to a diverse profile of investors.



3.1.6. Execution of monetization process

Assets offered under ToT vis-à-vis InvIT are generally non-competitive, and complementary to each other to ensure the best outcome of monetization. Once bundles have been identified, risk-return profiling of the bundles will be done to identify the suitable mode of monetization of the bundle. The risk and reward mechanism will be balanced to ensure that it is interest of both the Authority and the private players.

NHAI will also engage with stakeholders periodically to assess investor profiles (be they financial investors, road developers, or toll operators) and their risk appetite.

3.1.7. Timing and frequency of operations

Once bundles of adequate size and attractiveness are identified, they will be issued for bidding in the investor market. The bundles will be issued on an annual basis by NHAI, depending on prevailing market conditions. Risk associated with increased frequency of ToT bundles/ InvIT phases such as market capacity and due diligence constraints will also be assessed prior to launch of ToT bundles / InvIT phases. Timelines of the process along with all necessary information will be provided at bidding stage to ensure timely completion of the entire process without many extensions of bid due date.

3.2. Transparency

This sub-section focuses on the identification of initiatives that will help increase transparency of asset monetization-related activities at NHAI.

3.2.1. Principles for standardization and dissemination of processes and technical documents

NHAI will continue working towards standardizing and sharing processes and documents to achieve transparency and streamline operations across the monetization value chain. This will include:

1. **Standardization of Processes**: Implementation of standardized processes (both pre and post bidding) across the monetization value chain so as to streamline operations and ensure consistency and clarity across all transactions. This approach will simplify the process for investors and reduce administrative overheads and potential ambiguities arising from disparate operational practices

2. **Standardization and Dissemination of Technical Documents:** Development and implementation of standardized templates for all bidding and contractual documents will be done by NHAI in the future. Such documentation will include technical documents such as project reports, feasibility studies, cost estimates, and environmental impact assessments. Consistent documentation will ensure that all stakeholders have a clear and uniform understanding of the terms and conditions governing asset monetization projects, thereby streamlining the overall process. It will be ensured that information shared with stakeholders is accurate, complete, and reliable and that timelines for information sharing are adhered to. All relevant stakeholders, including investors, will have access to these documents to ensure transparency in the monetization process.


Samruddhi Mahamarg (Mumbai-Nagpur Expressway)

3.2.2. Principles for public dissemination of relevant investor information

A critical aspect of transparency involves the dissemination of information to investors to improve investor confidence and participation and ultimately drive successful monetization of India's national highway assets. The dedicated Asset Monetization Cell that NHAI has set up will be used as the information backbone for NHAI for managing the dissemination of information, including:

1. **Public Disclosure of Future Monetization Pipeline:** To allow potential investors to plan for upcoming monetization opportunities in a structured manner, roll-out of asset bundles will be fixed in the financial year with a periodic cadence. Additionally, at time of the periodic roll-out, public disclosure of the future monetization pipeline for the upcoming period (generally on annual basis) will be done to facilitate better planning and preparation among investors. The fixed cadence of the bundle roll-out will also be communicated to investors so that they can plan their competitive bidding process in a structured manner. To ensure greater transparency, NHAI will strive to disseminate the assets on offer to ToT & InvIT separately.

2. **Dissemination of assumptions for IECV estimation:** There is a possibility that disclosure of the IECV itself will result in a concentration of bids around the IECV value. To obviate such eventualities, the IECV will not be disclosed. However, to ensure orderly bidding and transparency, the assumptions used for estimation of IECV will be shared with potential investors on public platforms (e.g., NHAI website). Investors need confidence in the accuracy and reliability of revenue projections and sharing this information will aid in the same. Further, providing this information will help investors make informed decisions, by offering a realistic basis for revenue estimation. By aligning investor expectations with the potential performance of the asset, NHAI will aim to minimize risks and enhance the attractiveness of the investment opportunity through monetization. Currently, NHAI declares macroeconomic factors such as interest rate, inflation, traffic, and revenue growth rate, operating and maintenance expenditure etc. NHAI will regularly review and update these factors to assist potential investors in preparing more realistic estimations.

3.2.3. Principles for monitoring and performance evaluation

In addition to the above measures, continuous monitoring and performance evaluation of monetization activities will be undertaken by NHAI to support transparent processes, including:

1. **Establishing Key Performance Indicators (KPIs):** Specific KPIs will be defined to measure the performance of the monetized assets, such as revenue generated, operational efficiency, compliance with contractual obligations.

2. **Regular Reporting and Review:** A system will be implemented for regular reporting and review of asset performance against established KPIs, involving preparation of comprehensive reports to track progress over time. Relevant information pertaining to performance will be shared in public domain as well.

3. **Risk Monitoring and Mitigation:** Changes in market conditions, regulatory developments, or operational disruptions will be monitored for potential risks and challenges that may impact asset performance.

4. **Feedback Mechanisms:** Inputs from investors will be gathered through investor engagement, pre-bid meetings and market studies.

3.3. Market Development

This sub-section focuses on the identification of initiatives that will help deepen and broaden the investor base of participants in ToT/InvIT projects and enhance stakeholder engagement so that there is more private participation and traction in NHAI's asset monetization program. This sub-section also focuses on identification of new mechanisms of monetization that NHAI can potentially adopt to increase the pool of funds financing future road development through asset monetization.

3.3.1. Initiatives to support investor base expansion

To reach a deeper and wider set of investors and enhance stakeholder engagement, NHAI has created a policy and regulatory ecosystem that is friendly to private investment. This includes the below initiatives:

1. **Launching Public InvITs:** NHAI has successfully launched private InvIT and monetized over 2,300 km of highways. NHAI is now considering launching public InvIT to increase the overall investor base, develop a competitive environment in InvIT market, and mitigate the risk of limited investor base. Further, public InvIT will also cater to retail investors thereby providing access to infrastructure assets.

2. **Offering Multiple Bundle Sizes:** NHAI already has initiatives underway to increase the number and volume of ToT bundles and InvIT phases. Specifically, NHAI aims to offer three ToT bundles per quarter, including one smaller (~Rs. 2,000 Cr.), one medium (~Rs. 5,000 Cr.), and one large (~Rs. 9,000 Cr.) bundle, and to conduct one/two InvIT phases each year to cater to a broad spectrum of investors. NHAI will also assess the market conditions in future and adjust the bundles size accordingly.

3. **Improving Risk-Reward Mechanism for Concessionaires:** To make investment in road assets more attractive for private investors, NHAI has ensured that risk borne by concessionaires is capped. For instance, as per the model concession agreement for ToT, concessionaires are only expected to absorb risk of traffic variation up till 5%, beyond which the agreement provides for an extension / reduction of their concession period in proportion to the traffic variance.

4. **High Quality Institutional Investment:** To attract high quality institutional investors and investors with expertise in infrastructure management, NHAI will develop targeted outreach programs across geographic locations and investor profiles.

5. **Periodic review of existing policies:** NHAI will regularly engage with investors to understand investors' concerns and revise MCA/ bidding process as required

3.3.2. Initiatives to enhance stakeholder engagement

To leave a larger impact and enhance stakeholder engagement, NHAI will expand on its efforts with the below initiatives:

1. **Develop impactful 'value proposition':** Definition of compelling communication material that underlines the socio-economic benefits of investing in road infrastructure, such as job creation, economic growth, and improved connectivity

2. **Expand outreach base:** Increase of participation in industry-related events, like conferences, roadshows, and seminars, both within India and internationally, to present business opportunities in ToT/InvIT projects, network with potential investors, and address stakeholder queries

3. **Collaborate with financial intermediaries:** Partnering with entities like investment banks and financial advisors to extend investor outreach, facilitate investment structuring, and gain market insights

Bengaluru Satelite town Road (Dobaspate to Hoskote)

Chapter

04

Chapter 04:
Conclusion

The Asset Monetization Strategy for the Roads Sector, as outlined in this document, represents a pivotal step towards sustainable infrastructure development in India. By leveraging innovative models such as Toll-Operate-Transfer (ToT) and Infrastructure Investment Trusts (InvIT), NHAI aims to unlock the economic value of existing road assets, attract private sector investment, and ensure the financial sustainability of future highway projects. All the available modes for monetization are complementary and competitive. Reliance on one mode alone would give sub-optimal results for monetization activity.

The strategy emphasizes three core pillars: value maximization, transparency, and market development. Through structured identification and valuation of assets, NHAI will ensure that public assets are monetized at their highest potential value. This approach will not only maximize financial returns but also optimize the operational efficiency and longevity of the assets. The commitment to transparency will foster investor confidence and encourage broader participation in the monetization process. By standardizing processes and disseminating relevant information, NHAI will create a conducive environment for investors, ensuring that all transactions are conducted with the highest level of integrity and openness.

Additionally, initiatives to expand the investor base and enhance stakeholder engagement will be crucial for the long-term success of the asset monetization program. By broadening the pool of potential investors and actively engaging with stakeholders, NHAI will attract diverse investment profiles, ranging from institutional investors to retail participants. This inclusive approach will not only diversify the sources of capital but also mitigate risks associated with market fluctuations and investor sentiment.

The successful implementation of this strategy will provide NHAI with a steady stream of revenue, reducing reliance on traditional funding sources such as government allocations and external debt. This financial independence will enable NHAI to undertake more ambitious infrastructure projects, accelerating the pace of highway development across the country. Private sector participation will bring in advanced technologies and management practices, enhancing the quality and longevity of road assets. The infusion of private capital and expertise will also lead to better-maintained highways, improved safety standards, and enhanced user experiences.

In conclusion, the Asset Monetization Strategy is not just a financial tool but a transformative approach that aligns with the broader goals of economic growth and sustainable development. By unlocking the value of existing assets and reinvesting in new projects, NHAI is paving the way for a robust and resilient road infrastructure network that will support India’s growth for years to come. This strategy embodies a forward-thinking vision, where public and private sectors collaborate to create a dynamic and efficient infrastructure ecosystem. The benefits of this approach extend beyond financial gains, contributing to the overall socio-economic development of the nation and ensuring that India’s road infrastructure remains a cornerstone of its progress and prosperity.

Dwarka Expressway

Annexure-I: Key Features of ToT Players and Concession Terms

ToT concessionaires are typically infrastructure players/investors with prior O&M experience in managing road infrastructure. The typical profile and selection of bidders participating in ToT concessions has been provided below:

Key Features		Description
Player Profile		Players across road infrastructure value chain, including: — Road infrastructure investment companies (e.g., Cube Mobility) — Road construction players (e.g., IRB Infrastructure) — Multi-sector conglomerates (e.g., Adani) — Sovereign funds / asset managers (e.g., NIIF)
Bidding Requirements		Single entity bidder / Consortium of bidders allowed — Bidder forms an SPV after award of the ToT agreement - this **SPV pays the upfront amount** to NHAI and **manages the ToT concession** on behalf of the bidder
Selection Criteria	**Financial**	Players bidding for a given ToT bundle should be able to fulfil either of the below criteria: — Bidder's net worth at close of previous financial year should be at least **Rs. 5 Cr. per km** of the proposed ToT bundle — Bidder's assets under management[10] should be at least **Rs. 50 Cr. per km** of the proposed bundle
	Technical	Bidders should have the ability to manage the monetized asset as per NHAI standards by fulfilling either of the below criteria: — Bidder should have **incurred minimum O&M expenditure** of **40% of threshold O&M capacity**[11] of the proposed ToT bundle over past 5 years — Bidder can sub-contract O&M works to a third party, provided that the sub-contractor has managed **O&M for at least 2 road projects**, each having at least **10% length** of the proposed ToT bundle

[10] AUM: Market value of the assets managed by the bidder

[11] NPV of O&M cost of the bundle over a 5-year block (so that it includes first major maintenance of each stretch), discounted at Bank Rate + 3%

ToT concessions are typically of 20-year duration, with the bundle awarded to the bidder quoting the highest upfront concession fee. Key terms of the concession have also been provided below:

Key Features	Description
Bid Parameter	— Highest upfront concession fee -Bid Concession Fee — NHAI does not award if bid amount is less than IECV[12] — IECV - sum of net cashflows of asset over concession – calculated by the financial consultant before bid
Concession Period	— 15 to 30 years (NHAI authorized to vary concession period on case-to-case basis, typically 20 years) — As per 2020[13] circular, NHAI has been permitted to keep duration flexible, depending on market dynamics
Exit Period	— Minimum of 2 years post start of concession period — Technical and Financial criteria appliable for substituted concessionaire
Capacity Augmentation	— Capacity augmentation to be done on EPC mode, with concessionaire having right of first refusal to undertake the contract (i.e., concessionaire allowed to match L1 bid for EPC contract, subject to bid being within 10% of L1) — Concessionaire compensated for reduction in toll rates during augmentation period[14]
O&M Risk	— O&M managed by concessionaire or sub-contracted to 3rd party — For tolling operations, concessionaire is permitted to appoint an independent tolling contractor

Revenue Risk	— Concessionaire given full tolling rights during concession period
	  — Toll rates determined as per 2008 schedule of rates for different vehicle classes, escalated at 3% + 40% of WPI[15]
	  — Concessionaire compensated if toll collections is at significant variance to revenues estimated in concession agreement
	  — Check for variance is done twice over the concession duration, as per existing clause of MCA

[12] Initial estimated concession value
[13] As per OM vide. 22nd September 2020
[14] Formula to calculate compensation is A * (B – C), where A = Traffic, B = Toll Rate based on existing tollable length, C = Revised toll rate based on revised tollable length
[15] As per The National Highways Fee (Determination of Rates & Collection) Rules, 2008

Annexure-II: Key Features of an InvIT

InvIT investors are typically QIBs/strategic financial investors with a minimum investment of Rs. 1 Cr. The typical features of an InvIT phase have been provided below:

Area	Key Features of InvIT Phase
Nature of Unit Holders	— **Qualified Institutional Buyers** such as mutual / pension / insurance funds — **Strategic investors** such as NBFCs, scheduled commercial banks, and international multilateral financial institutions — Approval of proposal to roll out NHAI InvIT to retail investors underway with SEBI
Share of Unit Holders	— Sponsor: 25% of the total Units to be issued — Anchor Investors (QIBs): up to 60% of the total Units (cap of 25% per investor) — Strategic Investors: at least 5% and up to 25% of the total Units (cap of 25% per investor)
Unit Holder Selection Criteria	— No technical/financial criteria for selection of investors / unit holder (as long as the minimum subscription amount and share in total units is fulfilled)
Volume and Valuation of Units	— Number and value of units to be issued is determined by the Investment Manager through a book building process, in consultation with Merchant Bankers — In case of launch of new phase, process is similar to dilutive FPO with preferential allotment, i.e., existing investor need to buy more units to keep their equity share constant
Lock-in Period	— Minimum of 1 year from date of listing of units allotted through private placement
SPVs	— Can have multiple SPVs to run projects — Only one SPV formed so far in case of NHIT (multiple SPVs lead to multiple regulatory obligations)
Minimum Subscription Amount	— Minimum investment from any investor of Rs. 1 Cr., for purchase of units
Investor's Income	— Dividend, interest, and loan repayment from SPV
Taxation	— Dividend and interest income taxed as per investor's slab rate — Repayment of the Principal on loans by SPVs exempted until cumulative amount exceeds issue price

Annexure-III: Key differences between ToT and InvIT

While ToT allows greater control in business operations, it is better suited as a mechanism catering to core infra value chain players who are looking to completely control the asset. InvIT on the other hand is better suited to financial investors looking for diverse investment avenues.

The table below captures the key differences between ToT and InvIT:

Metric	ToT	InvIT
Nature of Projects	— Completed projects with significant tolling history and adequate remaining design life to serve traffic	
Bidder / Investor Profile	— Road infrastructure value chain players	— Institutional financial investors
Nature of Mechanism	— PPP operational + financing model for completed road assets of NHAI	— Financial investment instrument regulated by SEBI
Nature of Agreement with NHAI	— ToT agreement of bidder/consortium with NHAI	— ToT agreement of SPV (InvIT subsidiary) with NHAI
Revenue Model	— Toll collections through operation of the asset	— Dividend, interest on loan (paid from SPV to InvIT to unit holders)
Investment Horizon	— Ranges from 15 to 30 years, depending on the asset's concession duration	— Long-term investment - can be greater than the ToT concession duration as investors are investing in the trust and not the asset
Exit Options	— 2 years post start of concession	— 1 year from the date of listing of units
Liquidity	— Less liquid as compared to InvIT, as ownership rights are tied to the concession period and exit options can only be availed 2 years into the concession	— Units can be sold to other investors, providing them with liquidity options through secondary market trading
Control in Operation	— High control over toll operations and collection process	— Little to no control over toll operations and collection process

Annexure-IV: Performance of Asset Monetization at NHAI

NHAI has successfully awarded 11 ToT bundles and 3 phases of InvIT bundles for a combined Rs. ~75,000 Cr. from 17-18 till date.

The table below captures ToT bundle-wise details of length and concession fee awarded:

Section	Length (km)	Awarded Value (Rs. Cr.)	Year of Concession Fee Realization	Concession Period (years)	Winning Bidder
ToT 1	681	9,682	FY 2018-19	30	Macquarie-Ashoka
ToT 3	566	5,011	FY 2020-21	30	Cube Highways and Infrastructure Ltd
ToT 5 (A-1)	54	1,011	FY 2021-22	20	Adani-Skylark
ToT 5 (A-2)	106	1,251	FY 2022-23	20	D. P. Jain
ToT 7	135	6,267	FY 2022-23	20	CDPQ, IIFL Trust
ToT 9	73	3,144	FY 2022-23	20	NIIF
ToT 11	84	2,156	FY 2023-24	20	Cube Highways and Infrastructure Ltd
ToT 12	316	4,428	FY 2023-24	20	IRB Infrastructure Trust
ToT 13	108	1,683	FY 2023-24	20	IRB Infrastructure Trust
ToT 14	189	7,701	FY 2023-24	20	Cube Highways and Infrastructure Ltd
ToT 16	252	6,661	FY 2024-25	20	Highway Infrastructure Trust
Sub-Total - Awarded	**2,564**	**48,995**	-	-	-
ToT 15	125	Yet to be awarded	FY 2025-26	20	-
Sub-Total (Bid Out)	**125**	-	-	-	-
Total	**2,689**	**49,005**	-	-	-

The table below captures the 'Multiple of Concession Fee over First Year Revenue', i.e., the concession fee quoted by each bidder as a multiple of First Year Revenue from that ToT bundle as projected by NHAI, for ToT Bundles 1 to 10:

Bids Received	Bundle 1	Bundle 2	Bundle 3	Bundle 5A1	Bundle 5A2	Bundle 6	Bundle 7	Bundle 8	Bundle 9	Bundle 10
Concession Period	30	30	30	20	20	20	20	20	15	15
Highest Bidder	18.86	9.11	11.74	10.25	10.34	7.33	14.36	7.18	11.86	6.87

Observations:

- It may be noted that each awarded bundle had an H1 bid with a multiple over first year revenue of over 10. It may be noted that all bids received for TOT Bundle 2 were below IECV and the bid was annulled. Subsequently, two of the three bids received for TOT Bundle 3 were below IECV.
- NHAI stopped declaring IECV after TOT Bundle 3.
- Post TOT Bundle 3, NHAI decided to go for relatively smaller bundle sizes, and has witnessed higher participation in bidding.

The table below captures InvIT phase-wise details of length and concession fee awarded:

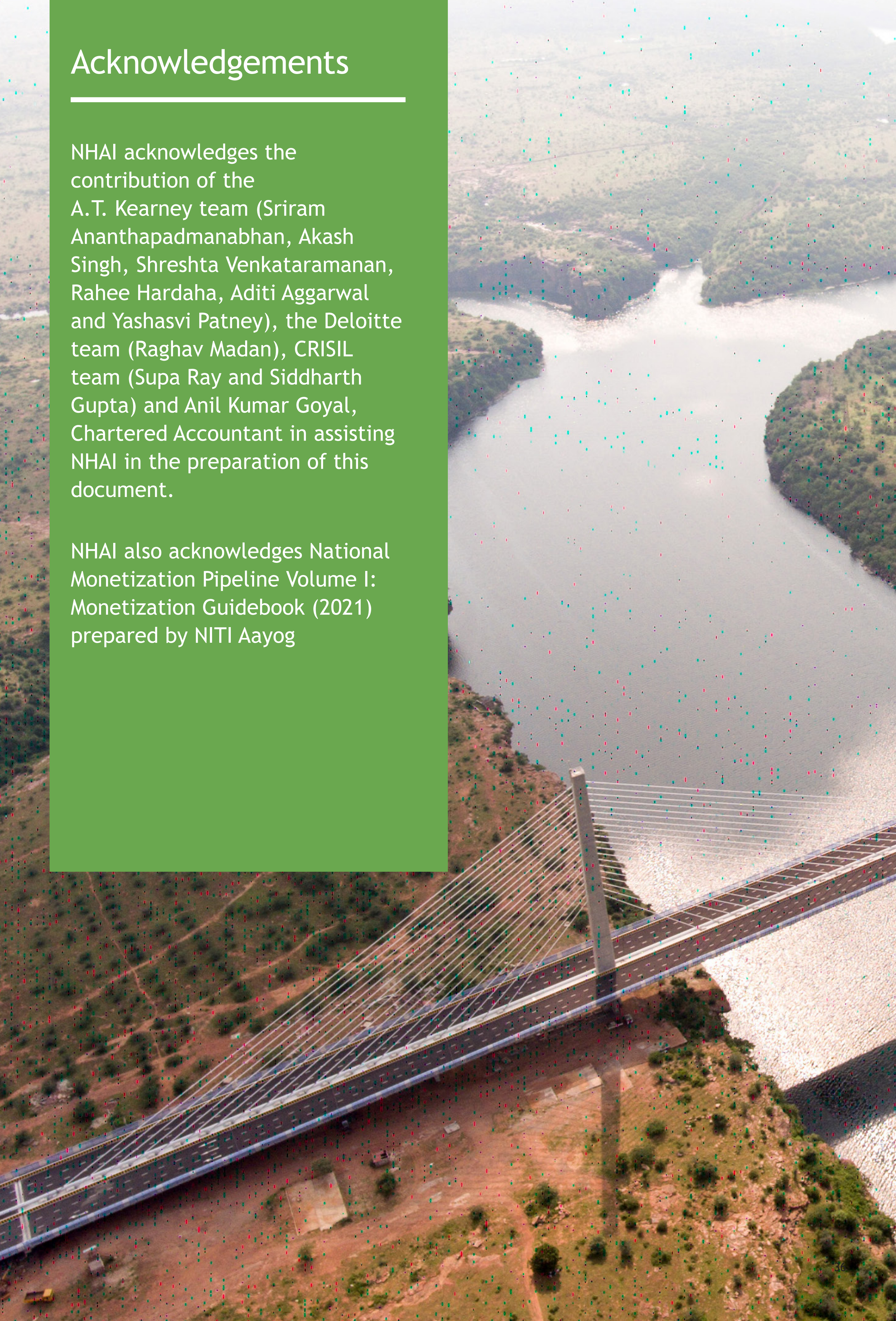
Section	Length (km)	Awarded Value (Rs. Cr.)	Year of Concession Fee Realization	Concession Period (years)	Key Investors
InvIT Phase 1	389	7,350	FY 2021-22	30	100+ investors, with anchor investors as Canada Pension Plan Investment Board and Ontario Teachers' Pension Plan Board
InvIT Phase 2	247	2,850	FY 2022-23	20	
InvIT Phase 3	890	15,700	FY 2023-24	20	
InvIT Phase 4	821	17,738	FY 2024-25	20	
Total	**2,345**	**43,638**	-	-	

Annexure-V: Future Pipeline of Asset for Monetization at NHAI- An Example

The below list published by NHAI may be considered as a model for dissemination of assets that NHAI plans to monetize in FY 2025-26 through various modes of monetization.

S.No	Section	State	Length (km)
1	Muzaffarpur-Darbhanga-Purnia (OMT)	Bihar	288
2	Purnea-Dalkhola (Bihar)	Bihar	36
Bihar Total			**324**
3	Bilaspur to Pathrapalli	Chhattisgarh	53
Chattisgarh Total			**53**
4	6L of Gurgaon Sohna Pkg-II from existing Km 11.682 to existing Km 24.40	Haryana	86
Haryana Total			**86**
5	Pipli Bhavnagar-Package 1 from km 136.025 to km 169.328	Gujarat	33
Gujarat Total			**33**
6	Balance work of Ranchi-Mahulia Section of NH-33 from Km 217.300 (Chowka) to Km 233.350 (Saharbeda) (pkg-III)	Jharkhand	16
7	Balance work of Ranchi-Mahulia Section of NH-33 from Km 233.350 (Saharbeda) to Km 277.568 (Mahulia) (Package -IV)	Jharkhand	44
8	Gorhar - Barwa Adda	Jharkhand	79
9	Ranchi-Rargaon Section	Jharkhand	77
Jharkhand Total			**216**
10	Gabbur - Devgiri	Karnataka	64
Karnataka Total			**64**
11	Kalamassery-ICTT Vallarpadam (Kerala)	Kerala	17

S.No	Section	State	Length (km)
Kerala Total			**17**
12	4L of Chikhli - Tarsod section of NH-6 from km 360.00 - km 422.700	Maharashtra	65
13	Aurangabad - Karodi km 290.00 - km 320.104 of NH 211 (New NH 52)	Maharashtra	30
14	Four Laning of Sangli - Solapur (Pkg I) [Sangli - Boragaon km 182.556 - km 224.00]	Maharashtra	41
15	Karodi-Telwadi	Maharashtra	56
16	Wardha – Butibori (Maharashtra)	Maharashtra	59
Maharashtra Total			**252**
17	Sunakhala - Bhubaneshwar	Odisha	77
Odisha Total			**77**
18	Hyderabad Yadgiri/Warangal	Telangana	65
19	Mancherial - Repellewada	Telangana	23
Telangana Total			**89**
20	Aligarh-Kanpur (Pkg II) [Bhadawas to Kalyanpur]	Uttar Pradesh	45
21	Four Laning of Sultanpur to Varanasi (PKG-II) [from Jaunpur (Km 209.230) to Varanasi (Km 272.590)]	Uttar Pradesh	63
22	Varanasi (Km 12.01) to Birnon (Km 84.160) [Varanasi - Gorakhpur] (PKG-II)	Uttar Pradesh	72
Uttar Pradesh Total			**181**
23	Balance Work for Raiganj Dalkola section from km 398.00 to km 452.700 (excl. Dalkola Bypass)	West Bengal	54
24	Salsabari-Assam/West Bengal Border (WB)	West Bengal	27
West Bengal Total			**81**
Grand Total			**1,472**



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Bridge over river Chambal at Kota

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