7. IMPLEMENTATION OF 20 YEARS SDMP (2015 – 2035) FOR KV

3.

Figure 7-1Old image of the Road from JuddhaSadak, Kathmandu before 1960s

Image Source: http://www.ekantipur.com/uploads/tkp/news/2012/gallery_06_01/Photo-of-New-Road-copy_20120602080736.jpg

Figure 7-2 Image of JuddhaSadak, Kathmandu in 2014

Image Source: http://www.ekantipur.com/uploads/ekantipur/photos/Daily%20Photos/2014-09-25/image2096308560.jpg

Transforming the "Strategies" into measurable "actions"will require metamorphosis of KVDA into a "center of excellence" institution, recognized as an authoritative agency with strong technical competency, supporting infrastructure, financial resources, and visionary leadership and with a support of efficient administrative and dynamic advisory teams.The implementation of 20 Years SDMP will require:

1. Supportive Legislative and Legal Framework
2. Land Management and Reform: Articulating a move from 3D to 3C
3. Institutional Re-structuring and Capacity Building
4. Financing SDMP
5. Coordination and Collaboration
6. Research and Innovative use of Technology

7.1 SUPPORTIVE LEGISLATIVE, LEGAL AND REGULATORY FRAMEWORK

Nepal has stride a long way forward in terms of national re-structuring with promulgation of 'Federated States' in the "Constitution of Nepal 2072", albeit various socio-political issues are yet to be resolved. The Cabinet decision and declaration of 72 new municipalities on 8th May 2014, 61 new municipalities on 2nd December 2014 and additional 26 new municipalities on 18th September 2015 reflects GoN's policy to prioritize urban development. At present, there are 217 municipalities, of which 22 municipalities (inhabited by 2,468,316 population, i.e. 22% of the total urban population of the country) are within Kathmandu Valley under the planning jurisdiction of the KVDA. In recent years, GoN has prioritized its policies and plans for integrated development in KV as the national capital region.

The current legislative and legal documents, including the new "Constitution of Nepal 2072", have made various provisions and guidelines, which unequivocally authorize KVDA, as an apex planning body for KV, to execute SDMP programs by avoiding any legal contentions. Annual fiscal budgets and plans have also prioritized development programs in KV, which convey provision of finances for integrated development of KV. Under the following sub-sections, enabling legislativeprovisions are discussed which present a firm ground for SDMP to beimplemented.

7.1.1 Constitutional Recognition for Urban Development

The "Constitution of Nepal 2072" has chartered legislative clauses supportive of the vision and mission of the SDMP 2015-2035 and has enabled its implementation.

Fundamental Rights

The Part 3 of the "Constitution of Nepal 2072", proponents the *"Fundamental Rights and Duties"*of the citizens of Nepal and includes right to clean living environment[1], right to clean drinking

[1] Constitution of Nepal 2072, Part 3 Clause 30 (2)

water[1]and shelter for all[2]. The Part 4, proponents *"Directive Principles, Policies and Responsibilities of the State"* guaranteesall round human safety and security[3].

The KVDA's SDMP translates "the fundamental rights of the citizens of Nepal" and "the directive principles, policies and responsibilities of the State" as its vision "To establish KathmanduValley as a Safe, Clean, Organized, Prosperous and Elegant (SCOPE)National Capital".SDMP envisions to ensure these fundamental constitutional rights of the citizens of Kathmandu Valley, thus by taking the responsibility to establish KV as a Safe, Clean, Organized, Prosperous and Elegant national capital region.

Policies regarding the basic needs of citizens

The new "Constitution of Nepal 2072", under its Part 4 Clause 51 State Policies (h) regarding the basic needs of citizens has stipulated the following under its

Sub-Clause (11): Developing well-planned and organized settlement areas by managing the unplanned settlements.

Sub-Clause (14): Increasing investment in the transportation sector by ensuring simple, easy and equal access of all citizens to transportation facilities, and prioritizing environment friendly technology, encouraging public transportation and quality private transportation, while also making the transportation sector safe, well managed and differently-abled friendly.

These constitutional policy directives mandateKVDA, as an apex planning and development authority for KV, to undertake development of planned settlement and transportation sector. The SDMP, under the proposed Strategies 1, 2 and 3 attempts to address the directives under "Constitution of Nepal 2072" Clause 51 h (11) and (14).

Property Rights

The previous "Constitutions of Nepal2045"have been rigid in terms of *Property Rights, which also includes 'land' as a property, provisioning an exclusive right of citizens to acquire, own, utilize and sell as subjected to the law.* The "Interim Constitution 2063"has made changes by provisioning acquisition of land by the state in favor of public interest under its Clause 19 (2). The Clause 19 (3) also stipulates that State can acquire citizen's property for scientific land reform or in public interest, provided lawful compensation is provisioned. This exclusive right to 'land' as a property,limited and ambiguous definitions of "land reform" and "public interest" has curtailed the legal basis for authorities to acquire or provision land for housing and urban development, especially for land use planning.

The new "Constitution of Nepal 2072", is progressive in addressing the issue of urban development and has stipulated under its Part 3 Clause 25 (4) that "the provisions of Clauses (2) and (3) shall not obstruct the state in carrying out any land reforms, management and regulation by law in order to

[1] Constitution of Nepal 2072, Part 3, Clause 35 (4)
[2] Constitution of Nepal 2072, Part 3, Clause 37 (1)
[3] Constitution of Nepal 2072, Part 4, Clause 51 a (4)

increase the production and productivity of land, modernize agriculture and make it professional, for ***environment protection and managed housing and urban development"***[1].

This explicit provision for "environment protection and managed housing and urban development" provide legal basis for KVDA and authorities to acquire/requisite necessary land through due process and appropriate compensation for implementation of SDMP.

7.1.2 Budgetary Provisions, Annual Plans and Policies for Urban Development

The Government of Nepal has given emphasis on urban sector in its periodic plans and also included themes like disaster management and climate change in the Five-year plans. The 8th Periodic Plan has further expanded to include management of peri-urban areas, urban road infrastructure and production and distribution of urban energy. It underscores alignment of development activities for retaining Kathmandu Valley as a cultural and heritage hub. For this purpose, the budgetary initiative by the government (budget speech of 2071/72 and 2072/73) has given emphasis on urban development through strategic investment. SDMP 2015-2035 has been developed as a framework and twenty years' roadmap for such strategic integrated development of the KV, which apparently needs to be incorporated specifically in the forthcoming annual fiscal budgets and plans.

The excerpts of the Budget Speech for the F/Y 2071/72 and 2072/73 and Annual Plans pertaining to KV and KVDA's roles are presented hereunder, highlighting prioritization of urban sector development in Kathmandu Valley.

Budget Speech for F/Y 2071/72

The budget speech of 2071/72 recognizes 'urbanization' as a major challenge and states that 'rapid urbanization has not been supported by minimum infrastructure'. It is because of the scattered settlement in Hills and Mountains, the cost of infrastructure construction and service delivery has increased and some of the settlements are at 'risk'. It has also allocated budget for urban infrastructure development, disaster management and for improving the physical and social environment of the urban areas.

The budget speech of 2071/72 has recognized Kathmandu Valley Development Authority (KVDA) as the main urban development partner forholistic development of Kathmandu Valley and any physical development inside Kathmandu Valley would require recommendation and consent from KVDA. The budget speech in its Clause No. 130 states

"Development works within Kathmandu Valley will be undertaken in an integrated and coordinated manner. Any and all development related activities including road widening shall only be undertaken after the recommendation of Kathmandu Valley Development Authority (KVDA) and through endorsement of Physical Development Committee (PDC)."

This clause has recognized necessity of coordinated effort for integrated development of KV and has also duly recognized KVDA as the apex coordinating authority for such an integrated development.

[1] Constitution of Nepal 2072, Part 3 Clause 25 (4)

Budget Speech for F/Y 2072/73

The budget speech of F/Y 2072/73 has specifically emphasized Kathmandu Valley as the "National Capital City" and has stated in its Clause 96 (official translation)

> *"After the conversion of the country into federal structure, it will be imperative to develop Kathmandu Valley into National Capital Region. Thus, development of Kathmandu Valley will be undertaken in a single package. The activities outlined in the master plan prepared for integrated development of Kathmandu Valley shall be gradually implemented to fulfill the objective."*

This clause emphasizes integrated development of Kathmandu Valley, recognized as the National Capital City of the Federal Nepal; and such integrated development will be implemented through program packages as identified by the Strategic Development Master Plan. As such, this SDMP is legally recognized as the master plan for the integrated development of KV. The strategies and its programs are the necessary development packages.

7.1.3 International Conventions and Urban Development

The Government of Nepal has participated in many International Conventions and Conferences and has made commitments to adopt the objectives of such programs in their development agenda. The SDMP has taken due consideration of these international conventions and has addressed in its strategies through defining specific objectives and their action plans that directly or indirectly contributes to the ratified commitments made internationally. Some of the major conferences where Nepal had been a signatory are listed below:

- The Government of Nepal, under the leadership of the Ministry of Science, Technology and Environment (MoSTE) participated in the **Convention of Parties, COP 21**, held in Paris from 30th November to 11thDecember 2015. Nepal formulated its climate change policy in 2011 and in COP21, Nepal stressed on taking necessary measures to cut down the emission of greenhouse gas (GHG) before 2020 and also to keep the global warming below 2 degree Celsius.

Urban Green House Gas Emissions (GHG) are influenced by variety of factors such as economic geography subjected to urban population dynamics, urban energy consumptions, urban renewables, transport , urban infrastructure and urban form(Seto et al., 2014). SDMP envisions to curb GHG in KV through integrated planned and development, land use regulations and smart growth, introduction of mass rapid transit and less emission vehicles, promotion ofenvironment friendly (green) building, designation of special forest areas, increase of urban greenery and promotions of renewable energy sources at household levels.

- Nepal, asa UN member nation and also member of the Open Working Group on Sustainable Development Goals; participated in the UN Sustainable Development Summit held in New York on 25th September, 2015. Nepal was signatory to the SDG and committed to 17 goals to achieve 3 extraordinary things in next 15 years: End Extreme Poverty, Fight Inequality and Injustice, Fix Climate Change.

SDMP's strategies and objectives are aligned to attain SDG Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.

- Nepal adopted the **SENDAI Framework for the Disaster Risk Reduction 2015 – 2030** on 18th March, 2015 at the Third UN Conference on Disaster Risk Reduction held in Japan and Nepal is going to be the first UN member to implement the DRR in its development agenda with focus on "Building Back Better" and enhanced disaster risk governance.

SDMP is geared to integrate DRR strategies in all of its development program with overarching vision of establishing Kathmandu Valley as a Safe, Clean, Organized, Prosperous and Elegant (SCOPE) National

- Nepal, under the leadership of Ministry of Housing and Physical Planning formed a working group for participating in the Habitat II conference held in Istanbul in 1996. Nepal has fully committed to the goals of "shelter for all" and "sustainable human settlements in the urbanizing world", which is also reflected in the National Shelter Policy, 2007.

These goals are translated into SDMP's objectives of "safe shelter" and "resilient infrastructure and safe and risk resilient urban areas".

7.1.4 National Acts and Regulatory Frameworks

As per the constitutional provisions, Kathmandu Valley Development Authority is an entity under the Central Government. The primary act that gives authority to KVDA for sustainable urban development of the Valley is Kathmandu Valley Development Authority Act 1988. However, this Act became effective only in 2012, while other authorities or agencies had already come into existence and had started functioning independently in the sector of urban infrastructure and services.

The policy, regulatory and legal environment is backbone for successful implementation of the 20 years Strategic Development Master Plan (2015 – 2035). Thus, in order for KVDA to move ahead with its responsibility, SDMP has analyzed existing legal, policy and regulatory regime that are supportive or overlapping in order to make SDMP (2015- 2035) an open, collaborative and participatory document. Therefore, considering the importance of policy, regulatory and legal environment, the KVDA has analyzed existing laws to identifysupportive or overlapping role,if there are any. Upon examination of the existing legal documents, the following laws and acts and other legal arrangements have been found still relevant and helpful to implement KVDA's Strategic Development Master Plan:

- Building Act, 2045
- Building Bylaws, 2066
- Construction Business Act, 2054
- Construction Business Bylaws, 2056
- Construction Code for the municipalities and Urbanizing VDCs in the Valley, 2064
- Consumer Protection Act, 2054
- Decisions of Guided Land Development Program, 2045
- Environment Conservation Act, 2053
- Forest Act, 2049
- Guthi Corporation Act, 2033
- Industrial Business Act, 2049
- Land Registration Act, 2034
- Land Related Act, 2021
- Local Self-Governance Act, 2045
- Local Self-Governance Bylaws, 2056
- Natural Disaster (Rescue) Act, 2039
- Nepal Academy Act, 2064
- Nepal Engineering Council Act, 2055
- Nepal Public Aviation Authority Act, 2053
- Nepal Trust Act, 2064
- Old Monument conservation Act, 2049
- Pashupati Development Fund Act, 2044

- Joint Housing Ownership Related Act, 2054
- Joint Housing Ownership Related Bylaws, 2060
- KVDA Act, 2045
- KVDA Bylaws, 2068
- Private Investment in Infrastructure Development and Operation Act, 2063
- Town Development Act, 2045
- Ancient Monument Preservation Act, 2013 (1956)
- Ancient Monument Preservation Rules, 2046 (1989)
- Land Measurement Act, 2019
- Land Acquisition Act, 2034
- Property Tax Act, 2047
- Public Road Act, 2031
- Road Board Act, 2058
- Private Investment in Infrastructure Development and Operation Bylaws, 2064
- High Powered Committee for Integrated Development of the Bagmati Civilization
- TDF Act, 2053

Although all of the above Acts are supportive in implementation of KVDA's plan and programs, there are some overlapping between the mandates of the KVDA and the municipalities in the valley particularly in land use, physical development, and building demolition as these two roles are separately stated in the KVDA Act and Local Self-Governance Act. Therefore, these overlapping have to be clarified and sole authority should be given to the KVDA for planning, development, regulating and monitoring. Implementation of such plans needs to be done at the two levels with major and inter-municipal interventions undertaken by the KVDA and local municipal level implementation actions undertaken by the respective municipal authority with close coordination and monitoring of the KVDA.KVDA should provide technical assistance and/or advisory support to the municipal authorities

7.1.5 Political Commitment

The very recognition of Kathmandu Valley as a single ecological planning unit through the KVDA Act 2045, and the Policies and Programs of the Government of Nepal for the Fiscal Year 2071-72 are clear testimonies of direction that the GoN and the present Constituent Assembly Members for KV wish to take with respect to the Kathmandu Valley. The Policies and Programs of the Government of Nepal for the Fiscal Year 2071-72 also emphasized on the role of KVDA for the integrated urban development of Kathmandu Valley through integrated land management, strategic development plans and management of open spaces. Further, the manifestos of mainstream political parties' (in the both Constituency Assembly elections) support KVDA's mandates and recognize its authority as the sole entity for planning and development of KV, which strengthen political support and add weight into the mandates of the KVDA.

7.2 Land Management: Articulating a move from 3D to 3C

Land supply is a key issue contributing to development of urban infrastructure and services. In the context of Kathmandu Valley, as depicted by the Urban Growth Trend Study and Development constraint analysis, land is both scarce and valuable for development. Hence, accelerating Land Management through wider stakeholder participation is fundamental to achieve a planned development. This is the only tool widely practiced in other countries, to some degree in Kathmandu Valley as well, to ensure constitutionally enshrined internationally advocated fundamental principle of citizen's "safety, liberty and property" – in short as well as long term. It is only through the proper management of this single natural resource, be it in private or public domain that a move from current situation of Kathmandu Valley's "Distant, Dispersed and Disconnected" [3D] pattern of unplanned and sprawled settlement to planned "Compact, Connected and Coordinated" [3C] development. 3C is fundamental to achieving KVDA's mission for Kathmandu Valley: a Safe, Clean, Organized, Prosperous and Elegant Kathmandu Valley. The concept of 3D or the sprawled development highlights the increase in per capita land consumption along with the increase in distance between homes, businesses and services, which raises the cost of providing public infrastructure and services. Hence, efficient usage of land has been emphasized as an important basis for accelerating and optimizing investment in infrastructure as well as for the effective implementation of the 20 years Strategic Development Master Plan 2015-2035.

In order to change the current situation of Distant, Dispersed and Disconnected Settlement within KV to a Compact, Connected, and Coordinated Settlement (from 3D to 3C), there is a need to focus on Land Banking for development, with connectivity to Transport and Disaster Resilience. To build a sustainable city it is crucial to reintroduce the old principles of city planning - “compact, connected and coordinated” (3C). Cities that implement this idea have high density, mixed use area; where places are not only in proximity, but also accessible and less demanding to the environment. These cities have a sense of place; offer greater security, more street life and better access to open space. Such type of land management is more preferable to create public assets through outright purchase of land parcels, thereby increasing the opportunity for the development of urban infrastructures. However, such practice also requires protected negotiation, large investment, consensus among company and landowners and is likely to cause displacement and associated socio-cultural economic consequences in the long run. In addition to land banking for housing, introduction of inheritance tax may create open spaces. Moreover, urban infrastructure and services, there is an urgent need for preserving public lands for pre and post disaster needs and utilization of such areas as urban parks.

Land Pooling is being practiced as an important tool for land management as it provides an effective and sound model for participatory development of urban areas. According to a study, the public asset creation due to the completed Land Pooling projects and in Guided Land Development in Kathmandu Valley is worth about NRs. 1,21,78 crores[1](Neupane, 2015). Land Pooling Policy emphasizes on increased participation of landowners, who surrender their land holding to concerned development authorities and be a stakeholder to the development proposed on their land; along with the involvement of the Private sector as a catalyst for urban development. The concerned authority develops the land surrendered by landowners for the implementation of the Master Plan. Irrespective of the land use assigned to their land, each landowner would get an equitable return (40- 60% of the total land) on their pooled land, thus, ensuring no displacement. In context of Delhi Development Authority, it retains 40- 60% of the total land area from the

[1]Cost of Land Rs. 2 crore per ropani—Completed Landpooling projects: NRs.3,428crore; Ongoing Land Pooling projects: NRs.3,658 crores; Guided Land Development projects: NRs.5,092 crores

landowners to develop infrastructures and amenities, along with sales plots to compensate the incurred infrastructure cost(Kshirsagar, 2013). Likewise, Ahmedabad Urban Development Authority returns 68% of land to the owners and the remaining 32% is used for providing necessary infrastructures and amenities, as well as to generate affordable housing and land plots for sale (Sanyal & Deuskar, 2012).

In context of KV, the land pooling process has been relatively less effective due to lesser percentage (25-33% of total land) of land retention for infrastructure development and sales plot. Hence, the Land Pooling Regulation is proposed to be modified so that the authorities could retain at least 40 – 50% of the total area. This would further aid to develop infrastructure and build sales plots as well, thus, ultimately resulting in increase in Land Value. In order to facilitate land management for development, present regulation for land development practices such as the present Land Pooling Regulation will be modified to encourage the financial participation from Government as well as Public and private sectors.

Present land pooling process practiced in KV since last 1.5 decades has been able to produce approximately 5723 ropanis of planned urban settlement with the provision of physical infrastructure benefitting limited households directly. KV has only 34.8% of constraint free area for further planned development. Hence, Land pooling would be implemented in massive scale, with wider participation of stakeholders so that these new settlements can act as interconnected but independent satellite townships that are Earthquake Resistant and Green. Within this context, KVDA will develop a win-win framework to materialize this concept, which will remove present source crunch by creating space for wider range of stakeholder participation to yield larger land assembly for other social, institutional and business infrastructure. The current successful practice and mechanism of land pooling for managed settlement will be extended for agriculture land pooling, commercial land pooling and industrial land pooling, thereby promoting urban agriculture, development of planned commercial zones and specialized environmental friendly industrial zones. These land-pooling mechanisms will also facilitate funding for KVDA and its various other programs. Special attention will be given to land needed for major infrastructure planned in the KV such as Melamchi Water Supply, Fast Track Road Network and others, which will require considerable land areas for various infrastructures. Serviced land will also be required within KV for the Federal States' offices (especially liaison and central offices for the representatives), which KVDA can facilitate through land pooling mechanism.

7.3 INSTITUTIONAL RE-STRUCTURING AND CAPACITY BUILDING

Institutional development and capacity building of KVDA is a pre-requisite for successful and sustainable implementation of the 20 years Strategic Development Master Plan of the Kathmandu Valley in addition to the wider range of consultation to develop an implementable Master Plan. KVDA, established as per the Kathmandu Valley Development Authority Act 1988 has the major task to prepare and implement a strategic development plan for the entire Valley that will provide a basis for other local bodies to conduct local level planning in a coordinated and comprehensive manner. In order to prepare and implement an integrated Kathmandu Valley Development Plan, KVDA is responsible to act as Valley Planning Commission and is in the process of strengthening its coordination mechanism to coordinate with all the relevant government and non-government stakeholders, including government administrative agencies, utility agencies, local municipalities and VDCs, NGOs and INGOs. Emphasis on the role of KVDA as a Valley Planning Commission is, thus,

highly important for both –effective implementation of 20 years SDMP and to upgrade the safety of life, liberty and property of the population of the Kathmandu Valley.

7.3.1 Current Implementation Structure

The KVDA is governed by the Kathmandu Valley Physical Development Committee (PDC) (Figure 7.3), chaired by the Honorable Minister of Urban Development, with members consisting of four other ministers and nine secretaries of the Government of Nepal, Chief Executive Officers of five municipalities and Chairpersons of three DDCs[1]. The Development Commissioner of KVDA serves as the Member Secretary of the Committee and Chief Executive Officer of KVDA. The role of the PDC has been influential to inform and coordinate policies at highest level of agencies involved in the development of Kathmandu Valley. However, in the present context, PDC needs to play a proactive role in coordinating the policies across several agencies and in integrating the undertaking of the development of urban infrastructure, along with socio-economic development for the Kathmandu Valley. The Budget speech 071/072 (2014-2015 A.D.) has also stressed the responsibility of PDC in assessing and reviewing all aspects of urban development (Physical, Economical, Environmental and Social) within the Kathmandu Valley.

In addition to the PDC, there is also a high-level management committee with the structure as shown in Figure 7.4. In order to boost up the function of the KVDA, the Ministry of Finance has approved a total number of 137 positions for KVDA[2]. The current organizational structure is shown in Figure 7.5.

[1]The governing body of the KVDA, PDC, has established a process of inviting Constituent Assembly Members of KV- on issues and location basis - in the PDC meeting. A permanent arrangement to invite selected CA members will be made when the KVDA act is revised to make sure that the people's representatives from the valley take part in the permanent mechanism for policy guidance.

[2]Approved on 2070/04/23 on the basis of recommendations made by the Physical Development Committee Meeting held on 2069/09/08

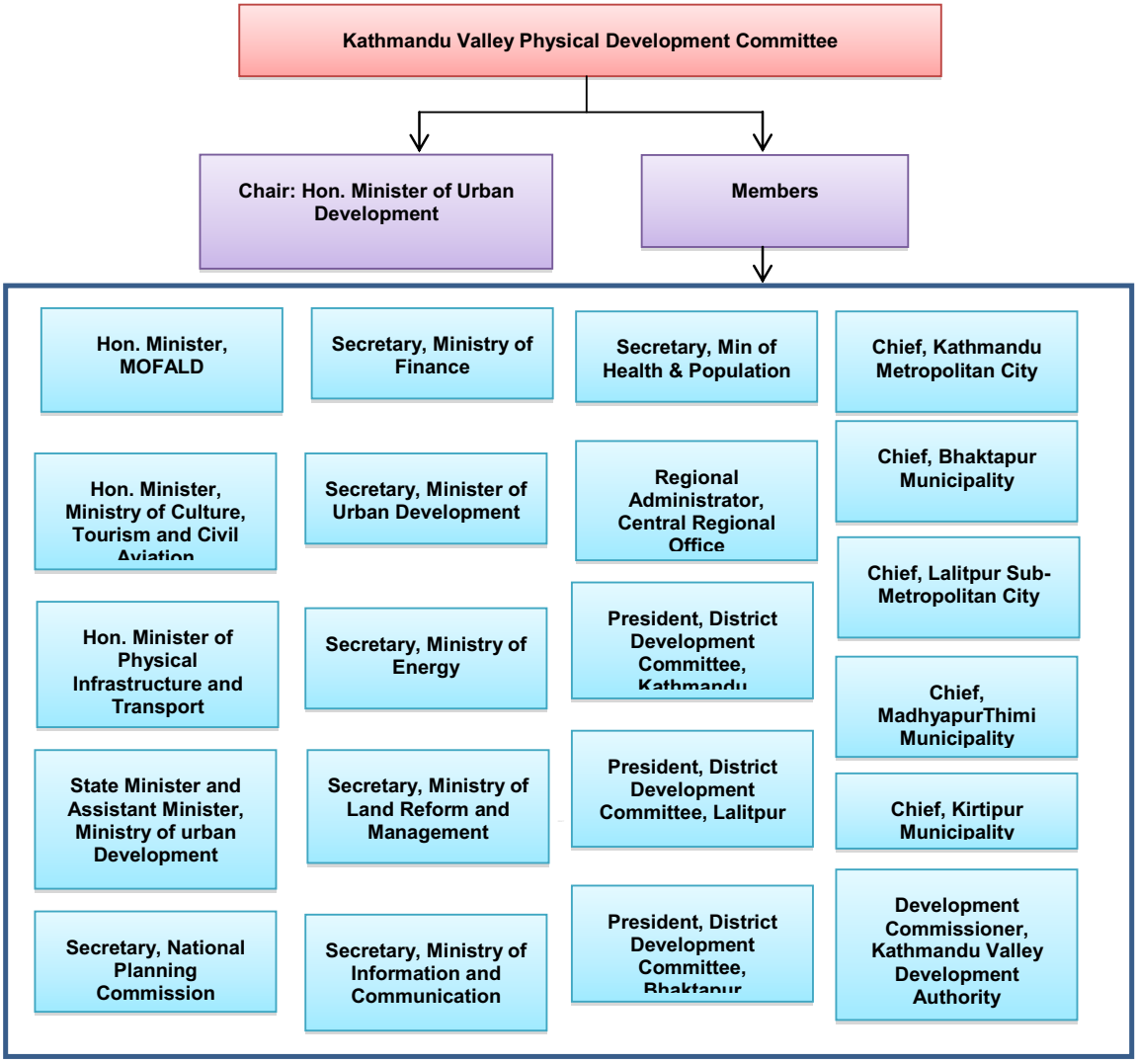


Figure 7-3 Structure of the Kathmandu Valley Physical Development Committee, the Governing body of KVDA

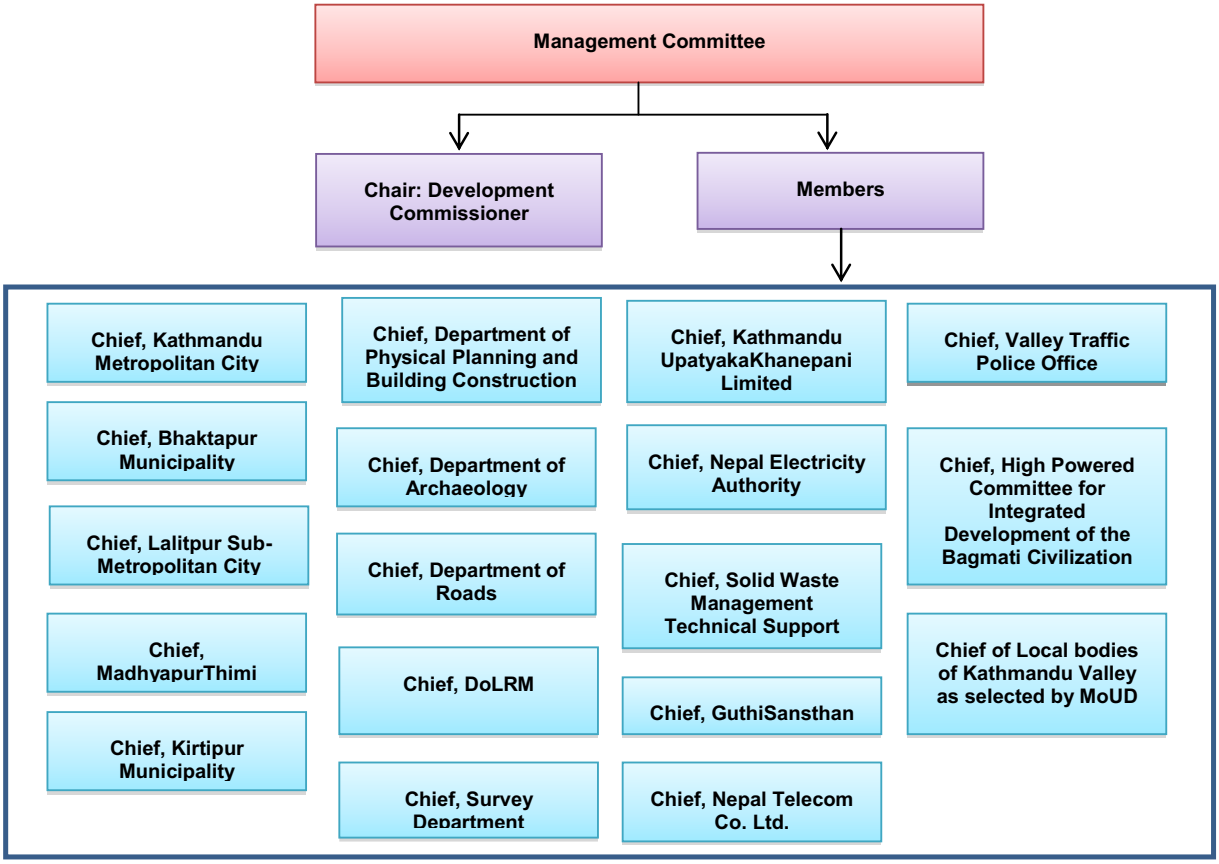


Figure 7-4 Management Committee Structure of KVDA

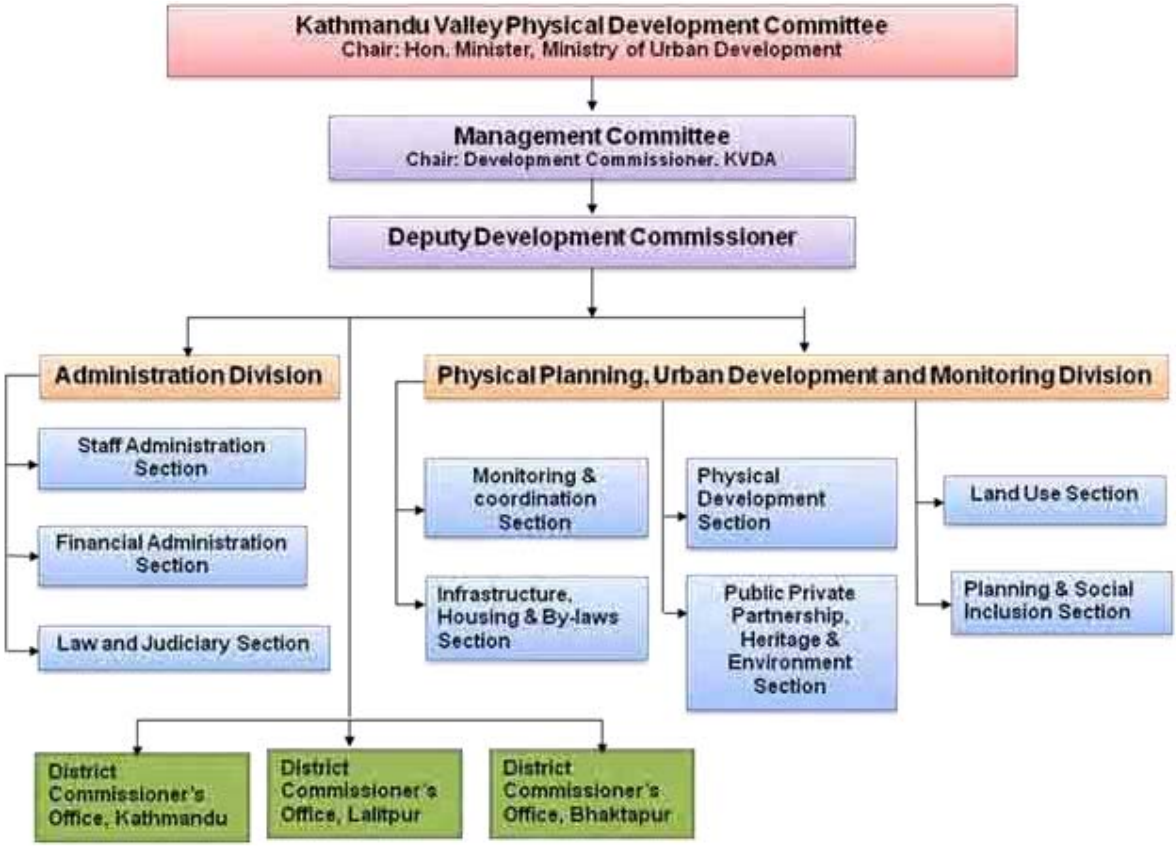


Figure 7-5 Organizational Structure of the KVDA

KVDA needs to play the role of the Valley Planning Commission so as to start coordination right from the planning level. In order to achieve its vision and mission, a modified version of its current organizational structure is highly essential.

7.3.2 Proposed Implementation Structure

While both the PDC and the management committee are proposed to remain unchanged, major restructuring has been made in the in the envisaged institutional set up of KVDA (Figure 7.6). This reformation is essential to align KVDA's institutional framework with its functions proposed and to deliver the Strategic Plan, to continually monitor and evaluate outcomes and to update the Plan for the next cycle of major revision. The "new" vision of KVDA and greater needs of coordination in the planning process have ultimately necessitated a major overhaul again with the development and delivery of the Strategic Plan. Implementation of the Plan requires greater resources than what is currently available. As in the existing structure, the organizational structure would be headed by the Development Commissioner of KVDA. A Technical Advisory Group (TAG), consisting of 7 specialist professionals from the civil society, has been formed to advise the Development Commissioner of KVDA in the preparation and implementation of the Development Plan and in development related decision-making matters for Kathmandu Valley.

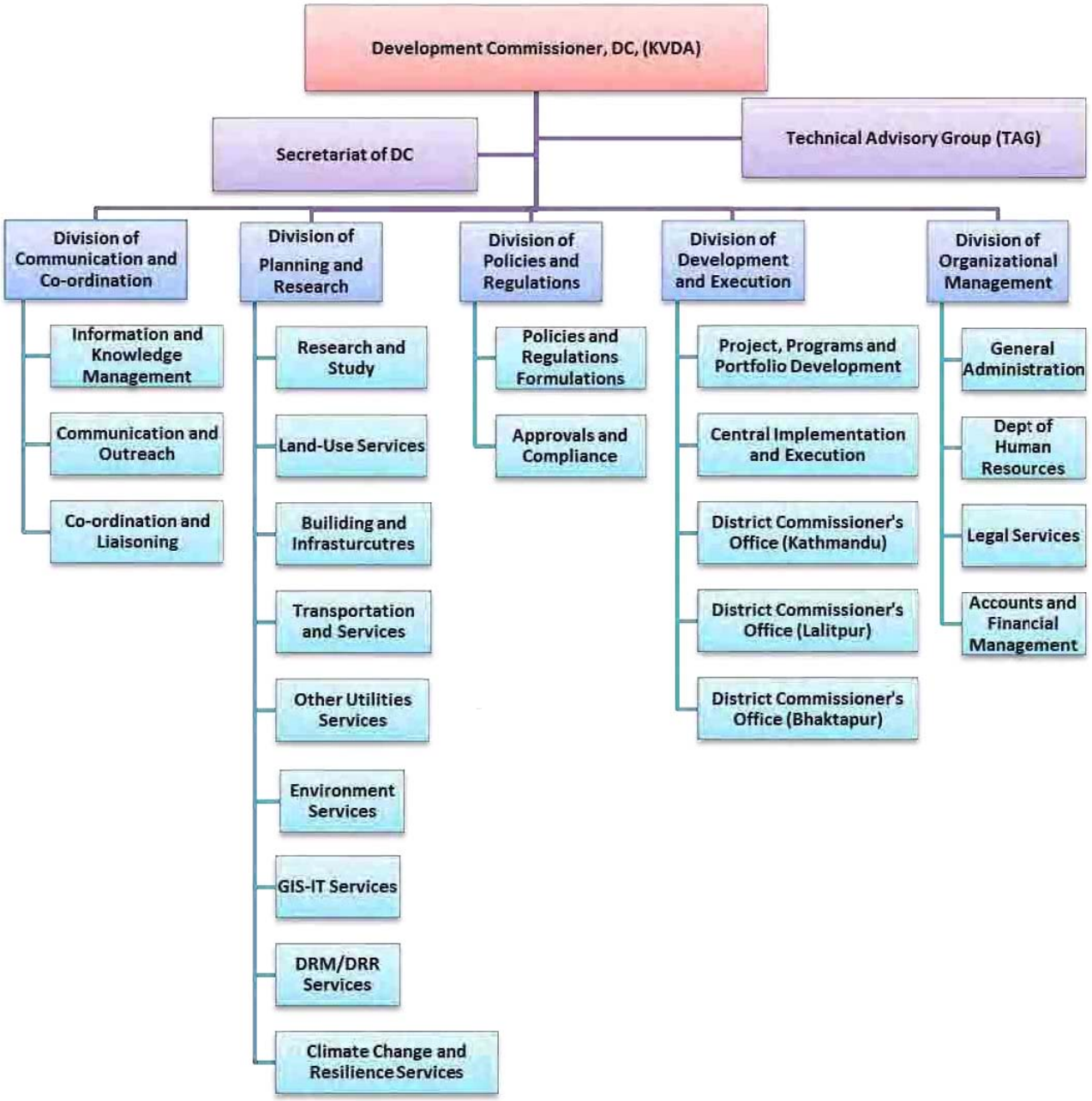


Figure 7-6 Institutional Set-up suggestion for KVDA

The detailed functions of the proposed new divisions and its sections/units are presented in the Annex of this chapter.

7.4 Financing SDMP

Full implementation of SDMP and its programs will require significant financing. Internal sources including provisional government grant to KVDA will be insignificant in terms of scale of works and their budgetary requirement. Implementation of SDMP should be accepted by the government as one of the nationally significant "pride project".

On analyzing the financial investments for KVDA, based on NUDS, investment is calculated for developing minimum infrastructure, open spaces and land banking in KV to achieve the aspired vision by 2035. The calculated investment accommodates the population projection till 2035 and suggests to accommodate 850,000 population in planned residential development areas with development of 111,184 ropanies of land through land pooling. The calculated investment for development of minimum infrastructure is based on the standards set in NUDS, however the factor of 1.5 is used as KV being the capital region necessitates higher standard of infrastructure. Similarly, 10% of open space is envisaged in future development, which may include existing public land. The calculation demands about NRS 600 billion for development of minimum infrastructure, NRS 11 billion for development of open spaces and about NRS 90 billion for land banking in land pooling projects. (Annex 2)

KVDA has a firm legal grounds to acquire necessary funding through viable internal and external means. The KVDA Act (Provision 16) states that KVDA shall have its own fund to manage its programs upon approval from GoN. The following three major windows may be used to generate the resources for a permanent KVDA Reserve Fund.

7.4.1 Grant

Since its establishment, KVDA is running its organization and conducting its activities through annual budgetary allocation from Ministry of Finance (MoFIN) like any other government agencies. However, the provided budget is in the form of a grant, any unspent amount at the end of a fiscal year cannot be retained for the next fiscal year, as it has to be surrendered back to MoFIN at सर्व संचित कोष (All Accumulated Fund).

The procedure for obtaining budgetary support will follow a universal governmental model. Thus KVDA Act's Provision 19 envisages a separate "KVDA Fund" where all financial support received from following sources is to be deposited:

a. Grant from GoN

With the proposed implementation of SDMP programs as the "National Pride Project" and organizational re-structuring requirements, major financial intervention from the GoNis necessary. Annual budget allocation must be boosted with additional budget provisions for "package"implementation programs identified by the SDMP. These package programs may require to be implemented as multi-year programs, which will need multi-year financial commitment as "package budget provisions" from the GoN. Additional grant is also needed for organizational restructuring and institutional capacity building of the KVDA if it is to function to fulfill its mandates. Financial plan for such package implementation programs and institutional capacity development will be prepared by the KVDA and submitted to the MoF for annual budget grant.

b. Any financial support from international, bilateral or multi-lateral agencies

Financial support from the international development partners, multilateral or bi-lateral sources will be actively sought by the KVDA with the support and coordination with the MoF and MoUD. Development partners such as ADB, WB, JICA, UNDP and others have been supporting KVDA for various other development and planning related activities. Their roles on specific sectors will be defined and assistance requested on program package basis.

c. Any income acquired from the mobilization of KVDA's own asset

KVDA does not own capital assets for income generation. KVDA must be capacitated to purchase land and retain as its primary capital assets. These lands should be used for land banking, land adjustments, transfer of development rights and other mechanisms that enable KVDA to capitalize its land assets.

d. Issue of development bonds

Another mechanism for mobilization of land assets is to issue development bonds to the interested investors, primarily licensed real estate developers.

e. Any other amount received by KVDA

Any other grants received through government channel will boost the implementation for the SDMP programs to be undertaken by the KVDA.

7.4.2 Loan

KVDA has been receiving loan to some extent from GoN to support implementing participatory Land Pooling (Land Readjustment) projects. The one and only source to pay back the loan and interest to GoN is through the 2% margin of spread rate between what KVDA pays to GoN and it receives from the land pooling projects.

7.4.3 Other Arrangements

KVDA has not received any direct financial support (grant or loan) from any external agency. It is apparent that even to receive few soft loans; KVDA's revenue generation modality has to be in place. Hence, another source of fund could be the contribution of the inhabitants of Kathmandu Valley at House-hold level. Through the concept of "safer & resilient Kathmandu Valley" surcharge on following taxes could be collected by GoN and transferred to the KV Integrated Development Fund:

a. Provision of tax collection from land transaction within KV Development Region

According to the statistics from the DoLRM published in (Giri, 2014; Kathmandu Post, 2014), land revenue from property transaction surged more than 50% from the previous year and hit record

high of NRs.7.81 billion in FY 2013/14 of which land revenues from Kathmandu Valley contributed 35% (i.e. about NRs. 2.73 billion) of the overall transaction. Proportion of land revenue tax may be allocated to KVDA as land development tax. Further, upon the implementation of Risk Sensitive Land Use Zoning and its ordinances, taxation mechanism will regulate land use changes and overall land transactions. Revenues from this regulatory taxation should be allocated to the KVDA fund.These funding modalities through land revenues from various land transaction mechanisms may be collected for KVD fund:

- Allocation of certain proportion of land revenue from and transaction to KVDA development fund
- Additional tax levy for KVDA development fund in land transactions
- Land use control tax, penalties and fines
- Land pooling for agriculture, commercial, industrial and special infrastructure
- Additional tax in capital gain for the land property

b. Tax collection on vehicle registration within KV

Emissions from vehicles (PM_{10},$PM_{2.5}$, CO, O_3, S_2O, NO, etc.) are the main contributors of environmental pollution in the KV. The number of vehicles registered in the Valley in 2014 reached 8,22,449[1]. Dept. of Transportation Management collected vehicle tax of NRs. 2,167,766,699[2] during F/Y 2070/71. Certain proportion of this could be allocated to KVDA fund as vehicle and pollution tax.

c. Tax from airport authority (for provision of built up restrictions and noise pollution)

KVDA, in its Risk Sensitive Land Use plan has defined Aircraft Approach Funnel in the southern and northern regions of the TIA (as defined by the CIAA of Nepal) and is regulating high-rise constructions that may obstruct the landing and takeoff of international and national flights. It therefore may be rational to levy some tax to the airport authorities for built-up restrictions and noise pollution. This could be imposed upon carriers and airlines operators from the TIA and allocated to KVDA fund.

d. Polluters' Pay Principle Taxes

As an eco-tax and an effort to reduce the greenhouse gas emissions in KV, polluters' pay principle taxes should be enacted for public vehicle operators (diesel and petrol public vehicles operating in KV and along external routes), transportation and truck operators, quarry operators, brick kiln operators and other polluters. Air pollution, surface water pollution, ground water polluting will be curbed through taxations and fines to the polluting industries.

7.5 Coordination and Collaboration

[1] As per the Information provided by Metropolitan Traffic Police, Kathmandu on 8.9.2015

[2] http://www.dotm.gov.np/uploads/files/Revenue-Collection-2070-71.pdf

The KVDA has developed the 20 years Strategic Development Master Plan to address the urban issues taking entire Valley as a development unit for urban development and make Valley livable through sustainable urban management. Sustainable urban management is only possible when all the related institution work together in a coordinated way. As depicted by the strategy "*Two levels of planning*", while local government would have a more proactive role in the development of local level plan and infrastructure development at micro level, the proactive role of KVDA is highly important to prepare and implement regional level land use plan and regulatory control measures along with data management and capacity building activities to develop safer, cleaner, resilient and livable Kathmandu Valley. It is also necessary to update monitoring and planning regulations while defining the authority of KVDA.

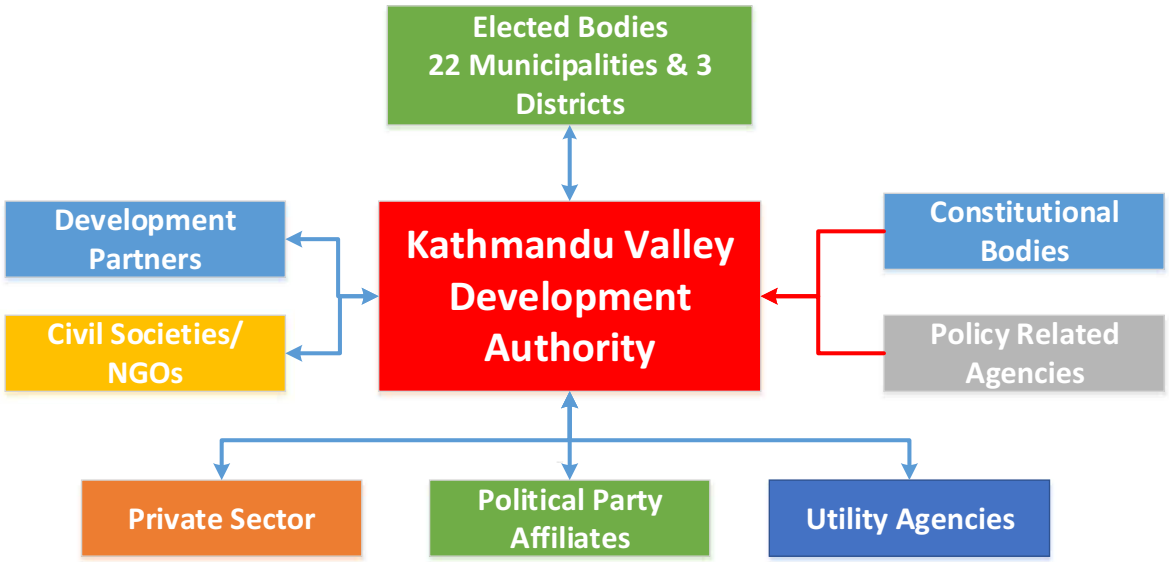


Figure 7-7 Interlink between KVDA and related organizations

KVDA has its governing body the 'Kathmandu Valley Physical Development Committee' that is represented by the Ministers and Secretaries from key ministries related to urban development and local governance, DDC chairpersons and chiefs of Municipalities from the valley districts and towns. As the governing body of the KVDA, KV PDC may be reformed to bring Members of Parliament from the Valley on board to make sure the people's representatives from the valley take part in the permanent mechanism of KVDA for policy guidance. This will ensure better linkages and coordination among the institutions responsible to the valley's development.

Similarly, the Management Committee under the KVDA also gives an opportunity to the Chief of municipalities from the cities of Kathmandu valley, Chiefs of Utilities offices, Chiefs of departments related to urban development come together, work together to minimize the duplication and increase the effectiveness in the development interventions.

Another platform created within KVDA is a Technical Advisory Group that provides expert advice, information and make recommendations to the Management Committee for preparing the Development Plan of KVDA and suggest a feasible methodological framework for its implementation, help enlist the involvement of experts from the civil society at grass root level for reforms in urban governance through Ward Committees and Voluntary Technical Corps in each cities within the Kathmandu Valley from the diverse group of people.

Finally, the proposed Division of Communication and Co-ordination would give a better ground to co-ordinate with stakeholders/ collaborative partners such as utility agencies, local municipalities and VDCs, NGOs/INGOs, other local bodies, government agencies, collaborators, civil society organizations and media and business communities. These platforms give plenty of opportunity in formulation and implementation of related plans, programs, regulations, standards, guidelines, acts and policies, handle the communications, outreach and knowledge/information management functions of KVDA and its divisions. Thus, the role of KVDA as a major coordinating agency has to be well emphasized both to ensure better coordination among concerned institutions within the valley and as a major linkage to balance the top-down and bottom-up approach for the overall development of Kathmandu Valley.

Coordinated effort is imperative as there are multiple organizations (local bodies, government line agencies, private and public organizations, utility authorities, development partner supported programs) including major infrastructure interventions such as Melamchi Water Supply, Fast Track, as well as various apex authorities such as High Powered Committee for Integrated Development of the Bagmati Civilization(HPCIDBC) working in the Valley in aspects of urban development, infrastructure and environment.It is imperative that that these different entities are coordinated under one umbrella and overlapping mandates/responsibilities be centralized under one roof.

7.5.1 Exclusive Authority for Integrated Development of KV

KVDA Act has exclusively mandated KVDA as a sole government authority, directly under the central government, to undertake and execute **Integrated Development of Kathmandu Valley**. The government, under different political leadership, however, created multiple agencies with similar and overlapping responsibilities in the last decade of political transition. Now it is evidently realized that these agencies are impeding integrated development of the KV due to lack of their coordinated works, duplication in resource mobilization, lack of transparency and more seriously unnecessary encroachment in other agencies' mandates. The coordination must be done through and by the sole mandated agency KVDA. Overlapping responsibilities must be centralized and shared responsibilities bedefined. Establishment of new agencies with new responsibilitiesmust be discouraged and such required new responsibilities be channelized through the KVDA. KVDA must be recognized and transformed as a financially autonomous entity in addition to its current legal autonomy, strengthening its institutional capacity, human resources, financial resources, as well as mandated to generate its own resources.

GoN has created several authorities such CAAN, NEA, KVWSMB, NTAetc. and have empowered them with exclusive rights to implement government's plans and policies in respective sectors. These authorities have also been mandated to plan, construct, operate, maintain, regulate and revenue generation in a form of tariff/fee collection for service provided to general public and businesses. However, KVDA, formed under similar Act, with an authoritative mandate to prepare and implement **Physical Development Plan** for integrated development of the KV, has not been able to effectivelyexercise its empowered mandate, primarily due to overlapping and often impeding functions of different line ministries (MoLRM, MoFALD, MoUD, MoPIT), different departments (DoR, DUDBC, DoLRM), authorities (KVWSMB/KUKL, HPCIDBC) and municipal offices.

Authorities such as CAAN has exclusive right for the skyways to operate and regulate the use of Nepalese sky for commercial and non-commercial aviation and generate revenues; NEA has exclusive right to generate, regulate, transmits and distribute electricity earning revenues; NTA

similarly has exclusive right to regulate telecommunication frequency to earn revenues. Within KV, authorities such as KVWSMB/KUKL has exclusive right to generate revenues through distribution of drinking water and management of sewerage. *Per se* KVDA as an authority for integrated development of KV with its role as a 'planner, developer and regulator' should be able to exercise its exclusive mandate for the integrated development of land, infrastructure, and utility services. Availability of land is the prerequisite for these functions, therefore KVDA must be mandated to administer and manage land resources with exclusive authority within Kathmandu Valley Development Region. Conflict of functions with MoLRM and Land Revenue Offices should be resolved through definition of specific functions such that MoLRM and its related departments/offices are responsible for preparing, managing and archiving the land records and KVDA, as the planning and implementing authority of land use and development, be responsible for regulating and managing land related transactions.

Other infrastructure services and provisions to support utility providers should also be administered by the KVDA. With the concept of integrated development, land use planning/development and infrastructure development should go in conjunction and in coordination. KVDA should be mandated to provision planned land for urban utility and infrastructure corridor for road (strategic roads under DoR), electricity transmission line, telecommunication distribution line, water supply and sewerage systems and other infrastructure. Utility corridor is guided by the land use plan and required land is provisioned to the infrastructure or utility authority on lease or sale for their service infrastructures. This will also enable coordinated urban infrastructure development between KVDA and other infrastructure and utility service providers.

7.5.2 Exclusive Authority for Road and Integrated Transportation of KV

Management of vehicular traffic within KV is proving to be a major challenge to the authorities. Insufficient road infrastructures, narrow unconditioned roads, unregulated public transportation system and un-proportionate volume of two-wheel and four-wheel vehicles with respect to road length are common characteristics of traffic system in KV. This is further exasperated by uncoordinated road constructions, utility service constructions, lack of service repairs which has proven to be cause of major discomfort to general public in KV. Integrated land use and transportation planning are inseparable and has been conceived accordingly by the SDMP. Therefore, along with the exclusive authority of the land, exclusive authority for development, maintenance and management of roads (excluding Strategic Road Network managed by the DoR) within the KV should be mandated to the KVDA. Along with the maintenance of the roads, transportation management along its roads should also be mandated to the KVDA. KVDA, under its leadership, has successfully demonstrated the recent road widening in coordination with other authorities. This exemplary success case demonstrates the capabilities of KVDA to undertake coordinated effort and ownership of the roads and transportation system in KV. Under its authority and ownership, KVDA should be mandated to undertake

- Integrated planning, construction, maintenance, management of road assets.
- Operate (under BOOT model) transportation system including mass rapid transit (MRT), bus rapid transit (BRT), automated guided transit (AGT) and green transportation infrastructure

Revenues from toll-roads, and transportation system will pour in additional finances for implementing SDMP.

7.6 Research and Innovative Use of Technology

In the context of "evidence based planning", research and analysis of information is pre-requisite for informed decision making in urban planning. Research gives an outlook of the similar issues elsewhere, and enables to develop innovative methods and strategies to tackle the issues. Concept of "think globally act locally" should be adopted and adapted to address the universal problems of urbanization. Research enables to tackle the issue scientifically and practically on the basis of reliable information. The lessons learned through the researches could be up-scaled and adopted throughout the country as the best practice in urban sector.

KVDA's vision to establish itself as a "Learning and Innovation Center" is a step towards embracing research and development as a backbone of informed decision-making. Any new plans, programs and implementations defined under the objectives of the SDMP seeks to undertake innovative research to design in details considering cross-cutting issues, coordination among the stakeholders and active participation of the civil society. Understandably, research based planning works help to define the problems accurately and find optimum solutions. Further pilot based implementation tests the feasibility and acceptance of the planning, minimizing the cost and ensuring viability in larger scales. Any planning and its implementation should allocate provision of 5-10% of budget for research and innovation. As such the financing of the program and implementation should provision appropriate budget for research and development, which will prove to be additional value to the planning and result in more effective implementations.

Use of advance technologies adaptable and affordable in the national context will enhance research capabilities and in-turn support sustainable planning of KV. Access to information highway (i.e. internet) enabling use of Geo-Information Communication Technology (Geo-ICT), location based intelligence, earth observations, smart sensor network, and many more innovations of 21st century is within easy access and understanding of the new generations of Nepalese. Extensive use of Geo-ICT should be pursued to enable Kathmandu Valley as the national capital to aim for being a "Smart City" in the next decade.Some of the innovative technologies that will support informed decision-making in KV could be recommended as the following:

- Use of ICT for coordination and collaborations with the stakeholder, partners and civil societies.
- Development of Integrated Urban Information System using Geo-ICT and Earth Observation technologies for informed decision support, collaborative planning, implementation and monitoring.
- Development and installation of Smart Sensor Web system to monitor the environment and hazards for early warning and mitigations.
- Encourage and enable citizens' participation in data capture, planning and monitoring through crowd sourcing.
- Encourage and introduce smart public transport system, public service delivery.
- Encourage and introduce smart building design and construction practices encouraging energy efficiency and livability.

7.7 Cross Cutting Issues

7.7.1 Accountability Mechanism

In order to make Kathmandu Valley safe, clean and livable for its residents, KVDA could consider the following factors to make it more accountable to the residents of the Valley. These elements would help increase the level of awareness and strengthen its accountability.

Besides the existing government mechanisms for grievances and complaints, new and innovative use of ICT will be used to enable public participation in SDMP implementation, monitoring and reporting. Such innovative tools are web based on-line petition and suggestion collection system, mobile based application for crowd-sourcing data collection, reporting and public monitoring. Other tools such as web-based Decisions Support System will also be implemented for "citizen-planners" and line agencies to participate in the SDMP planning and implementation processes. Mechanisms for transparency and accountability are as follows:

- Grievance hearing mechanism through" SujhabPetika" or Suggestion Box and toll free telephone line
- Maintain information desk for regular media briefing about activities/programs through spokesperson
- Develop and display citizens' charter
- Recognize Right to Information (RTI) as key element of transparency and provide access to data and information via internet
- Social audit through public hearings on projects
- Publish annual report, study reports, plans each year
- Incorporate Open Meeting Laws for major policy level decisions for elected and appointed boards and commissions
- Institute volunteer boards and commissions for various activities: parks, pedestrian activities, housing, disaster management etc.
- Implementation of on-line and mobile application based petition system
- Implementation of crowd sourcing and online Decision Support System

7.7.2 Gender and Social Inclusion

As the SDMP strives for development of Kathmandu Valley, it is also important to make the approach and outcome inclusive, such that the benefits of change are distributed equitably. Inclusivity means accessibility of women, economically weak and socially excluded people to opportunities and services that urban development has to offer. The issue of Gender Equity and Social Inclusion (GESI) has been recognized and adopted in the national as well as sectoral policies and plans, which makes the internalization of the issue in the interventions proposed by SDMP both inevitable and necessary. Some major policies, plans and guidelines that provide foundation for KVDA to internalize GESI are:

- The Constitution of Nepal (2072) underscores GESI to address the issue of inequality, such that the provisions in Right to Equality, Right against Discrimination, Right of Women, Right of Dalits, Right to Social Justice confirms the development activities to be sensitive towards women, Dalits, Janajatis, Madhesis, economically weakand other marginalized group
- The 10th Five-year Plan (2002-2007) was focused on poverty reduction with social inclusion as one of the four pillars.

- In 2007, the government adopted National Urban Policy that aspires to achieve healthy secure and economically vibrant urban environment with major strategies for increasing accessibility of the economically deprived groups to affordable land and dwellings.
- In 2013, MoUD adopted GESI Guidelines 2013 that aims for increased access of women, poor and economically deprived groups to resources and development benefits.
- The National Urban Development Strategy (2015) has undertaken 'Inclusivity' as one of the five guiding principles to promote social justice and contribute to equity and balanced development.

7.8 Road map for the Implementation of 20 Years Strategic Development Master Plan(2015 – 2035) for Kathmandu Valley

TIME LINE: ROAD MAP OF KATHMANDU VALLEY DEVELOPMENT AUTHORITY

Simultaneous Planning and Implementation Approach

Activity	•Outcome

PREPARATORY STAGE

2013

Preparation of Road Map of KVDA for Kathmandu Valley Development with identification of key priority activities	•Road Map of KVDA •Listing of key priority activities

ANALYSIS & IMPLEMENTATION OF PRIORITIZED ACTIVITIES STAGE

2014- 2015

Study of Urban Growth Pattern **Multi Hazard and Risk Assessment** **Revision of Long Term Development Concept**	•Development of 20 Years Strategic Development Master Plan for Kathmandu Valley (2035) containing: •Current Situation & Future Growth •Potential Urban Extension Areas •Broad Land Use Zoning based on Constraints •Intervention Goals •Risk Sensitive Land Use Strategies and Tasks •Multi Hazard Map •Identification of other Key Priority Programs and activities to start implementing.
Preparation of Risk Sensitive Land Use Plan (RSLUP)	•Develop a comprehensive RSLUP for KV •Develop RSLUP at Municipal/ VDC level •Revise /Update Existing Building Bye-laws

Project on Urban Transport Improvement of Kathmandu Valley in collaboration with JICA

- Establishment of Comprehensive Urban Transport Master Plan
- Implementation of Pilot Project
- Capacity development of relevant agencies to monitor, maintain and alter the Master Plan

ANALYSIS AND IMPLEMENTATION OF PRIORITIZED ACTIVITIES STAGE (Contd..)

2014- 2015

Implementation of Key Activities

- Implementation of Key Activities such as:
  - 10 ecological parks design and construction, 2 under progress
  - Implementation of road side beautification works in 5 sample widened roads
  - Develop guidelines for street beautification
  - Develop guidelines for urban roads
  - Updating of Road widening and GLD guidelines
  - Preparation of Open Space ATLAS
  - Application for GEF fund (USD 7 million) for implementing urban EbA- Under consideration in Peru Climate Summit

Institutional Development and Capacity Building of KVDA

- Study of existing Statutory & Legal Provisions, Org. Structure, Staffing and Financial Resources
- Provision for the establishment of committee to develop Urban Standards and Regulations
- Institutional Mapping of Govt& NGOs working in physical development of KV
- Design & Const. of Learning-Innovation-Application Center
- Revision of Bye-laws, acts and regulations to develop
- Preparation of IEC materials to promote KVDA
- Endorsement of Institutional Development, Capacity Building & IEC plan from MoUD
- Design & Construction of KVDA Building
- Institutional Development Program

PLAN PREPARATION & IMPLEMENTATION OF PRIORITIZED ACTIVITIES STAGE

2015- 2016

High Priority Action Plan as emerged due to the Earthquake of April 25, 2015 and consequent aftershocks

- Prepare Kathmandu Valley Resilience Plan
- Development, Conservation and Management of Multipurpose open spaces in Kathmandu Valley
- Establishment of hierarchy of Road Network (Proposed Kathmandu Valley – urban road standards could be basis for normal road width determination)
- Preparation of Risk Sensitive Land Use Plan (RSLUP) and zoning of possible building heights, permissible and restricted uses
- Preparation of Planning/ Building By laws
- Modification in present Land readjustment regulation
- Regeneration of 'agro-politan' Traditional Settlements: Learning from past for a sustainable future
- Ward-wise Damage Assessment Mapping and Valuation of loss (including economic loss)
- Project for Assessment of Earthquake Disaster Risk for the Kathmandu Valley in Nepal
- Kathmandu Valley Urban Transport Improvement Project

Institutional Capacity Building of KVDA

- Continuation of Various Activities listed in the Analysis stage

Preparation of Operational Plan of SDMP

- Management of Urban Sprawl with the Upgradation and Expansion of Urban Infrastructure
- Development of New Towns (Urban Extension)
- Environmental Protection and Management
- Management of Open Spaces, Parks and Barren Lands
- River Basin Protection and Management
- Disaster Risk Reduction and Management
- PPP in Infrastructure Development and Management
- Comprehensive Street Lighting
- Comprehensive Rain Water Harvesting
- Metric Addressing System
- Prioritization of activities

Implementation of Key Activities

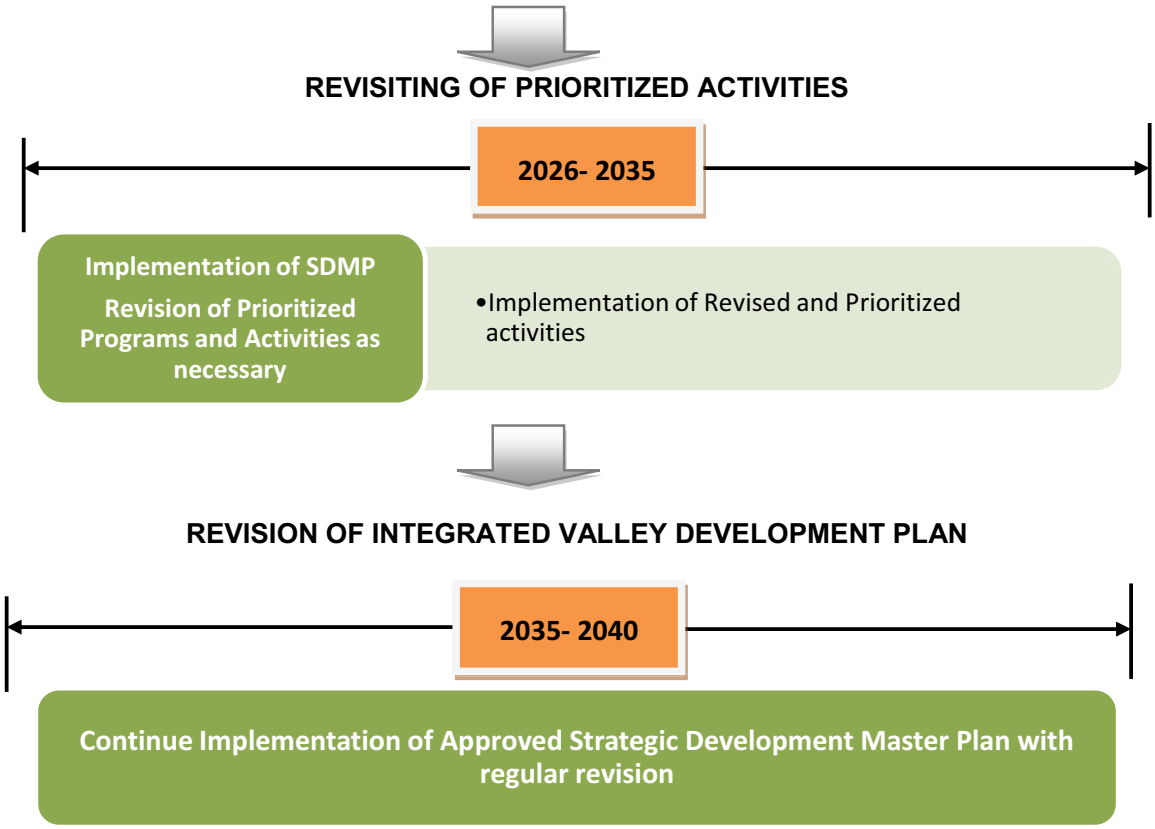
- Implementation of Prioritized Activities
- Urban Regeneration of Heritage Core and Old Settlements
- Land Pooling and Land Sub-division Regulation
- Land Banking System
- Management of Urban Poor
- Establishment of 3 Satellite Towns
- Implementation of road side beautification works in 5 sample widened roads
- Solid Waste Management
- Any other activities that emerge as per requirements of Kathmandu Valley, National and International experiences

CONTINUED PLANNING & IMPLEMENTATION STAGE

2016- 2025

Implementation of SDMP

- Implementation of SDMP Activities


REVISITING OF PRIORITIZED ACTIVITIES
2026- 2035
Implementation of SDMP
Revision of Prioritized Programs and Activities as necessary
•Implementation of Revised and Prioritized activities
REVISION OF INTEGRATED VALLEY DEVELOPMENT PLAN
2035- 2040
Continue Implementation of Approved Strategic Development Master Plan with regular revision

HIGH PRIORITY ACTIVITIES

(POST-DISASTER PLAN FOR KATHMANDU VALLEY)

1. Coordination of "reconstruction and rebuilding" of Kathmandu Valley

1.1. Collaborations and coordination with Reconstruction Authority for "rebuilding of Kathmandu Valley"

2. Development, Conservation and Management of Multipurpose open spaces in Kathmandu Valley

1.2. Identification and cadastral mapping of public land – Government (सरकारी), Public (पर्ती) Private (निजी), Guthi (गुठी) and Nepal Trust Gazetted Land

1.1. Publication of officially mapped sites at cadastral level in an "easy to understand" Open space Atlas of Kathmandu Valley

1.2. Prepare policy on how privately owned open spaces in denser areas can be utilized for public use in case of disaster

3. Establishment of hierarchy of Road Network (Proposed Kathmandu Valley – urban road standards could be basis for normal road width determination)

2.1. Mapping of existing road network

2.2. Alignment fixing for additional transport network

2.3. Determination of easement widths for future development of public transport system

2.4. Aligning of road networks with critical facilities such as hospitals, educational institutes and large congregation areas)

2.5. Identification and development of "multi-purpose public open spaces" for temporary shelters and aligning of road networks with the open spaces

2.6. Translating of the road network map into cadastral system

4. Risk Sensitive Land Use Plan (RSLUP) and zoning of possible building heights, permissible and restricted uses

3.1. Preparation and implementation of Risk Sensitive Land Use Plan (जोखिम संवेदनशील भू-उपयोग योजना)

3.2. Preparation of Zoning based on RSLUP

3.3. Risk Sensitive Land use Plan Validation and Micro-zonation

3.4. Coordinate with the JICA Team to immediately mobilize resources for Damage Assessment

3.5. Prepare a comprehensive map that includes Zoning and Transport system

3.6. Cadastral mapping of RSLUP zoning

5. Preparation of Planning/ Building By laws

4.1. To accommodate Pts. 1,2,3 mentioned above

4.2. FAR to be introduced only in Transit Oriented Development and Land Value Capture Zone

4.3. No more than 5 storey building with current material, skill, method and mindset

4.4. Combination of House and Land pooling to be piloted

6. Modification in present Land readjustment regulation and process (जग्गा विकास कार्यक्रम प्रक्रियामा संशोधन)

5.1. Facilitation of Large parcel of land assembly
5.2. Develop policies and incentive mechanisms to increase the percentage of Land contribution by owners (40-60%)
5.3. Develop policies to encourage cost contribution by public sector, Government of Nepal and others to infrastructure and for partial compensation of land
5.4. Develop a public/ social need based approach to balance the current situation of bottom up approach
5.5. Promotion of vertical living up to 5 storey
5.6. Develop stringent policies to promote building permission in group of plots (5 – 10 ropani) and prohibit individual building permission
5.7. To follow Regional Transport Master Plan for Land readjustment
5.8. Moratorium of land subdivision on areas identified for new planned development

7. Regeneration of 'agro-politan' Traditional Settlements: Learning from past for a sustainable future

Bhaktapur has benefitted well (US$ 190 Million direct return over 17 years by investment of US$ 1.6 million over 12 years in Conservation and Development.

6.1 Immediate damage mapping by Unmanned Aerial Vehicle (International offer Available)

8. Establishing Kathmandu ValleyIntegrated Information Center for better coordination and to avoid duplication of Resources

9.1. Establishment of Kathmandu Valley Integrated Information Center
9.2. Development of Land Information System in coordination and cooperation with Survey Dept. and Dept. of Land Information and Archive (DoLIA)
9.3. Development of Integrated Urban Information System for KV

9. Institutional and Capacity Building of KVDA for planning as well as implementation

Chapter Summary

Implementation of strategies requires metamorphosis of KVDA into the "centre of excellence" and a visionary authoritative agency to align different sectors/agencies functioning within KV to achieve the aspired goals. The six critical factors influencing and determining the implementation of 20 Years SDMP are:

1. Supportive Legislative and Legal Framework:

The new "Constitution of Nepal 2072", has made various provisions, which unequivocally enables KVDA, as an apex planning body for KV, to execute SDMP programs avoiding any legal contentions or disputations. The vision and mission of SDMP is aligned with the legislative clauses under the Fundamental Rights, which strengthens the importance of implementation of SDMP **"to establish Kathmandu Valley as a Safe, Clean, Organized, Prosperous and Elegant (SCOPE) National Capital".** Furthermore,the explicit provision for "environment protection, managed housing and urban development" in the constitution entails legal basis for KVDA and authorities to acquire/requisite necessary land for the implementation of SDMP.

The budgetary initiative by the government has given emphasis on urban development through strategic investment. The budget speech of 2071/72 has recognized KVDA as the main urban development partner for holistic development of Kathmandu Valley and any physical development inside Kathmandu Valley would require recommendation and consent from KVDA. The budget speech of F/Y 2072/73 has specifically emphasized Kathmandu Valley as the "National Capital City" and need for an integrated development, which will be implemented through program packages as identified by the SDMP.

The Government of Nepal has participated in many International Conventions and Conferences like Convention of Parties COP 21, UN Sustainable Development Summit, SENDAI Framework for the Disaster Risk Reduction 2015 – 2030, Habitat II and has made commitment to adopt the objectives of such programs in the development agenda. SDMP have taken due consideration of these international conventions and have addressed in its strategies through defining specific objectives and action plans.

2. Land Management and Reform: Articulating a move from 3D to 3C

KV has only 34.8% of constraint free area for further planned development that depicts land supply as a major issue with direct implications on development of urban infrastructure and services. Hence, accelerating Land Management through wider stakeholder participation is fundamental to achieve planned development. This necessitates to move from current situation of Kathmandu Valley's "Distant, Dispersed and Disconnected" [3D] pattern to "Compact, Connected and Coordinated" [3C] development, which is fundamental to achieving KVDA's mission. Hence, efficient usage of land, in the form of land pooling, land banking or efficient connectivity to transport are taken as crucial initiatives in SDMP in achieving the sustainable development goals. Special attention will also be given to land needed for major infrastructure planned in the KV such as Melamchi Water Supply, Fast Track Road Network and others, which will require considerable land areas for various infrastructures.

3. Institutional Re-structuring and Capacity Building

Institutional development and capacity building of KVDA is a pre-requisite for the successful and sustainable implementation of the SDMP. While both the Physical Development Committee and the Management Committee are proposed to remain unchanged, major restructuring has been made in the envisaged institutional set up of KVDA, which is essential to align KVDA's institutional framework with its functions proposed and to deliver the Strategic Plan, to continually monitor and evaluate outcomes and to update the Plan for the next cycle of major revision. As in the existing structure, the organizational structure would be headed by the Development Commissioner of KVDA and a Technical Advisory Group (TAG), consisting of 7 specialist professionals from the civil society, has been formed to advise the Development Commissioner in the preparation and implementation of the Development Plan and in development related decision making matters.

4. Financing SDMP

Implementation of SDMP and its programs will require significant financing from various sources. Calculation of the financial investments for KVDA demands about NRS 600 billion for development of minimum infrastructure, NRS 11 billion for development of open spaces and about NRS 90 billion for land banking in land pooling projects.

The three windows to generate resources for KVDA Reserve Fund are:

e. Grant: Grant from GoN is a major financial source for KVDA, which comes through annual budget allocation. The implementation of SDMP however requires a multi-year financial package. Similarly, grants from international, bilateral and multilateral agencies, mobilization of KVDA's own assets and issuance of development bond are other potential financial sources.
f. Loan is also a possible financing mechanism for funding participatory land pooling projects.
g. Other sources are Provision of tax collection from land transaction within KV Development Region, Tax collection on vehicle registration within KV, Tax from airport authority (for provision of built up restrictions and noise pollution), Polluters' Pay Principle Taxes.

5. Coordination and Collaboration

A "*Two levels of planning*" is required in which the local government would have a more proactive role in the development of local level plan and infrastructure development at micro level, the proactive role of KVDA is highly important to prepare and implement regional level land use plan and regulatory control measures along with data management and capacity building activities.

KVDA Act has exclusively mandated KVDA as a sole government authority, directly under the central government, to undertake and execute Integrated Development of Kathmandu Valley. Therefore, coordination must be done through and by the sole mandated agency KVDA by centralizing overlapping responsibilities and defining shared responsibilities. Integrated land use and transportation planning are inseparable and has been conceived accordingly by the SDMP. Therefore, along with the exclusive authority of the land, exclusive authority for development, maintenance and management of roads (excluding Strategic Road Network managed by the DoR) within the KV should be mandated to the KVDA.

6. Research and Innovative use of Technology

KVDA's vision to establish itself as a "Learning and Innovation Center" is a step towards embracing research and development as a backbone of informed decision-making. Any new plans, programs and implementations defined under the objectives of the SDMP seeks to undertake innovative research to design in details considering cross-cutting issues, coordination among the stakeholders and active participation of the civil society. Therefore, it requires any planning and its implementation to allocate provision of 5-10% of budget for research and innovation.

Functions and Responsibilities of the Proposed Organizational Structure

Functional Responsibilities of Technical Advisory Group (TAG) would include but not be limited to the following:

- Provide expert advice, information and make recommendations to the Management Committee for preparing the Development Plan of KVDA and suggest a feasible methodological framework for its implementation.

- Assist in reviewing alignment and integration of the Development Plan of KVDA to the achievement of its objectives; and make recommendations for improvement to ensure transparency and accountability
- Help enlist the involvement of experts from the civil society at grass root level for reforms in urban governance through Ward Committees and Voluntary Technical Corps in each cities within the Kathmandu Valley
- Report to the Management Committee on a regular basis providing its recommendations and advice on the on-going and future projects of KVDA

Functional Responsibilities of Secretariat of the Development Commissioner would include but not be limited to the following:

- Function as an executive support to the Development Commissioner
- Independently assess technical and institutional support needs, advise on proposed policies and program review through national and international expert teams before taking to Development Commissioner and Technical Advisory Group for finalization.
- Media control/ advice
- Communication advice, public relations, events, seminar, appointment
- Overall administration and management
- Monitoring and evaluation, Employees' performance planning and development, continuing professional development

The presently envisaged organization structure consists of 5 major Divisions under the leadership of the Development Commissioner of KVDA:

1. Division of Communication and Co-ordination
2. Division of Planning and Research
3. Division of Policies and Regulations
4. Division of Development and Execution
5. Division of Organizational Management

Functional Responsibilities of Division of Communication and Co-ordination would include but not be limited to the following:

- Co-ordinate with stakeholders / collaborative partners such as utility agencies, local municipalities and VDCs, NGOs/INGOs in relation to the formulation and implementation of related plans, programs, regulations, standards, guidelines, acts and policies.
- Co-ordinate as required with the related local bodies, government agencies, collaborators and other stakeholders to ensure the smooth enforcement and execution of the various plans, programs, policies, acts, regulations formulated in relation to the development of KV.
- Collect data/information of the strategic and operational concern from the various divisions and related stakeholders to create central repository of data/information management.
- Provide necessary data, information and feeds to the Division of Planning, Policies and Regulation and the Division of Development and Execution.
- Design and implement the communication and outreach programs among closely connected/internal and external stakeholders/ collaborative partners of KVDA, including private sector for the purpose of filling the gaps in information among the sources and intended destination of the same.
- Create co-ordination platform and manage the models of co-ordination and knowledge created thereby, with advisory groups.

- Co-ordinate and facilitate the process of strategic and tactical alliances, partnerships and collaborations with various agencies and bodies in accordance with the plans and programs.
- Handle the communications, outreach and knowledge/information management functions of KVDA and its divisions.
- Create and develop learning-innovation-application body and in order to develop common platform and opportunity of sharing information; internalize and institutionalize knowledge.

Functional Responsibilities of Division of Planning and Research would include but not be limited to the following:

- Formulation of long term, comprehensive planning, in order to execute and to advise Government agencies and related collaborators for overall and comprehensive development of KV remaining within the framework of long term development perspective.
- Study, analyze and research on the issues related to development initiatives in the context of KV along with relevant statutory, legal and regulatory provisions and thus utilize the inference to prepare plans and programs.
- Carry out all the preparatory tasks/functions to prepare Comprehensive Physical Development Plan of Kathmandu Valley.
- Map and keep track of variousinstitutional activities, plans and programs of various institutions related with the development of Kathmandu Valley.
- Create and develop Thematic Working Groups (WGs) to develop and undertake various cross-cutting researches, plans and programs of KVDA
- Create and develop advisory groups as required and integrate the advices solicited into the researches, development of plans and programs of KVDA.
- Integrate partnership models and private-sectors' initiatives, ownerships, participation in the overall development plans of KV development.
- Develop plans and programs that enhance Public-Private Academia partnership for research, program development and effective implementation of the same.
- Conduct impact study of various programs and executions carried by KVDA and related agencies on overall wellbeing and related factors of the population residing there.
- Carry out feasibility study of various plans, programs, developments, executions and systems under consideration for the overall development of KV.
- Develop plans and programs to enhance standards of basic needs of utilities supply system through participatory approach of households and private sectors.
- Review the status of plans and programs periodically, expedite their executions and form reports for feedback on the status of plans and programs for regular update and review.
- Establish a Learning, Innovation and Application Center as a common platform for learning, experience sharing and information dissemination related to the development of Kathmandu Valley
- Establish a specialized Geographical Information System and Information Communication Technology (GIS-ICT) Section/Unit to develop comprehensive spatial information system, to support for spatial planning and informed decision making for KV.
- Establish KV-Integrated Information Center (Data Center)

Functional Responsibilities of Division of Policies and Regulations would include but not be limited to the following:

- Develop regulations, standards, guidelines and monitoring mechanisms for the utilities and related infrastructure's quality, protection of its sources, its sustainable use, treatments, maintenance and strengthening its supply system through participatory approach.

- Develop and formulate urban standards and regulations, guidelines, review existing bye laws, acts and regulations as per the spirit of guiding principles of KVDA
- Develop and formulate specific policies, regulations, guidelines in relation to Kathmandu Valley
- Prepare and validate the "Colored Development Zones" based on the availability of land considering development constraints, multi-hazard risk sensitivity, carrying capacity and future projection for year 2035 and enforce Risk Sensitive Land Use Plan on its basis in congruency with related policies and regulations.
- Monitor the compliance of the present rules, regulations, policies, standards and acts in relation to the overall development of the KV and provide feedback for its better implementation, review and periodic update.
- Issue permits for the execution of various Land Use, tax based incentives/disincentives mechanism as a base for land use plan implementation, demarcation of urban and agricultural land, land fragmentation, minimum plot size, building design and codes, permit processes, land development, subsidies in land pooling, subsidized credit for planned urbanization, land valuation, land prices, infrastructure standards, threshold for land use control, development and use of urban infrastructure and services, integrated urban services centers (IUCS), use of utility systems etc. as per the related plans, programs, policies and regulations.
- Review the status of policies and regulations formulated by KVDA and various government agencies and collaborators in relation to the comprehensive development plan of KV periodically, expedite their executions and form reports for feedback on the status of policies and regulations for regular update and review of the same.
- Check and investigate on the compliance of the regulations and standards within Kathmandu Valley and take/implement corrective action in the field.

Functional Responsibilities of Division of Development and Execution would include but not be limited to the following:

- Execute all the plans and programs of KVDA at the field level in close co-ordination with the related and responsible collaborative agencies.
- Prepare, collect and develop necessary information database of urban infrastructure and land information system of Kathmandu Valley.
- Carry out the plans and programs formulated by KVDA in close co-ordination with the related stakeholders and collaborative partners.
- Develop digital addressing system for all municipalities, VDCs and related organizations.
- Execute the development of new urban structures within Kathmandu Valley as envisioned by SDMP (2015-2035) in accordance with the specific land use zoning and building bye laws.
- Prepare capacity building plans and programs with participatory approach for institutions and related stakeholders.

Functional Responsibilities of Division of Organizational Management would include but not be limited to the following:

- Develop monitoring and evaluation mechanism to assess the level of co-ordination among various functions of the related divisions and collaborative partners.
- Create functional policies and manuals of operating procedures for various divisions and departments.
- Conduct all the administrative and human resource management functions.
- Manage finance and accounts functions.

- Render effective legal assistance in the preparation of legal opinions, studies, reports and correspondence, as required by various divisions.
- Ensure the provisioning of appropriate legal advice on a diverse range of substantive and procedural questions of law arising in administrative functioning.
- Supervise and oversee the review, negotiation and drafting of major contracts, tender documents and other legal documents, as required by the divisions.
- Supervising legal research and analysis, identifying important issues and apprising the operational departments of emerging legal trends from court decision and tendering advice to avoid unnecessary litigation, etc.
- Serving on various Standing Boards, Committees and task force, as required, to take care of legal information in framing of policies.
- Monitor the performance of panel lawyers and advise on formation of new panels.
- Assign court cases to panel lawyers while considering the nature and importance of the cases.
- Advise in the matter of preferring of appeals in superior courts and in the matter of taking recourse to other legal remedies.
- Assist the divisions of KVDA to respond to legal notices received.
- Manage human resource functions

Functional Responsibilities of Department of Disaster Risk Management Services would include but not be limited to the following:

- Conduct hazard, risk assessments and all other preparatory analysis works and along with evaluation on the lives of people, infrastructures and the buildings due to disasters and hazards and thus disaster risk management plans.
- Implement pilot activities of the various plans and programs designed for the safety of lives, infrastructures and life-based systems within Kathmandu valley.
- Provide capacity building programs to generate workforce for disaster mitigation and demolition
- Coordinate with major stakeholders and technical experts to provide Disaster Management Services in case of emergency
- Develop a team of experts to address disaster management needs and for building demolition
- Coordinate with related organizations to meet emergency purchasing/rental needs.
- Advise and provide technical resources on disaster risk management services.
- Develop building demolition activity as an integral part of the Disaster Management Services that provides safety, security, documentation, legislation, destruction of the structure, segregation and recycling the debris, proper transportation, proper disposal and proper platform for reconstruction at the site.
- Explore/study and analyze the practices applied for building demolition in similar environment in other countries to prepare building demolition guidelines
- Prepare disaster risk management guidelines for 4 primary phases: preparation, mitigation, response, and recovery; and

Functional Responsibilities of Department of GIS-ICT Services would include but not be limited to the following:

- Develop, regular update and disseminate GIS based information of KV pertaining to various themes (in compliance/accordance with Integrated Urban Information System and Local Level Spatial Data Infrastructure)
- Analyze data, develop models, prepare maps and decision support system tools for informed decision making in all levels of KVDA
- Develop ICT tools (such as web-portal, mobile application etc.) and mechanisms for encouraging and enabling participatory planning to the stakeholders and civil society.
- Undertake research and development to initiate "Smart City" concept in KV in collaboration with other KV departments, related GoN entities, private sector and international initiatives.

Functional Responsibilities of Department of Land Use Services would include but not be limited to the following:

- With the support of GIS-ICT Department, develop cadastral level multi-purpose land use information in collaboration with Dept. of Survey and Dept. of Land Information and Archive
- Undertake land use zonings based on the RSLUP colour zones and National Land Use Policy 2072.
- Develop comprehensive mechanism and implementation framework win coordination with Communication and Outreach Department for sensitization and education of RSLUP through public dialogue and public forums to facilitate implementation of RSLUP zoning at the land parcel level.
- Coordination and collaborations with multi-stakeholders and civil society for implementing participatory land use zonings at the land parcel level.
- Develop and pilot various mechanisms and modality under RSLUP implementation tools to support RSLUP land use zoning at land parcel levels.

Functional Responsibilities of Department of Climate Change and Urban Resilience would include but not be limited to the following:

- Support in planning disaster and climate resilient urban infrastructures.
- Develop KV and municipal level urban strategies to build societies' and communities' resilience to the effects of disaster and climate change
- Support and coordinate with development authorities and line agencies to integrate disaster and climate resilient mechanisms in the physical development of KV
- Develop and implement programs to enhance the capacities of stakeholders for disaster and climate resilience
- Coordinate and collaborate with national, international and development partners to enhance the resilience of KV towards disaster and climate change

8. REFERENCES

(1876). Retrieved Jan 21, 2015, from http://nepalitimes.com/article/nation/political-will-for-public-transport-needed

ADB. (2006). *Technical assistance report: Preparing the Kathmandu Valley water distribution, sewrage and urban development project.* Asian Development Bank.

Adhikari, N. (2012). Air pollution and human health in Kathmandu valley. *Public Health Perspective Nepal , 2* (5).

CANN/ CEN & UN-Habitat. (2014b, March). Air Quality Status and Management in Kathmandu Valley: Make the City Air Breathable. *MaYA Fact Sheet # 5* .

CANN/ CEN & UN-HABITAT. (2014a, March). Public Transportation in Kathmandu Valley: Restructuring and Reforming the System. *MaYA Fact Sheet #4* .

CBS. (2004). *National Living Standards Survey.* Kathmandu: Central Bureau of Statistics. Government of Nepal.

CBS. (2010). *National Living Standards Survey.* Kathmandu: Central Bureau of Statistics. Government of Nepal.

CBS Nepal. (2012). *National Population and Housing Census 2011 (National Report).* Government of Nepal: National Planning Commission Secretariat.

CBS. (2008). *Report on the Labor Force Survey.* Government of Nepal: Central Bureau of Statistics, National Planning Commission Secretariat.

Davis, A., Bergh, Lundy, G. d., & Amanda. (2014). *Young people's engagement in strengthening accountability for the post-2015 agenda.* London : Overseas Development Institute.

Diesel generator emissions making Valley air more toxic. (2015, July 18). *The Himalayan Times* .

Fang, S., Gertner, G. Z., Sun, Z., & Anderson, A. A. (2005). The impact of interactions in spatial simulation of the dynamics of urban sprawl. *Landscape and urban planning , 73* (4), 294-306.

Fang, S., Gertner, G., & Sun, Z. &. (2005). The impact of interactions in spatial simulation of the dynamics of urban sprawl. *73* (4), 294-306.

Geoghegan, J. (2002). The value of open spaces in residential land use. *Land Use Policy , 19* (1), 91-98.

GEOHAVE. (2015). *Globle Population Statistics* . Retrieved August 30, 2015, from http://www.geohive.com/default.aspx

GoN. (1999). *Environmental Planning and Management of the Kathmandu Valley.* Kathmandu: Ministry of Population and ENvironment; International Union for Conservation of Nature (IUCN).

GTZ. (1997). *Images of the century, The changing townscapes of the Kathmandu valley.* Kathmandu: UDLE.

Gutschow, N., & Kreutzmann, H. (2013). *Mapping the Kathmandu Valley with Aerial Photographs by Erwin Schneider.* Kathmandu: Himal Books.

Haack, B. N., & Rafter, A. (2006). Urban growth analysis and modeling in the Kathmandu Valley, Nepal. *Habitat International , 30* (4), 1056-1065.

INECO, PRONTEC & ERMC Pvt. Ltd. (2012). *Capacity Development of Civil Aviation Authority of Nepal: Air Traffic Demand Forecast Draft.*

Jimee, G. K., Dixit, A. M., Tandingan, M., & Sharma, S. (2015). Strategy for Developing Professional Emergency Responders in Nepal. *USMCA2015* (p. 8). Kathmandu: NSET.

INECO, PRONTEC & ERMC Pvt. Ltd. (2012). *Capacity Development of Civil Aviation Authority of Nepal: Air Traffic Demand Forecast Draft.*

JICA. (2012). *Data Collection Survey on Traffic Improvement in Kathmandu Valley.* Kathmandu.

Kshirsagar, J. B. (2013). *Land Pooling Policy of Delhi Developing Authority.* Delhi Development Authority.

KVDA. (2013). *Feasibility Study of Integrated Urban Service Centre (IUSC) of Kathmandu District, Kalimati-Kalanki Area.*

KVDA. (2013). *Multi-Hazard Risk Assessment in Kathmandu Valley.* Kathmandu: Kathmandu Valley Development Authority.

KVDA. (2013). *Urban Growth Pattern in Kathmandu Valley.* Kathmandu: Kathmandu Valley Development Authority.

Li, J., Liu, Q., & Sang, Y. (2012). Several Issues about Urbanization and Urban Safety. *Procedia Engineering , 43*, 615-621.

(2014). *Livable Kathmandu.*

Lumanti. (2002). *Background and Case Study of Settlement and Slum Improvements in Nepal: The Role of the Urban Poor in Kathmandu.*

Malla, U.B. (2014). *Housing for the Lower Income Groups in Kathmandu Valley: Policy, Guidelines and Program.* Kathmandu Valley Development Authority

Manandhar, R. (2002). *Private Sector Participation in Solid Waste Management in Kathmandu, Directory: Successful and transferable practice.* Kitakyushu Initiative Network.

MoEST. (2007). *Kathmandu Valley Environment Outlook.* Kathmandu: International Centre for Integrated Mountain Development (ICIMOD).

MoHA. (2013). *Nepal Disaster Report.* Government of Nepal.

MoLE. (2013/2014). *Labour Migration For Employment.* Kathmandu: GoN.

MoUD. (2015). *National Urban Development Strategy (NUDS).* GoN.

MoUD. (2013). *Planning Norms and Standards.* Nepal: Department of Urban Development and Building Construction.

MoYS. (2015). *National Youth Policy 2072.* Kathamndu: GoN.

myrepublica. (n.d.). Retrieved Jan 22, 2015, from http://www.myrepublica.com/portal/index.php/ads/ads/rss.php?action=news_details&news_id=80373#sthash.lqe5R7Vw.dpuf

(2004). *National Living Standards Survey.* GoN: Central Bureau of Statistics.

(2010). *National Living Standards Survey.* GoN: Central Bureau of Statistics.

NIDCL. (2014, June 24). Nepal Infrastructure Development Company Limited. Retrieved September 2, 2015, from About kathmandu-Kulekhani-Hetauda Tunnel (KKHT) Highway: http://npbcl.com/kkht.php

Neupane, K. (2015). Public Assets Creation. In *Commitment - Kathmandu Valley Development: Reflections and Revelations.* KVDA.

NPC. (2014). *Nepal Human Development Report.* Kathmandu: National Planning Commission and UNDP.

NPCS. (2012). National Population and Housing Census 2011. Kathmandu: GoN.

NRB. (2012). *Survey Report on Share of Kathmandu Valley in the National Economy.* Kathmandu: Nepal Rastra Bank.

Pant, P., & Dangol, D. (2009). *Kathmandu Valley Profile.* Kathmandu: Kathmandu Metropolitan City.

Pradhan, P. (2008). *Study on Status of Unemployed Slum Youth and their Possible Linkages with Job Market in Greater Kathmandu .* Kathmandu.

Prasai, T., Joshi, D. R., & Baral, M. B. (2007). Microbiological Analysis of Drinking Water of Kathmandu Valley. *Scientific World , 5*.

Priyanto, A. T. (2010). *The impact of human activities on coastal zones and strategies towards sustainable development: A case study in Pekalongan, Indonesia.* Enschede: University of Twente, Faculty of Geo-information and Earth observation.

Pruscha, C. (1969). *The physical Development Plan of Kathmandu Valley.* Department of Housing and Physical Planning, Nepal.

Republica. (2015, Feb 16). Telephone penetration climbs to 97.65 percent. *my Republica* .

Sanyal, B., & Deuskar, C. (2012). Town Planning as a Hybrid Land Readjustment Process in Ahmedabad, India. In *Value Capture and Land Policies.* Cambridge, MA: Lincoln Institute of Land Policy.
Sawers, L. (1989). Urban Primacy in Taanianz. *Economic Development and Cultural Change* , 841-859.

Sawers, L. (1989). Urban Primacy in Taanianz. *Economic Development and Cultural Change* , 841-859.

SCAEF. (2006). Prospects and constraints of public private partnership for urban waste management. *Policy Paper 15, SCAEF, Economic Policy Network.* Kathmandu,Nepal: Asian Development Bank.

Shrestha, M. N. *Institutional Reform of Kathmandu Valley Water Supply &Sanitation Service.* KUKL.

Techsansar. (2014, Jan 22). All telecom companies in Nepal to be Public – NTA Cross Holding Study Reports. *Techsansar* .

Telecommunications & Urban Development. (n.d.). Retrieved Aug 7, 2015, from http://regency.org/t_in_act/pdf/english/urban.pdf

Thapa, R. B., & Murayama, Y. (2012). cenario based urban growth allocation in Kathmandu Valley, Nepal. *Landscape and Urban Planning , 105* (1-2), 140-148.

Thapa, R. B., & Murayama, Y. (2010). Drivers of urban growth in the Kathmandu Valley, Nepal: Examining the efficacy of the analytic hierarchy process. *Applied Geography , 30* (1), 70-83.

Thapa, R. B., & Murayama, Y. (2011). Urban growth modeling of Kathmandu metropolitan region, Nepal. *Computers, Environment and Urban Systems , 35* (1), 25-34.

The Himalayan Times. (2015, August 25). Retrieved September 2, 2015, from Petroleum Pipeline Pact Signed: http://thehimalayantimes.com/business/petroleum-pipeline-pact-signed/

Tiffon, G. (2010). Urban Fringe: Squatters and Slum Settlements in Kathmandu Valley. *Contribution to Nepalese Studies , 37* (2), 151-168.

UN-Habitat. (2007). *Enhancing Urban Safety and Security: Global Report on Human Settlements.* London, Steling VA: United Nations Human Settlements Programme.

UN-Habitat. (2015). *Kathmandu Valley, Nepal- Climate Change Vulnerability Assessment.* Nairobi: United Nations Human Settlements Programme.

UN-Habitat. (2013). *State of the World's Cities 2012-2013.* Nairobi: UN-Habitat.

Verburg, P. H., Van Eck, J. R., de Nijs, T. C., Dijst, M. J., & Schot, P. (2004). Determinants of land-use change patterns in the Netherlands. *Environment and Planning B: Planning and Design , 31* (1), 125-150.

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ANNEXES

Annex1: Multi Criteria Analysis

Annex 2: Population Projection of Municipalities And VDCs

Annex 3: Constraints Analysis

Annex 4: List of identified projects through stakeholders' meetings

Annex 5: List of Consultative Meetings for SDMP 2015-2035

Annex 6: Review of SDMP by World Bank Team

Annex 7: Monitoring and Evaluating Framework of Action Plans

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MULTI CRITERIA ANALYSIS **Annex - 1.0**

SITUATION 2011 (ACTUAL)

Ref_No	Wards_Municipality & VDCs	Total Area (Ha)	Agriculture + Residential	2011				Category				Cum total	Percentile	Net Category
				Growth	Population	P_Density	R_Density	Growth	Population	P_Density	R_Density			
16	16_KMC	411	392	6.7%	84,441	215	20	D	A	G	F	280	88%	E
122	Jorpati	482	448	7.2%	84,567	189	17	D	A	G	F	280	88%	E
35	35_KMC	434	417	8.1%	76,299	183	16	C	B	G	F	280	88%	E
119	Gongabu	236	220	10.1%	54,410	248	18	B	D	G	F	260	81%	E
123	Kapan	465	406	12.5%	48,463	119	14	A	D	G	G	260	81%	E
34	34_KMC	233	227	3.9%	66,121	292	18	E	C	F	F	240	75%	F
14	14_KMC	320	311	5.5%	58,495	188	18	D	C	G	F	240	75%	F
21	21_KMC	13	13	1.0%	13,727	1,044	17	F	G	A	F	240	75%	F
17	17_KMC	36	35	2.6%	25,926	744	16	E	F	C	F	240	75%	F
126	Manmaiju	305	273	13.6%	40,416	148	13	A	E	G	G	240	75%	F
84	10_Kirtipur Municipality	2	2	6.4%	1,934	872	10	D	G	B	G	240	75%	F
7	7_KMC	154	150	3.4%	51,581	344	22	E	D	F	F	220	69%	F
6	6_KMC	339	331	4.6%	60,344	182	21	E	C	G	F	220	69%	F
19	19_KMC	13	13	4.4%	10,711	826	20	E	G	C	F	220	69%	F
115	Dhapasi	204	196	10.7%	31,406	160	20	B	F	G	F	220	69%	F
29	29_KMC	194	183	6.2%	45,052	247	19	D	D	G	F	220	69%	F
4	4_KMC	286	276	5.0%	47,362	172	19	D	D	G	F	220	69%	F
66	9_Bhaktapur Municipality	2	2	-1.5%	2,071	1,014	18	G	G	A	F	220	69%	F
10	10_KMC	157	154	5.2%	39,820	259	18	D	E	F	F	220	69%	F
28	28_KMC	5	5	0.4%	5,611	1,181	13	F	G	A	G	220	69%	F
32	32_KMC	130	129	3.7%	33,316	259	21	E	E	F	F	200	63%	F
76	2_Kirtipur Municipality	55	49	11.3%	6,728	137	20	B	G	G	F	200	63%	F
15	15_KMC	292	266	4.8%	54,476	205	19	E	D	G	F	200	63%	F
56	21_LSMC	7	6	0.9%	4,659	734	18	F	G	C	F	200	63%	F
18	18_KMC	20	19	2.9%	10,746	552	16	E	G	D	F	200	63%	F
125	Mahankal	410	400	10.3%	17,997	45	16	B	G	G	F	200	63%	F
20	20_KMC	16	15	2.5%	10,968	735	14	E	G	C	G	200	63%	F
142	Imadol	402	388	11.2%	27,327	71	13	B	F	G	G	200	63%	F
120	Gothatar	461	401	12.5%	26,169	65	12	B	F	G	G	200	63%	F
121	Ichangu Narayan	1,180	400	12.1%	24,425	61	6	B	F	G	G	200	63%	F
78	4_Kirtipur Municipality	5	5	2.8%	2,396	459	23	E	G	E	F	180	56%	F
75	1_Kirtipur Municipality	45	43	9.3%	6,708	156	21	C	G	G	F	180	56%	F
13	13_KMC	214	212	3.3%	40,456	191	19	E	E	G	F	180	56%	F
108	15_Madhyapur Thimi Municipality	126	125	9.4%	18,336	147	16	C	G	G	F	180	56%	F
9	9_KMC	376	349	4.1%	40,371	116	16	E	E	G	F	180	56%	F

MULTI CRITERIA ANALYSIS **Annex - 1.0**

SITUATION 2011 (ACTUAL)

Ref_No	Wards_Municipality & VDCs	Total Area (Ha)	Agriculture + Residential	2011				Category				Cum total	Percentile	Net Category
				Growth	Population	P_Density	R_Density	Growth	Population	P_Density	R_Density			
3	3_KMC	320	302	6.1%	34,866	116	15	D	E	G	G	180	56%	F
109	16_Madhyapur Thimi Municipality	86	79	12.0%	14,260	180	14	B	G	G	G	180	56%	F
145	Sainbu Bhaisepati	412	396	10.0%	19,721	50	11	B	G	G	G	180	56%	F
27	27_KMC	8	8	-0.1%	7,592	942	11	G	G	B	G	180	56%	F
154	Katunje	433	374	11.3%	19,497	52	9	B	G	G	G	180	56%	F
207	Sipadol	811	556	10.7%	9,876	18	6	B	G	G	G	180	56%	F
205	Nagarkot	947	589	10.0%	4,571	8	3	B	G	G	G	180	56%	F
26	26_KMC	8	8	0.6%	4,133	502	23	F	G	E	F	160	50%	G
55	20_LSMC	16	16	1.8%	7,721	488	19	F	G	E	F	160	50%	G
33	33_KMC	92	90	2.3%	25,694	286	18	F	F	F	F	160	50%	G
59	2_Bhaktapur Municipality	67	65	5.9%	6,694	103	18	D	G	G	F	160	50%	G
47	12_LSMC	13	13	0.5%	5,891	463	16	F	G	E	F	160	50%	G
92	18_Kirtipur Municipality	34	34	7.4%	4,661	137	16	D	G	G	F	160	50%	G
43	8_LSMC	48	46	4.7%	11,400	250	15	E	G	F	F	160	50%	G
49	14_LSMC	172	161	6.3%	21,232	132	14	D	F	G	G	160	50%	G
96	3_Madhyapur Thimi Municipality	143	135	8.6%	6,364	47	14	C	G	G	G	160	50%	G
48	13_LSMC	75	73	8.3%	14,867	205	14	C	G	G	G	160	50%	G
23	23_KMC	12	12	-0.2%	8,357	713	14	G	G	C	G	160	50%	G
184	Tokha Saraswati	193	180	8.0%	5,152	29	12	C	G	G	G	160	50%	G
110	17_Madhyapur Thimi Municipality	266	249	9.0%	9,880	40	12	C	G	G	G	160	50%	G
127	Mulpani	386	343	7.6%	11,742	34	9	C	G	G	G	160	50%	G
155	Sirutar	137	134	8.4%	4,790	36	8	C	G	G	G	160	50%	G
118	Goldhunga	515	463	8.8%	16,174	35	8	C	G	G	G	160	50%	G
172	Mahadevsthan	702	321	7.7%	15,514	48	6	C	G	G	G	160	50%	G
153	Jhaukhel	522	509	8.0%	7,721	15	6	C	G	G	G	160	50%	G
160	Chapali Bhadrakali	627	230	9.6%	10,827	47	5	C	G	G	G	160	50%	G
208	Sudal	732	637	7.6%	7,254	11	5	C	G	G	G	160	50%	G
60	3_Bhaktapur Municipality	22	21	0.3%	3,427	160	27	F	G	G	E	140	44%	G
51	16_LSMC	8	8	-2.3%	4,362	542	25	G	G	E	F	140	44%	G
101	8_Madhyapur Thimi Municipality	11	11	1.4%	2,835	252	24	F	G	F	F	140	44%	G
102	9_Madhyapur Thimi Municipality	49	49	3.9%	2,250	46	23	E	G	G	F	140	44%	G
53	18_LSMC	14	14	-1.9%	5,777	407	22	G	G	E	F	140	44%	G
107	14_Madhyapur Thimi Municipality	11	10	1.9%	2,653	264	20	F	G	F	F	140	44%	G
5	5_KMC	71	69	1.9%	18,320	265	18	F	G	F	F	140	44%	G
41	6_LSMC	24	24	0.8%	6,780	280	17	F	G	F	F	140	44%	G

MULTI CRITERIA ANALYSIS **Annex - 1.0**

SITUATION 2011 (ACTUAL)

Ref_No	Wards_Municipality & VDCs	Total Area (Ha)	Agriculture + Residential	2011				Category				Cum total	Percentile	Net Category
				Growth	Population	P_Density	R_Density	Growth	Population	P_Density	R_Density			
25	25_KMC	12	12	1.1%	3,486	298	17	F	G	F	F	140	44%	G
24	24_KMC	8	8	-4.1%	3,488	453	16	G	G	E	F	140	44%	G
138	Tinthana	129	128	5.0%	9,726	76	16	E	G	G	F	140	44%	G
42	7_LSMC	21	21	1.7%	7,849	376	15	F	G	F	F	140	44%	G
31	31_KMC	94	63	1.4%	16,211	258	15	F	G	F	F	140	44%	G
133	Satungal	233	233	6.2%	10,452	45	15	D	G	G	G	140	44%	G
44	9_LSMC	77	71	5.0%	13,908	195	14	D	G	G	G	140	44%	G
128	Naikap Naya Bhanjyang	125	124	6.4%	7,944	64	13	D	G	G	G	140	44%	G
134	Sitapaila	351	327	6.3%	17,909	55	13	D	G	G	G	140	44%	G
37	2_LSMC	111	105	6.5%	19,061	181	13	D	G	G	G	140	44%	G
79	5_Kirtipur Municipality	13	13	4.4%	3,439	274	12	E	G	F	G	140	44%	G
124	Khadka Bhadrakali	239	211	7.1%	10,761	51	12	D	G	G	G	140	44%	G
77	3_Kirtipur Municipality	152	116	5.7%	7,343	63	12	D	G	G	G	140	44%	G
85	11_Kirtipur Municipality	64	64	5.7%	3,681	58	11	D	G	G	G	140	44%	G
46	11_LSMC	10	10	0.6%	4,458	444	11	F	G	E	G	140	44%	G
149	Balkot	284	278	7.2%	15,881	57	11	D	G	G	G	140	44%	G
54	19_LSMC	16	16	2.0%	7,385	455	11	F	G	E	G	140	44%	G
74	17_Bhaktapur Municipality	159	140	5.1%	9,901	71	11	D	G	G	G	140	44%	G
140	Dhapakhel	367	343	7.3%	12,678	37	10	D	G	G	G	140	44%	G
86	12_Kirtipur Municipality	64	64	5.5%	3,077	48	10	D	G	G	G	140	44%	G
98	5_Madhyapur Thimi Municipality	37	36	5.9%	3,189	89	10	D	G	G	G	140	44%	G
90	16_Kirtipur Municipality	98	98	5.2%	2,510	26	10	D	G	G	G	140	44%	G
141	Harisiddhi	310	305	6.1%	10,736	35	9	D	G	G	G	140	44%	G
61	4_Bhaktapur Municipality	143	142	5.7%	11,011	77	9	D	G	G	G	140	44%	G
148	Tikathali	301	295	7.4%	10,136	34	9	D	G	G	G	140	44%	G
112	Balambu	212	205	5.3%	7,323	36	9	D	G	G	G	140	44%	G
135	Syuchatar	274	229	7.2%	13,412	58	9	D	G	G	G	140	44%	G
146	Sunakothi	302	291	5.0%	10,092	35	8	D	G	G	G	140	44%	G
152	Duwakot	630	595	5.9%	10,461	18	6	D	G	G	G	140	44%	G
173	Matatirtha	620	262	5.6%	5,982	23	6	D	G	G	G	140	44%	G
117	Gokarneshwar	469	257	5.8%	7,508	29	6	D	G	G	G	140	44%	G
209	Tathali	870	761	7.3%	5,698	7	5	D	G	G	G	140	44%	G
206	Nangkhel	680	391	5.6%	5,509	14	4	D	G	G	G	140	44%	G
103	10_Madhyapur Thimi Municipality	10	10	-0.3%	1,877	183	30	G	G	G	E	120	38%	G
57	22_LSMC	45	42	1.8%	10,109	242	21	F	G	G	F	120	38%	G

MULTI CRITERIA ANALYSIS **Annex - 1.0**

SITUATION 2011 (ACTUAL)

Ref_No	Wards_Municipality & VDCs	Total Area (Ha)	Agriculture + Residential	2011				Category				Cum total	Percentile	Net Category
				Growth	Population	P_Density	R_Density	Growth	Population	P_Density	R_Density			
65	8_Bhaktapur Municipality	11	11	-1.3%	3,138	296	21	G	G	F	F	120	38%	G
71	14_Bhaktapur Municipality	13	13	-1.3%	4,466	336	19	G	G	F	F	120	38%	G
106	13_Madhyapur Thimi Municipality	38	38	1.8%	3,794	100	18	F	G	G	F	120	38%	G
22	22_KMC	29	28	0.0%	5,699	203	18	F	G	G	F	120	38%	G
30	30_KMC	23	23	-1.4%	8,563	379	18	G	G	F	F	120	38%	G
83	9_Kirtipur Municipality	20	20	1.0%	2,272	111	18	F	G	G	F	120	38%	G
97	4_Madhyapur Thimi Municipality	21	21	0.8%	1,945	93	17	F	G	G	F	120	38%	G
91	17_Kirtipur Municipality	78	78	4.7%	5,732	74	14	E	G	G	G	120	38%	G
45	10_LSMC	76	66	3.1%	6,554	99	14	E	G	G	G	120	38%	G
52	17_LSMC	60	59	4.6%	10,644	179	14	E	G	G	G	120	38%	G
50	15_LSMC	228	227	2.6%	13,858	61	14	E	G	G	G	120	38%	G
39	4_LSMC	204	184	4.3%	15,367	84	13	E	G	G	G	120	38%	G
12	12_KMC	49	46	2.3%	13,262	288	13	F	G	F	G	120	38%	G
8	8_KMC	181	98	3.7%	10,738	109	13	E	G	G	G	120	38%	G
1	1_KMC	137	134	5.0%	8,008	60	11	E	G	G	G	120	38%	G
116	Dharmasthali	186	152	3.6%	6,530	43	9	E	G	G	G	120	38%	G
200	Thaiba	234	225	3.0%	8,261	37	9	E	G	G	G	120	38%	G
100	7_Madhyapur Thimi Municipality	66	65	4.7%	4,388	67	8	E	G	G	G	120	38%	G
129	Naikap Purano Bhanjyang	174	162	2.7%	4,546	28	8	E	G	G	G	120	38%	G
144	Lubhu	640	531	3.2%	10,374	20	7	E	G	G	G	120	38%	G
176	Phutung	142	118	4.7%	4,792	40	7	E	G	G	G	120	38%	G
136	Thali Danchhi	499	446	4.4%	11,246	25	7	E	G	G	G	120	38%	G
70	13_Bhaktapur Municipality	5	5	-1.6%	2,225	452	6	G	G	E	G	120	38%	G
151	Dadhikot	650	534	4.9%	11,629	22	6	E	G	G	G	120	38%	G
137	Thankot	615	318	3.8%	12,047	38	6	E	G	G	G	120	38%	G
177	Ramkot	579	414	3.1%	8,759	21	6	E	G	G	G	120	38%	G
175	Nayapati	670	454	3.5%	7,257	16	5	E	G	G	G	120	38%	G
188	Chapagaun	727	538	2.5%	16,420	31	5	E	G	G	G	120	38%	G
81	7_Kirtipur Municipality	151	74	3.7%	2,877	39	5	E	G	G	G	120	38%	G
114	Budhanilkantha	1,398	489	4.5%	15,421	32	5	E	G	G	G	120	38%	G
169	Kabhresthali	854	485	3.5%	4,774	10	4	E	G	G	G	120	38%	G
171	Machhegaun	466	185	3.5%	3,849	21	4	E	G	G	G	120	38%	G
157	Baluwa	701	439	2.9%	5,467	12	4	E	G	G	G	120	38%	G
180	Sheshnarayan	511	167	2.8%	3,855	23	3	E	G	G	G	120	38%	G
194	Godawari	1,647	298	2.9%	7,558	25	2	E	G	G	G	120	38%	G

MULTI CRITERIA ANALYSIS **Annex - 1.0**

SITUATION 2011 (ACTUAL)

Ref_No	Wards_Municipality & VDCs	Total Area (Ha)	Agriculture + Residential	2011				Category				Cum total	Percentile	Net Category
				Growth	Population	P_Density	R_Density	Growth	Population	P_Density	R_Density			
58	1_Bhaktapur Municipality	31	31	-1.6%	4,805	154	19	G	G	G	F	100	31%	G
2	2_KMC	84	84	-0.1%	13,448	161	17	G	G	G	F	100	31%	G
68	11_Bhaktapur Municipality	16	16	-0.8%	3,287	206	16	G	G	G	F	100	31%	G
105	12_Madhyapur Thimi Municipality	19	18	-0.4%	2,120	121	16	G	G	G	F	100	31%	G
104	11_Madhyapur Thimi Municipality	16	14	0.6%	2,413	168	15	F	G	G	G	100	31%	G
63	6_Bhaktapur Municipality	17	13	0.1%	3,126	236	14	F	G	G	G	100	31%	G
80	6_Kirtipur Municipality	17	17	2.2%	1,681	101	14	F	G	G	G	100	31%	G
11	11_KMC	174	153	1.5%	17,765	116	14	F	G	G	G	100	31%	G
38	3_LSMC	165	158	2.2%	14,082	89	13	F	G	G	G	100	31%	G
40	5_LSMC	76	76	1.0%	6,404	84	13	F	G	G	G	100	31%	G
64	7_Bhaktapur Municipality	17	17	-0.9%	4,437	265	13	G	G	F	G	100	31%	G
36	1_LSMC	48	45	1.9%	8,434	188	12	F	G	G	G	100	31%	G
67	10_Bhaktapur Municipality	25	25	2.4%	4,509	178	12	F	G	G	G	100	31%	G
62	5_Bhaktapur Municipality	29	29	1.3%	5,141	176	11	F	G	G	G	100	31%	G
88	14_Kirtipur Municipality	118	67	0.1%	2,129	32	9	F	G	G	G	100	31%	G
147	Thecho	325	305	2.2%	10,086	33	9	F	G	G	G	100	31%	G
94	1_Madhyapur Thimi Municipality	49	44	1.9%	3,054	70	9	F	G	G	G	100	31%	G
93	19_Kirtipur Municipality	84	84	2.4%	985	12	8	F	G	G	G	100	31%	G
73	16_Bhaktapur Municipality	17	17	0.3%	3,684	217	8	F	G	G	G	100	31%	G
72	15_Bhaktapur Municipality	65	64	1.6%	6,044	94	7	F	G	G	G	100	31%	G
193	Godamchaur	312	245	1.5%	4,914	20	7	F	G	G	G	100	31%	G
199	Siddhipur	201	200	1.0%	6,147	31	7	F	G	G	G	100	31%	G
111	Aalapot	147	140	1.3%	3,159	23	7	F	G	G	G	100	31%	G
99	6_Madhyapur Thimi Municipality	82	74	1.6%	1,649	22	6	F	G	G	G	100	31%	G
166	Indrayani	276	254	1.7%	3,361	13	6	F	G	G	G	100	31%	G
89	15_Kirtipur Municipality	285	278	1.5%	3,767	14	6	F	G	G	G	100	31%	G
162	Chunikhel	359	263	1.4%	4,449	17	6	F	G	G	G	100	31%	G
113	Bhadrabas	167	152	1.4%	2,388	16	5	F	G	G	G	100	31%	G
82	8_Kirtipur Municipality	107	57	1.3%	2,296	41	5	F	G	G	G	100	31%	G
195	Jharuwarasi	381	340	2.1%	4,286	13	5	F	G	G	G	100	31%	G
164	Dakshinkali	460	325	1.0%	4,755	15	5	F	G	G	G	100	31%	G
163	Dahachok	635	405	0.6%	4,036	10	5	F	G	G	G	100	31%	G
202	Chhaling	961	662	1.5%	8,129	12	5	F	G	G	G	100	31%	G
183	Tokha Chandeshwari	441	324	1.1%	3,961	12	5	F	G	G	G	100	31%	G
203	Chitapol	508	428	0.1%	5,619	13	5	F	G	G	G	100	31%	G

MULTI CRITERIA ANALYSIS **Annex - 1.0**

SITUATION 2011 (ACTUAL)

Ref_No	Wards_Municipality & VDCs	Total Area (Ha)	Agriculture + Residential	2011				Category				Cum total	Percentile	Net Category
				Growth	Population	P_Density	R_Density	Growth	Population	P_Density	R_Density			
150	Changunarayan	678	577	0.4%	6,211	11	5	F	G	G	G	100	31%	G
191	Dukuchhap	491	354	0.8%	2,669	8	5	F	G	G	G	100	31%	G
156	Badbhanjyang	480	299	1.8%	3,779	13	5	F	G	G	G	100	31%	G
168	Jitpur Phedi	895	682	0.3%	5,135	8	4	F	G	G	G	100	31%	G
130	Pukhulachhi	138	110	0.2%	2,676	24	4	F	G	G	G	100	31%	G
189	Chhampi	552	443	1.1%	4,753	11	4	F	G	G	G	100	31%	G
178	Sangla	598	345	1.2%	3,622	10	4	F	G	G	G	100	31%	G
131	Sangkhu Bajrayogini	524	395	1.6%	4,333	11	4	F	G	G	G	100	31%	G
165	Gagal Phedi	1,076	657	0.7%	5,533	8	4	F	G	G	G	100	31%	G
197	Lele	2,407	782	2.4%	8,411	11	4	F	G	G	G	100	31%	G
158	Bhimdhunga	600	305	1.3%	2,915	10	4	F	G	G	G	100	31%	G
187	Bisangkhunarayan	695	314	0.1%	4,484	14	4	F	G	G	G	100	31%	G
196	Lamatar	1,105	571	0.9%	8,188	14	4	F	G	G	G	100	31%	G
139	Bungmati	389	352	0.5%	5,966	17	4	F	G	G	G	100	31%	G
179	Saukhel Satidevi	587	382	0.4%	4,248	11	3	F	G	G	G	100	31%	G
161	Chhaimale	971	534	0.3%	4,216	8	3	F	G	G	G	100	31%	G
167	Jhor Mahankal	616	338	1.5%	4,103	12	3	F	G	G	G	100	31%	G
201	Bageswori	955	479	0.8%	5,385	11	3	F	G	G	G	100	31%	G
185	Badikhel	584	233	1.6%	3,576	15	3	F	G	G	G	100	31%	G
170	Lapsiphedi	1,776	935	0.1%	5,629	6	3	F	G	G	G	100	31%	G
132	Sangkhu Suntol	1,221	608	0.3%	4,819	8	3	F	G	G	G	100	31%	G
159	Chalnakhel	551	246	1.9%	4,365	18	3	F	G	G	G	100	31%	G
143	Khokana	317	295	0.8%	4,927	17	3	F	G	G	G	100	31%	G
182	Talkudunde Chaur	1,188	340	1.5%	2,858	8	3	F	G	G	G	100	31%	G
198	Nallu	802	285	0.1%	2,171	8	2	F	G	G	G	100	31%	G
190	Devichaur	1,252	365	0.3%	2,883	8	2	F	G	G	G	100	31%	G
186	Bhardeu	783	199	0.7%	2,210	11	1	F	G	G	G	100	31%	G
181	Sundarijal	3,524	383	0.5%	2,552	7	1	F	G	G	G	100	31%	G
87	13_Kirtipur Municipality	84	80	-0.4%	1,386	17	7	G	G	G	G	80	25%	G
69	12_Bhaktapur Municipality	16	16	-0.6%	3,782	242	6	G	G	G	G	80	25%	G
95	2_Madhyapur Thimi Municipality	80	60	-1.4%	2,029	34	6	G	G	G	G	80	25%	G
204	Gundu	743	417	0.0%	5,689	14	4	G	G	G	G	80	25%	G
174	Nanglebhare	2,084	1,536	-0.4%	4,520	3	1	G	G	G	G	80	25%	G
192	Ghusel	1,084	223	-0.5%	1,510	7	1	G	G	G	G	80	25%	G
	TOTAL	**72,187**	**46,066**		**2,429,279**	**53**								

POPULATION PROJECTION OF MUNICIPALITIES AND VDCs **Annex - 2.0**

BUSINESS AS USUAL MODEL

WNO	Wards_Municipality & VDCs	Municipality or Urbanining/ Rural VDCs	Growth Rate	Growth Category	Area	2011		Density Category	2021			2031		
						Population	Density		Growth	Population	Density	Growth	Population	Density
126	Manmaiju	Urbanizing VDC_KATHMANDU_VDC	13.6%	A	305	40,416	132	VII	7.8%	85,377	280	7.6%	176,869	580
123	Kapan	Urbanizing VDC_KATHMANDU_VDC	12.5%	A	466	48,463	104	VII	7.8%	102,376	220	7.6%	212,084	455
120	Gothatar	Urbanizing VDC_KATHMANDU_VDC	12.5%	B	461	26,169	57	VIII	6.8%	50,360	109	6.6%	95,023	206
121	Ichangu Narayan	Urbanizing VDC_KATHMANDU_VDC	12.1%	B	1,181	24,425	21	VIII	6.8%	47,004	40	6.6%	88,690	75
109	16_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	12.0%	B	87	14,260	165	VII	6.8%	27,442	317	6.6%	51,780	598
76	2_Kirtipur Municipality	Kirtipur Municipality	11.3%	B	55	6,728	122	VII	6.8%	12,948	235	6.6%	24,430	444
154	Katunje	Urbanizing VDC_BHAKTAPUR_VDC	11.3%	B	433	19,497	45	VIII	6.8%	37,521	87	6.6%	70,796	164
142	Imadol	Urbanizing VDC_LALITPUR_VDC	11.2%	B	402	27,327	68	VIII	6.8%	52,589	131	6.6%	99,228	247
207	Sipadol	Rural VDC_BHAKTAPUR_VDC	10.7%	B	811	9,876	12	VIII	6.8%	19,006	23	6.6%	35,861	44
115	Dhapasi	Urbanizing VDC_KATHMANDU_VDC	10.7%	B	204	31,406	154	VII	6.8%	60,439	297	6.6%	114,039	560
125	Mahankal	Urbanizing VDC_KATHMANDU_VDC	10.3%	B	411	17,997	44	VIII	6.8%	34,634	84	6.6%	65,349	159
119	Gongabu	Urbanizing VDC_KATHMANDU_VDC	10.1%	B	236	54,410	231	VII	6.8%	104,708	444	6.6%	197,570	837
145	Sainbu Bhaisepati	Urbanizing VDC_LALITPUR_VDC	10.0%	B	412	19,721	48	VIII	6.8%	37,952	92	6.6%	71,610	174
205	Nagarkot	Rural VDC_BHAKTAPUR_VDC	10.0%	B	948	4,571	5	VIII	6.8%	8,797	9	6.6%	16,598	18
160	Chapali Bhadrakali	Rural VDC_KATHMANDU_VDC	9.6%	C	627	10,827	17	VIII	5.8%	18,964	30	5.6%	32,563	52
108	15_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	9.4%	C	126	18,336	145	VII	5.8%	32,117	254	5.6%	55,148	437
75	1_Kirtipur Municipality	Kirtipur Municipality	9.3%	C	45	6,708	150	VII	5.8%	11,750	263	5.6%	20,175	452
110	17_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	9.0%	C	266	9,880	37	VIII	5.8%	17,306	65	5.6%	29,715	112
118	Goldhunga	Urbanizing VDC_KATHMANDU_VDC	8.8%	C	515	16,174	31	VIII	5.8%	28,330	55	5.6%	48,645	94
96	3_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	8.6%	C	143	6,364	45	VIII	5.8%	11,147	78	5.6%	19,140	134
155	Sirutar	Urbanizing VDC_BHAKTAPUR_VDC	8.4%	C	137	4,790	35	VIII	5.8%	8,390	61	5.6%	14,406	105
48	13_LSMC	LSMC	8.3%	C	75	14,867	198	VII	5.8%	26,041	347	5.6%	44,714	595
35	35_KMC	KMC	8.1%	C	434	76,299	176	VII	5.8%	133,644	308	5.6%	229,478	528
184	Tokha Saraswati	Rural VDC_KATHMANDU_VDC	8.0%	C	193	5,152	27	VIII	5.8%	9,024	47	5.6%	15,495	80
153	Jhaukhel	Urbanizing VDC_BHAKTAPUR_VDC	8.0%	C	522	7,721	15	VIII	5.8%	13,524	26	5.6%	23,222	44
172	Mahadevsthan	Rural VDC_KATHMANDU_VDC	7.7%	C	702	15,514	22	VIII	5.8%	27,174	39	5.6%	46,660	66
208	Sudal	Rural VDC_BHAKTAPUR_VDC	7.6%	C	732	7,254	10	VIII	5.8%	12,706	17	5.6%	21,817	30
127	Mulpani	Urbanizing VDC_KATHMANDU_VDC	7.6%	C	386	11,742	30	VIII	5.8%	20,567	53	5.6%	35,315	91
92	18_Kirtipur Municipality	Kirtipur Municipality	7.4%	D	34	4,661	136	VII	4.8%	7,424	217	4.6%	11,591	339
148	Tikathali	Urbanizing VDC_LALITPUR_VDC	7.4%	D	301	10,136	34	VIII	4.8%	16,145	54	4.6%	25,205	84
209	Tathali	Rural VDC_BHAKTAPUR_VDC	7.3%	D	870	5,698	7	VIII	4.8%	9,076	10	4.6%	14,169	16
140	Dhapakhel	Urbanizing VDC_LALITPUR_VDC	7.3%	D	367	12,678	35	VIII	4.8%	20,194	55	4.6%	31,526	86
149	Balkot	Urbanizing VDC_BHAKTAPUR_VDC	7.2%	D	284	15,881	56	VIII	4.8%	25,296	89	4.6%	39,491	139
122	Jorpati	Urbanizing VDC_KATHMANDU_VDC	7.2%	D	482	84,567	175	VII	4.8%	134,702	280	4.6%	210,294	436
135	Syuchatar	Urbanizing VDC_KATHMANDU_VDC	7.2%	D	274	13,412	49	VIII	4.8%	21,363	78	4.6%	33,352	122
124	Khadka Bhadrakali	Urbanizing VDC_KATHMANDU_VDC	7.1%	D	239	10,761	45	VIII	4.8%	17,141	72	4.6%	26,759	112
16	16_KMC	KMC	6.7%	D	411	84,441	205	VII	4.8%	134,502	327	4.6%	209,980	511
37	2_LSMC	LSMC	6.5%	D	111	19,061	171	VII	4.8%	30,361	273	4.6%	47,399	426
84	10_Kirtipur Municipality	Kirtipur Municipality	6.4%	D	2	1,934	872	II	4.8%	3,081	1,388	4.6%	4,809	2,168
128	Naikap Naya Bhanjyang	Urbanizing VDC_KATHMANDU_VDC	6.4%	D	125	7,944	63	VIII	4.8%	12,654	101	4.6%	19,754	158
134	Sitapaila	Urbanizing VDC_KATHMANDU_VDC	6.3%	D	351	17,909	51	VIII	4.8%	28,526	81	4.6%	44,534	127
49	14_LSMC	LSMC	6.3%	D	172	21,232	123	VII	4.8%	33,819	197	4.6%	52,798	307
133	Satungal	Urbanizing VDC_KATHMANDU_VDC	6.2%	D	233	10,452	45	VIII	4.8%	16,648	71	4.6%	25,991	111

POPULATION PROJECTION OF MUNICIPALITIES AND VDCs **Annex - 2.0**

BUSINESS AS USUAL MODEL

WNO	Wards_Municipality & VDCs	Municipality or Urbanining/ Rural VDCs	Growth Rate	Growth Category	Area	2011		Density Category	2021			2031		
						Population	Density		Growth	Population	Density	Growth	Population	Density
29	29_KMC	KMC	6.2%	D	194	45,052	233	VII	4.8%	71,761	371	4.6%	112,031	579
3	3_KMC	KMC	6.1%	D	320	34,866	109	VII	4.8%	55,536	173	4.6%	86,702	271
141	Harisiddhi	Urbanizing VDC_LALITPUR_VDC	6.1%	D	310	10,736	35	VIII	4.8%	17,101	55	4.6%	26,697	86
152	Duwakot	Urbanizing VDC_BHAKTAPUR_VDC	5.9%	D	631	10,461	17	VIII	4.8%	16,663	26	4.6%	26,013	41
98	5_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	5.9%	D	13	3,189	254	VI	4.8%	5,080	404	4.6%	7,930	631
59	2_Bhaktapur Municipality	Bhaktapur Municipality	5.9%	D	67	6,694	100	VIII	4.8%	10,663	159	4.6%	16,646	248
117	Gokarneshwar	Urbanizing VDC_KATHMANDU_VDC	5.8%	D	469	7,508	16	VIII	4.8%	11,959	25	4.6%	18,670	40
61	4_Bhaktapur Municipality	Bhaktapur Municipality	5.7%	D	144	11,011	77	VIII	4.8%	17,539	122	4.6%	27,381	191
77	3_Kirtipur Municipality	Kirtipur Municipality	5.7%	D	152	7,343	48	VIII	4.8%	11,696	77	4.6%	18,260	120
85	11_Kirtipur Municipality	Kirtipur Municipality	5.7%	D	64	3,681	58	VIII	4.8%	5,863	92	4.6%	9,154	143
173	Matatirtha	Rural VDC_KATHMANDU_VDC	5.6%	D	620	5,982	10	VIII	4.8%	9,528	15	4.6%	14,875	24
206	Nangkhel	Rural VDC_BHAKTAPUR_VDC	5.6%	D	681	5,509	8	VIII	4.8%	8,775	13	4.6%	13,699	20
14	14_KMC	KMC	5.5%	D	320	58,495	183	VII	4.8%	93,174	291	4.6%	145,460	455
86	12_Kirtipur Municipality	Kirtipur Municipality	5.5%	D	65	3,077	48	VIII	4.8%	4,901	76	4.6%	7,652	119
112	Balambu	Urbanizing VDC_KATHMANDU_VDC	5.3%	D	212	7,323	35	VIII	4.8%	11,664	55	4.6%	18,210	86
90	16_Kirtipur Municipality	Kirtipur Municipality	5.2%	D	98	2,510	26	VIII	4.8%	3,998	41	4.6%	6,242	64
10	10_KMC	KMC	5.2%	D	157	39,820	253	VI	4.8%	63,427	403	4.6%	99,021	629
74	17_Bhaktapur Municipality	Bhaktapur Municipality	5.1%	D	160	9,901	62	VIII	4.8%	15,771	99	4.6%	24,621	154
146	Sunakothi	Urbanizing VDC_LALITPUR_VDC	5.0%	D	302	10,092	33	VIII	4.8%	16,075	53	4.6%	25,096	83
4	4_KMC	KMC	5.0%	D	286	47,362	166	VII	4.8%	75,441	264	4.6%	117,776	412
44	9_LSMC	LSMC	5.0%	D	77	13,908	181	VII	4.8%	22,153	289	4.6%	34,585	450
138	Tinthana	Urbanizing VDC_KATHMANDU_VDC	5.0%	E	129	9,726	75	VIII	3.8%	14,075	109	3.6%	19,960	155
1	1_KMC	KMC	5.0%	E	138	8,008	58	VIII	3.8%	11,589	84	3.6%	16,435	120
151	Dadhikot	Urbanizing VDC_BHAKTAPUR_VDC	4.9%	E	650	11,629	18	VIII	3.8%	16,829	26	3.6%	23,866	37
15	15_KMC	KMC	4.8%	E	292	54,476	187	VII	3.8%	78,836	270	3.6%	111,799	383
91	17_Kirtipur Municipality	Kirtipur Municipality	4.7%	E	78	5,732	73	VIII	3.8%	8,295	106	3.6%	11,764	150
100	7_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	4.7%	E	66	4,388	67	VIII	3.8%	6,350	97	3.6%	9,005	137
176	Phutung	Rural VDC_KATHMANDU_VDC	4.7%	E	142	4,792	34	VIII	3.8%	6,935	49	3.6%	9,834	69
43	8_LSMC	LSMC	4.7%	E	48	11,400	238	VII	3.8%	16,498	345	3.6%	23,396	489
52	17_LSMC	LSMC	4.6%	E	60	10,644	177	VII	3.8%	15,404	256	3.6%	21,844	363
6	6_KMC	KMC	4.6%	E	340	60,344	178	VII	3.8%	87,328	257	3.6%	123,842	365
114	Budhanilkantha	Urbanizing VDC_KATHMANDU_VDC	4.5%	E	1,398	15,421	11	VIII	3.8%	22,317	16	3.6%	31,648	23
136	Thali Danchhi	Urbanizing VDC_KATHMANDU_VDC	4.4%	E	499	11,246	23	VIII	3.8%	16,275	33	3.6%	23,080	46
19	19_KMC	KMC	4.4%	E	13	10,711	800	III	3.8%	15,501	1,158	3.6%	21,982	1,643
79	5_Kirtipur Municipality	Kirtipur Municipality	4.4%	E	13	3,439	274	VI	3.8%	4,977	396	3.6%	7,058	561
39	4_LSMC	LSMC	4.3%	E	204	15,367	75	VIII	3.8%	22,239	109	3.6%	31,537	155
9	9_KMC	KMC	4.1%	E	376	40,371	107	VII	3.8%	58,424	155	3.6%	82,852	221
102	9_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	3.9%	E	49	2,250	46	VIII	3.8%	3,256	67	3.6%	4,618	94
34	34_KMC	KMC	3.9%	E	233	66,121	283	VI	3.8%	95,689	410	3.6%	135,698	582
137	Thankot	Urbanizing VDC_KATHMANDU_VDC	3.8%	E	615	12,047	20	VIII	3.8%	17,434	28	3.6%	24,724	40
81	7_Kirtipur Municipality	Kirtipur Municipality	3.7%	E	151	2,877	19	VIII	3.8%	4,164	28	3.6%	5,904	39
32	32_KMC	KMC	3.7%	E	130	33,316	256	VI	3.8%	48,214	370	3.6%	68,373	525
8	8_KMC	KMC	3.7%	E	181	10,738	59	VIII	3.8%	15,540	86	3.6%	22,037	122

POPULATION PROJECTION OF MUNICIPALITIES AND VDCs **Annex - 2.0**

BUSINESS AS USUAL MODEL

WNO	Wards_Municipality & VDCs	Municipality or Urbanining/ Rural VDCs	Growth Rate	Growth Category	Area	2011		Density Category	2021			2031		
						Population	Density		Growth	Population	Density	Growth	Population	Density
116	Dharmasthali	Urbanizing VDC_KATHMANDU_VDC	3.6%	E	186	6,530	35	VIII	3.8%	9,450	51	3.6%	13,401	72
171	Machhegaun	Rural VDC_KATHMANDU_VDC	3.5%	E	466	3,849	8	VIII	3.8%	5,570	12	3.6%	7,899	17
169	Kabhresthali	Rural VDC_KATHMANDU_VDC	3.5%	E	854	4,774	6	VIII	3.8%	6,909	8	3.6%	9,798	11
175	Nayapati	Rural VDC_KATHMANDU_VDC	3.5%	E	671	7,257	11	VIII	3.8%	10,502	16	3.6%	14,893	22
7	7_KMC	KMC	3.4%	E	155	51,581	334	VI	3.8%	74,647	483	3.6%	105,858	685
13	13_KMC	KMC	3.3%	E	214	40,456	189	VII	3.8%	58,547	274	3.6%	83,027	389
144	Lubhu	Urbanizing VDC_LALITPUR_VDC	3.2%	E	640	10,374	16	VIII	3.8%	15,013	23	3.6%	21,290	33
177	Ramkot	Rural VDC_KATHMANDU_VDC	3.1%	E	579	8,759	15	VIII	3.8%	12,676	22	3.6%	17,976	31
45	10_LSMC	LSMC	3.1%	E	76	6,554	86	VIII	3.8%	9,485	124	3.6%	13,451	177
200	Thaiba	Rural VDC_LALITPUR_VDC	3.0%	E	234	8,261	35	VIII	3.8%	11,955	51	3.6%	16,954	72
194	Godawari	Rural VDC_LALITPUR_VDC	2.9%	E	1,648	7,558	5	VIII	3.8%	10,938	7	3.6%	15,511	9
18	18_KMC	KMC	2.9%	E	20	10,746	539	V	3.8%	15,551	780	3.6%	22,054	1,107
157	Baluwa	Rural VDC_KATHMANDU_VDC	2.9%	E	701	5,467	8	VIII	3.8%	7,912	11	3.6%	11,220	16
78	4_Kirtipur Municipality	Kirtipur Municipality	2.8%	E	5	2,396	459	V	3.8%	3,467	664	3.6%	4,917	941
180	Sheshnarayan	Rural VDC_KATHMANDU_VDC	2.8%	E	511	3,855	8	VIII	3.8%	5,579	11	3.6%	7,912	15
129	Naikap Purano Bhanjyang	Urbanizing VDC_KATHMANDU_VDC	2.7%	E	174	4,546	26	VIII	3.8%	6,579	38	3.6%	9,330	54
50	15_LSMC	LSMC	2.6%	E	228	13,858	61	VIII	3.8%	20,055	88	3.6%	28,440	125
17	17_KMC	KMC	2.6%	E	36	25,926	725	III	3.8%	37,520	1,050	3.6%	53,207	1,489
20	20_KMC	KMC	2.5%	E	16	10,968	701	III	3.8%	15,873	1,014	3.6%	22,509	1,438
188	Chapagaun	Rural VDC_LALITPUR_VDC	2.5%	E	727	16,420	23	VIII	3.8%	23,763	33	3.6%	33,698	46
93	19_Kirtipur Municipality	Kirtipur Municipality	2.4%	F	84	985	12	VIII	2.8%	1,294	15	2.6%	1,665	20
197	Lele	Rural VDC_LALITPUR_VDC	2.4%	F	2,408	8,411	3	VIII	2.8%	11,049	5	2.6%	14,219	6
67	10_Bhaktapur Municipality	Bhaktapur Municipality	2.4%	F	25	4,509	178	VII	2.8%	5,923	233	2.6%	7,623	300
33	33_KMC	KMC	2.3%	F	92	25,694	280	VI	2.8%	33,752	367	2.6%	43,438	473
12	12_KMC	KMC	2.3%	F	49	13,262	270	VI	2.8%	17,421	354	2.6%	22,420	456
80	6_Kirtipur Municipality	Kirtipur Municipality	2.2%	F	17	1,681	99	VIII	2.8%	2,208	130	2.6%	2,842	168
147	Thecho	Urbanizing VDC_LALITPUR_VDC	2.2%	F	326	10,086	31	VIII	2.8%	13,249	41	2.6%	17,051	52
38	3_LSMC	LSMC	2.2%	F	165	14,082	85	VIII	2.8%	18,498	112	2.6%	23,807	144
195	Jharuwarasi	Rural VDC_LALITPUR_VDC	2.1%	F	381	4,286	11	VIII	2.8%	5,630	15	2.6%	7,246	19
54	19_LSMC	LSMC	2.0%	F	16	7,385	455	V	2.8%	9,701	598	2.6%	12,485	769
159	Chalnakhel	Rural VDC_KATHMANDU_VDC	1.9%	F	551	4,365	8	VIII	2.8%	5,734	10	2.6%	7,379	13
107	14_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	1.9%	F	11	2,653	238	VII	2.8%	3,485	313	2.6%	4,485	402
5	5_KMC	KMC	1.9%	F	71	18,320	258	VI	2.8%	24,065	338	2.6%	30,971	435
94	1_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	1.9%	F	49	3,054	62	VIII	2.8%	4,012	81	2.6%	5,163	105
36	1_LSMC	LSMC	1.9%	F	48	8,434	175	VII	2.8%	11,079	230	2.6%	14,258	296
55	20_LSMC	LSMC	1.8%	F	16	7,721	476	V	2.8%	10,142	626	2.6%	13,053	805
57	22_LSMC	LSMC	1.8%	F	45	10,109	224	VII	2.8%	13,279	294	2.6%	17,090	379
106	13_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	1.8%	F	38	3,794	99	VIII	2.8%	4,984	130	2.6%	6,414	168
156	Badbhanjyang	Rural VDC_KATHMANDU_VDC	1.8%	F	480	3,779	8	VIII	2.8%	4,964	10	2.6%	6,389	13
166	Indrayani	Rural VDC_KATHMANDU_VDC	1.7%	F	277	3,361	12	VIII	2.8%	4,415	16	2.6%	5,682	21
42	7_LSMC	LSMC	1.7%	F	21	7,849	374	VI	2.8%	10,310	492	2.6%	13,269	633
185	Badikhel	Rural VDC_LALITPUR_VDC	1.6%	F	585	3,576	6	VIII	2.8%	4,697	8	2.6%	6,046	10

POPULATION PROJECTION OF MUNICIPALITIES AND VDCs **Annex - 2.0**

BUSINESS AS USUAL MODEL

WNO	Wards_Municipality & VDCs	Municipality or Urbanining/ Rural VDCs	Growth Rate	Growth Category	Area	2011		Density Category	2021			2031		
						Population	Density		Growth	Population	Density	Growth	Population	Density
99	6_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	1.6%	F	82	1,649	20	VIII	2.8%	2,166	26	2.6%	2,788	34
131	Sangkhu Bajrayogini	Urbanizing VDC_KATHMANDU_VDC	1.6%	F	524	4,333	8	VIII	2.8%	5,692	11	2.6%	7,325	14
72	15_Bhaktapur Municipality	Bhaktapur Municipality	1.6%	F	65	6,044	94	VIII	2.8%	7,939	123	2.6%	10,218	158
11	11_KMC	KMC	1.5%	F	174	17,765	102	VII	2.8%	23,336	134	2.6%	30,033	173
202	Chhaling	Rural VDC_BHAKTAPUR_VDC	1.5%	F	961	8,129	8	VIII	2.8%	10,678	11	2.6%	13,743	14
182	Talkudunde Chaur	Rural VDC_KATHMANDU_VDC	1.5%	F	1,188	2,858	2	VIII	2.8%	3,754	3	2.6%	4,832	4
89	15_Kirtipur Municipality	Kirtipur Municipality	1.5%	F	285	3,767	13	VIII	2.8%	4,948	17	2.6%	6,368	22
167	Jhor Mahankal	Rural VDC_KATHMANDU_VDC	1.5%	F	616	4,103	7	VIII	2.8%	5,390	9	2.6%	6,936	11
193	Godamchaur	Rural VDC_LALITPUR_VDC	1.5%	F	313	4,914	16	VIII	2.8%	6,455	21	2.6%	8,308	27
113	Bhadrabas	Urbanizing VDC_KATHMANDU_VDC	1.4%	F	167	2,388	14	VIII	2.8%	3,137	19	2.6%	4,037	24
101	8_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	1.4%	F	11	2,835	252	VI	2.8%	3,724	331	2.6%	4,793	425
31	31_KMC	KMC	1.4%	F	94	16,211	172	VII	2.8%	21,295	226	2.6%	27,406	291
162	Chunikhel	Rural VDC_KATHMANDU_VDC	1.4%	F	360	4,449	12	VIII	2.8%	5,844	16	2.6%	7,521	21
62	5_Bhaktapur Municipality	Bhaktapur Municipality	1.3%	F	29	5,141	176	VII	2.8%	6,753	231	2.6%	8,691	297
158	Bhimdhunga	Rural VDC_KATHMANDU_VDC	1.3%	F	600	2,915	5	VIII	2.8%	3,829	6	2.6%	4,928	8
82	8_Kirtipur Municipality	Kirtipur Municipality	1.3%	F	107	2,296	22	VIII	2.8%	3,016	28	2.6%	3,882	36
111	Aalapot	Urbanizing VDC_KATHMANDU_VDC	1.3%	F	147	3,159	21	VIII	2.8%	4,150	28	2.6%	5,341	36
178	Sangla	Rural VDC_KATHMANDU_VDC	1.2%	F	598	3,622	6	VIII	2.8%	4,758	8	2.6%	6,123	10
189	Chhampi	Rural VDC_LALITPUR_VDC	1.1%	F	552	4,753	9	VIII	2.8%	6,244	11	2.6%	8,035	15
183	Tokha Chandeshwari	Rural VDC_KATHMANDU_VDC	1.1%	F	441	3,961	9	VIII	2.8%	5,203	12	2.6%	6,696	15
25	25_KMC	KMC	1.1%	F	12	3,486	298	VI	2.8%	4,579	392	2.6%	5,893	504
83	9_Kirtipur Municipality	Kirtipur Municipality	1.0%	F	20	2,272	111	VII	2.8%	2,985	146	2.6%	3,841	188
21	21_KMC	KMC	1.0%	F	13	13,727	1,043	I	2.8%	18,032	1,371	2.6%	23,207	1,764
164	Dakshinkali	Rural VDC_KATHMANDU_VDC	1.0%	F	460	4,755	10	VIII	2.8%	6,246	14	2.6%	8,039	17
199	Siddhipur	Rural VDC_LALITPUR_VDC	1.0%	F	201	6,147	31	VIII	2.8%	8,075	40	2.6%	10,392	52
40	5_LSMC	LSMC	1.0%	F	76	6,404	84	VIII	2.8%	8,412	110	2.6%	10,826	142
56	21_LSMC	LSMC	0.9%	F	7	4,659	704	III	2.8%	6,120	924	2.6%	7,876	1,190
196	Lamatar	Rural VDC_LALITPUR_VDC	0.9%	F	1,106	8,188	7	VIII	2.8%	10,756	10	2.6%	13,842	13
143	Khokana	Urbanizing VDC_LALITPUR_VDC	0.8%	F	317	4,927	16	VIII	2.8%	6,472	20	2.6%	8,329	26
97	4_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	0.8%	F	11	1,945	174	VII	2.8%	2,555	229	2.6%	3,288	295
41	6_LSMC	LSMC	0.8%	F	24	6,780	280	VI	2.8%	8,906	367	2.6%	11,462	473
201	Bageswori	Rural VDC_BHAKTAPUR_VDC	0.8%	F	956	5,385	6	VIII	2.8%	7,074	7	2.6%	9,104	10
191	Dukuchhap	Rural VDC_LALITPUR_VDC	0.8%	F	491	2,669	5	VIII	2.8%	3,506	7	2.6%	4,512	9
186	Bhardeu	Rural VDC_LALITPUR_VDC	0.7%	F	783	2,210	3	VIII	2.8%	2,903	4	2.6%	3,736	5
165	Gagal Phedi	Rural VDC_KATHMANDU_VDC	0.7%	F	1,076	5,533	5	VIII	2.8%	7,268	7	2.6%	9,354	9
104	11_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	0.6%	F	16	2,413	152	VII	2.8%	3,170	200	2.6%	4,079	257
26	26_KMC	KMC	0.6%	F	8	4,133	502	V	2.8%	5,429	659	2.6%	6,987	848
163	Dahachok	Rural VDC_KATHMANDU_VDC	0.6%	F	635	4,036	6	VIII	2.8%	5,302	8	2.6%	6,823	11
46	11_LSMC	LSMC	0.6%	F	10	4,458	444	V	2.8%	5,856	583	2.6%	7,537	750
139	Bungmati	Urbanizing VDC_LALITPUR_VDC	0.5%	F	389	5,966	15	VIII	2.8%	7,837	20	2.6%	10,086	26
47	12_LSMC	LSMC	0.5%	F	13	5,891	462	V	2.8%	7,738	607	2.6%	9,959	782
181	Sundarijal	Rural VDC_KATHMANDU_VDC	0.5%	F	3,526	2,552	1	VIII	2.8%	3,352	1	2.6%	4,314	1
150	Changunarayan	Urbanizing VDC_BHAKTAPUR_VDC	0.4%	F	678	6,211	9	VIII	2.8%	8,159	12	2.6%	10,500	15

POPULATION PROJECTION OF MUNICIPALITIES AND VDCs **Annex - 2.0**

BUSINESS AS USUAL MODEL

WNO	Wards_Municipality & VDCs	Municipality or Urbanining/ Rural VDCs	Growth Rate	Growth Category	Area	2011		Density Category	2021			2031		
						Population	Density		Growth	Population	Density	Growth	Population	Density
179	Saukhel Satidevi	Rural VDC_KATHMANDU_VDC	0.4%	F	587	4,248	7	VIII	2.8%	5,580	10	2.6%	7,182	12
28	28_KMC	KMC	0.4%	F	5	5,611	1,181	I	2.8%	7,371	1,552	2.6%	9,486	1,997
73	16_Bhaktapur Municipality	Bhaktapur Municipality	0.3%	F	17	3,684	215	VII	2.8%	4,839	283	2.6%	6,228	364
168	Jitpur Phedi	Rural VDC_KATHMANDU_VDC	0.3%	F	895	5,135	6	VIII	2.8%	6,745	8	2.6%	8,681	10
60	3_Bhaktapur Municipality	Bhaktapur Municipality	0.3%	F	22	3,427	158	VII	2.8%	4,502	207	2.6%	5,794	267
132	Sangkhu Suntol	Urbanizing VDC_KATHMANDU_VDC	0.3%	F	1,222	4,819	4	VIII	2.8%	6,330	5	2.6%	8,147	7
161	Chhaimale	Rural VDC_KATHMANDU_VDC	0.3%	F	971	4,216	4	VIII	2.8%	5,538	6	2.6%	7,127	7
190	Devichaur	Rural VDC_LALITPUR_VDC	0.3%	F	1,252	2,883	2	VIII	2.8%	3,787	3	2.6%	4,874	4
130	Pukhulachhi	Urbanizing VDC_KATHMANDU_VDC	0.2%	F	138	2,676	19	VIII	2.8%	3,515	25	2.6%	4,524	33
63	6_Bhaktapur Municipality	Bhaktapur Municipality	0.1%	F	17	3,126	186	VII	2.8%	4,106	244	2.6%	5,285	314
88	14_Kirtipur Municipality	Kirtipur Municipality	0.1%	F	118	2,129	18	VIII	2.8%	2,797	24	2.6%	3,599	31
170	Lapsiphedi	Rural VDC_KATHMANDU_VDC	0.1%	F	1,777	5,629	3	VIII	2.8%	7,394	4	2.6%	9,516	5
187	Bisangkhunarayan	Rural VDC_LALITPUR_VDC	0.1%	F	695	4,484	6	VIII	2.8%	5,890	8	2.6%	7,581	11
198	Nallu	Rural VDC_LALITPUR_VDC	0.1%	F	802	2,171	3	VIII	2.8%	2,852	4	2.6%	3,670	5
203	Chitapol	Rural VDC_BHAKTAPUR_VDC	0.1%	F	508	5,619	11	VIII	2.8%	7,381	15	2.6%	9,499	19
22	22_KMC	KMC	0.0%	F	29	5,699	199	VII	2.8%	7,486	261	2.6%	9,635	336
204	Gundu	Rural VDC_BHAKTAPUR_VDC	0.0%	G	743	5,689	8	VIII	0.0%	5,689	8	0.0%	5,689	8
2	2_KMC	KMC	-0.1%	G	84	13,448	160	VII	0.0%	13,448	160	0.0%	13,448	160
27	27_KMC	KMC	-0.1%	G	8	7,592	942	II	0.0%	7,592	942	0.0%	7,592	942
23	23_KMC	KMC	-0.2%	G	12	8,357	713	III	0.0%	8,357	713	0.0%	8,357	713
103	10_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	-0.3%	G	10	1,877	183	VII	0.0%	1,877	183	0.0%	1,877	183
174	Nanglebhare	Rural VDC_KATHMANDU_VDC	-0.4%	G	2,085	4,520	2	VIII	0.0%	4,520	2	0.0%	4,520	2
105	12_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	-0.4%	G	19	2,120	112	VII	0.0%	2,120	112	0.0%	2,120	112
87	13_Kirtipur Municipality	Kirtipur Municipality	-0.4%	G	84	1,386	16	VIII	0.0%	1,386	16	0.0%	1,386	16
192	Ghusel	Rural VDC_LALITPUR_VDC	-0.5%	G	1,084	1,510	1	VIII	0.0%	1,510	1	0.0%	1,510	1
69	12_Bhaktapur Municipality	Bhaktapur Municipality	-0.6%	G	16	3,782	242	VII	0.0%	3,782	242	0.0%	3,782	242
68	11_Bhaktapur Municipality	Bhaktapur Municipality	-0.8%	G	16	3,287	206	VII	0.0%	3,287	206	0.0%	3,287	206
64	7_Bhaktapur Municipality	Bhaktapur Municipality	-0.9%	G	17	4,437	263	VI	0.0%	4,437	263	0.0%	4,437	263
65	8_Bhaktapur Municipality	Bhaktapur Municipality	-1.3%	G	11	3,138	296	VI	0.0%	3,138	296	0.0%	3,138	296
71	14_Bhaktapur Municipality	Bhaktapur Municipality	-1.3%	G	13	4,466	336	VI	0.0%	4,466	336	0.0%	4,466	336
95	2_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	-1.4%	G	80	2,029	25	VIII	0.0%	2,029	25	0.0%	2,029	25
30	30_KMC	KMC	-1.4%	G	23	8,563	374	VI	0.0%	8,563	374	0.0%	8,563	374
66	9_Bhaktapur Municipality	Bhaktapur Municipality	-1.5%	G	2	2,071	985	II	0.0%	2,071	985	0.0%	2,071	985
58	1_Bhaktapur Municipality	Bhaktapur Municipality	-1.6%	G	31	4,805	154	VII	0.0%	4,805	154	0.0%	4,805	154
70	13_Bhaktapur Municipality	Bhaktapur Municipality	-1.6%	G	5	2,225	451	V	0.0%	2,225	451	0.0%	2,225	451
53	18_LSMC	LSMC	-1.9%	G	14	5,777	407	V	0.0%	5,777	407	0.0%	5,777	407
51	16_LSMC	LSMC	-2.3%	G	8	4,362	542	V	0.0%	4,362	542	0.0%	4,362	542
24	24_KMC	KMC	-4.1%	G	8	3,488	443	V	0.0%	3,488	443	0.0%	3,488	443
		TOTAL			**72,181**	**2,429,279**				**3,753,678**	**52**		**5,820,147**	**81**

CONSTRAINTS ANALYSIS Annex - 3.0

SITUATION 2011 (ACTUAL)

SNO	Muni Ward /VDC	VDC_TYpe	Builtup on Constraint	Non-Builtup on Constraint	Total Constraint Area	Builtup on Constraint Free	Non_Builtup on Constraint Free	Total Constraint Free Area	Grand Total	Percent Non_Builtup on Constraint Free	Color Zone
10	10_KMC	KMC	149.06	8.34	157.40	0.00	0.00	0.00	157.40	0.0%	RED
12	12_KMC	KMC	38.47	4.31	42.78	6.41	0.00	6.41	49.19	0.0%	RED
23	23_KMC	KMC	5.20	0.00	5.20	6.52	0.00	6.52	11.72	0.0%	RED
25	25_KMC	KMC	8.39	0.00	8.39	3.30	0.00	3.30	11.68	0.0%	RED
27	27_KMC	KMC	0.00	0.00	0.00	8.06	0.00	8.06	8.06	0.0%	RED
28	28_KMC	KMC	0.00	0.00	0.00	4.75	0.00	4.75	4.75	0.0%	RED
32	32_KMC	KMC	107.07	1.55	108.62	21.50	0.00	21.50	130.12	0.0%	RED
34	34_KMC	KMC	221.65	11.61	233.25	0.00	0.00	0.00	233.25	0.0%	RED
46	11_LSMC	LSMC	4.20	0.00	4.20	5.85	0.00	5.85	10.04	0.0%	RED
47	12_LSMC	LSMC	2.65	0.00	2.65	10.08	0.00	10.08	12.73	0.0%	RED
65	8_Bhaktapur Municipality	Bhaktapur Municipality	1.69	0.00	1.69	8.90	0.00	8.90	10.59	0.0%	RED
70	13_Bhaktapur Municipality	Bhaktapur Municipality	2.91	0.00	2.91	2.02	0.00	2.02	4.93	0.0%	RED
94	1_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	10.26	38.96	49.22	0.00	0.00	0.00	49.22	0.0%	RED
98	5_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	12.00	25.48	37.49	0.00	0.00	0.00	37.49	0.0%	RED
107	14_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	5.36	5.78	11.14	0.00	0.00	0.00	11.14	0.0%	RED
126	Manmaiju	Urbanizing VDC_KATHMANDU_VDC	149.27	155.71	304.98	0.00	0.00	0.00	304.98	0.0%	RED
176	Phutung	Rural VDC_KATHMANDU_VDC	22.47	119.05	141.52	0.00	0.00	0.00	141.52	0.0%	RED
184	Tokha Saraswati	Rural VDC_KATHMANDU_VDC	55.50	137.92	193.43	0.00	0.00	0.00	193.43	0.0%	RED
64	7_Bhaktapur Municipality	Bhaktapur Municipality	6.82	5.09	11.92	4.95	0.00	4.95	16.87	0.0%	RED
63	6_Bhaktapur Municipality	Bhaktapur Municipality	5.10	8.67	13.77	3.05	0.00	3.06	16.82	0.0%	RED
53	18_LSMC	LSMC	5.43	0.00	5.43	8.77	0.00	8.77	14.20	0.0%	RED
51	16_LSMC	LSMC	0.87	0.00	0.87	7.17	0.00	7.18	8.05	0.0%	RED
8	8_KMC	KMC	70.65	97.26	167.91	12.64	0.15	12.80	180.71	0.1%	RED
21	21_KMC	KMC	0.05	0.02	0.08	13.06	0.01	13.08	13.15	0.1%	RED
24	24_KMC	KMC	0.10	0.16	0.27	7.60	0.01	7.61	7.87	0.1%	RED
18	18_KMC	KMC	9.19	0.45	9.64	10.26	0.03	10.29	19.92	0.1%	RED
56	21_LSMC	LSMC	0.17	0.26	0.42	6.18	0.01	6.19	6.62	0.2%	RED
9	9_KMC	KMC	316.33	26.54	342.87	31.55	1.17	32.72	375.60	0.3%	RED
41	6_LSMC	LSMC	0.00	0.00	0.00	24.17	0.08	24.25	24.25	0.3%	RED
40	5_LSMC	LSMC	0.24	0.39	0.63	75.40	0.30	75.70	76.33	0.4%	RED
31	31_KMC	KMC	48.55	30.94	79.49	14.27	0.37	14.64	94.12	0.4%	RED
7	7_KMC	KMC	50.19	5.19	55.37	98.39	0.69	99.08	154.45	0.4%	RED
59	2_Bhaktapur Municipality	Bhaktapur Municipality	20.27	42.46	62.73	4.10	0.34	4.44	67.17	0.5%	RED
20	20_KMC	KMC	9.72	1.20	10.91	4.64	0.09	4.73	15.64	0.6%	RED
78	4_Kirtipur Municipality	Kirtipur Municipality	0.00	0.00	0.00	5.19	0.03	5.22	5.22	0.6%	RED
29	29_KMC	KMC	115.20	25.63	140.83	51.55	1.21	52.76	193.58	0.6%	RED
45	10_LSMC	LSMC	47.10	11.69	58.79	16.82	0.55	17.37	76.16	0.7%	RED
1	1_KMC	KMC	5.56	2.10	7.66	128.75	1.06	129.81	137.47	0.8%	RED
181	Sundarijal	Rural VDC_KATHMANDU_VDC	7.02	3484.32	3491.34	2.86	29.74	32.61	3523.95	0.8%	RED

CONSTRAINTS ANALYSIS Annex - 3.0

SITUATION 2011 (ACTUAL)

SNO	Muni Ward /VDC	VDC_TYpe	Builtup on Constraint	Non-Builtup on Constraint	Total Constraint Area	Builtup on Constraint Free	Non_Builtup on Constraint Free	Total Constraint Free Area	Grand Total	Percent Non_Builtup on Constraint Free	Color Zone
35	35_KMC	KMC	271.01	58.81	329.81	100.64	3.72	104.36	434.17	0.9%	RED
22	22_KMC	KMC	1.13	0.34	1.47	26.88	0.28	27.16	28.63	1.0%	RED
33	33_KMC	KMC	39.00	1.61	40.62	50.25	0.99	51.24	91.86	1.1%	RED
19	19_KMC	KMC	6.57	1.43	8.00	5.23	0.15	5.38	13.38	1.1%	RED
26	26_KMC	KMC	1.72	0.00	1.72	6.42	0.10	6.51	8.24	1.2%	RED
30	30_KMC	KMC	1.63	0.12	1.75	20.84	0.29	21.13	22.88	1.3%	RED
69	12_Bhaktapur Municipality	Bhaktapur Municipality	7.43	7.63	15.06	0.34	0.20	0.54	15.60	1.3%	RED
119	Gongabu	Urbanizing VDC_KATHMANDU_VDC	155.80	67.78	223.57	9.30	3.06	12.37	235.94	1.3%	RED
106	13_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	18.16	19.46	37.62	0.07	0.53	0.61	38.23	1.4%	RED
124	Khadka Bhadrakali	Urbanizing VDC_KATHMANDU_VDC	76.27	154.01	230.29	4.95	3.76	8.71	239.00	1.6%	RED
72	15_Bhaktapur Municipality	Bhaktapur Municipality	7.85	43.99	51.83	11.64	1.03	12.67	64.51	1.6%	RED
54	19_LSMC	LSMC	1.06	0.00	1.07	14.89	0.27	15.15	16.22	1.6%	RED
17	17_KMC	KMC	8.82	0.24	9.06	26.02	0.65	26.67	35.72	1.8%	RED
71	14_Bhaktapur Municipality	Bhaktapur Municipality	8.24	1.73	9.97	3.07	0.27	3.33	13.30	2.0%	RED
36	1_LSMC	LSMC	27.47	5.57	33.04	14.02	1.02	15.04	48.09	2.1%	RED
11	11_KMC	KMC	143.67	18.01	161.68	8.19	3.70	11.90	173.57	2.1%	RED
2	2_KMC	KMC	0.00	0.00	0.00	82.29	1.85	84.14	84.14	2.2%	RED
52	17_LSMC	LSMC	24.10	16.02	40.12	18.67	1.36	20.04	60.16	2.3%	RED
55	20_LSMC	LSMC	0.10	0.00	0.10	15.72	0.38	16.10	16.21	2.4%	RED
13	13_KMC	KMC	130.40	13.90	144.30	62.10	7.12	69.22	213.52	3.3%	RED
109	16_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	22.23	41.55	63.78	19.60	3.12	22.72	86.50	3.6%	RED
173	Matatirtha	Rural VDC_KATHMANDU_VDC	37.80	556.94	594.74	1.31	23.53	24.84	619.58	3.8%	RED
37	2_LSMC	LSMC	34.33	12.62	46.94	59.25	4.92	64.18	111.12	4.4%	RED
183	Tokha Chandeshwari	Rural VDC_KATHMANDU_VDC	41.07	377.87	418.94	1.48	20.87	22.34	441.29	4.7%	RED
50	15_LSMC	LSMC	86.00	40.28	126.27	89.30	12.42	101.72	227.99	5.4%	RED
4	4_KMC	KMC	30.15	5.78	35.94	233.69	16.21	249.91	285.84	5.7%	RED
43	8_LSMC	LSMC	20.76	4.60	25.36	19.66	2.77	22.43	47.79	5.8%	RED
3	3_KMC	KMC	67.01	28.12	95.13	206.64	18.62	225.26	320.39	5.8%	RED
115	Dhapasi	Urbanizing VDC_KATHMANDU_VDC	110.79	36.99	147.78	43.42	12.52	55.95	203.73	6.1%	RED
95	2_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	3.83	68.23	72.06	2.93	4.94	7.87	79.93	6.2%	RED
67	10_Bhaktapur Municipality	Bhaktapur Municipality	6.89	11.49	18.37	5.40	1.60	7.00	25.37	6.3%	RED
62	5_Bhaktapur Municipality	Bhaktapur Municipality	4.72	17.88	22.60	4.75	1.85	6.60	29.20	6.3%	RED
178	Sangla	Rural VDC_KATHMANDU_VDC	27.22	531.12	558.35	1.68	38.11	39.79	598.13	6.4%	RED
5	5_KMC	KMC	16.33	1.39	17.72	48.40	5.00	53.40	71.12	7.0%	RED
66	9_Bhaktapur Municipality	Bhaktapur Municipality	0.01	0.06	0.06	1.89	0.15	2.04	2.10	7.0%	RED
73	16_Bhaktapur Municipality	Bhaktapur Municipality	2.89	7.62	10.51	5.39	1.21	6.59	17.10	7.0%	RED
116	Dharmasthali	Urbanizing VDC_KATHMANDU_VDC	35.99	133.55	169.54	3.48	13.20	16.68	186.22	7.1%	RED
114	Budhanilkantha	Urbanizing VDC_KATHMANDU_VDC	112.40	1162.63	1275.03	18.14	104.74	122.87	1397.90	7.5%	RED
42	7_LSMC	LSMC	8.93	2.07	11.00	8.38	1.59	9.97	20.97	7.6%	RED

CONSTRAINTS ANALYSIS Annex - 3.0

SITUATION 2011 (ACTUAL)

SNO	Muni Ward /VDC	VDC_TYpe	Builtup on Constraint	Non-Builtup on Constraint	Total Constraint Area	Builtup on Constraint Free	Non_Builtup on Constraint Free	Total Constraint Free Area	Grand Total	Percent Non_Builtup on Constraint Free	Color Zone
192	Ghusel	Rural VDC_LALITPUR_VDC	3.78	995.81	999.59	1.53	82.95	84.48	1084.07	7.7%	RED
15	15_KMC	KMC	67.62	51.23	118.85	149.29	23.38	172.67	291.52	8.0%	RED
38	3_LSMC	LSMC	7.87	5.53	13.40	138.52	13.26	151.78	165.18	8.0%	RED
57	22_LSMC	LSMC	16.06	6.95	23.01	18.37	3.73	22.10	45.11	8.3%	RED
99	6_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	16.72	53.25	69.98	5.09	7.03	12.13	82.10	8.6%	RED
169	Kabhresthali	Rural VDC_KATHMANDU_VDC	54.67	719.62	774.29	2.93	76.53	79.47	853.76	9.0%	RED
68	11_Bhaktapur Municipality	Bhaktapur Municipality	9.66	2.39	12.05	2.42	1.48	3.90	15.95	9.3%	RED
44	9_LSMC	LSMC	22.85	31.28	54.13	15.44	7.17	22.62	76.74	9.3%	RED
74	17_Bhaktapur Municipality	Bhaktapur Municipality	39.11	70.69	109.80	34.54	15.10	49.64	159.44	9.5%	RED
194	Godawari	Rural VDC_LALITPUR_VDC	20.49	1434.18	1454.67	29.35	162.87	192.22	1646.89	9.9%	RED
39	4_LSMC	LSMC	32.74	54.36	87.10	96.06	20.65	116.70	203.80	10.1%	RED
172	Mahadevsthan	Rural VDC_KATHMANDU_VDC	62.30	558.28	620.59	8.88	72.34	81.22	701.80	10.3%	RED
171	Machhegaun	Rural VDC_KATHMANDU_VDC	17.99	392.03	410.02	4.76	51.41	56.17	466.18	11.0%	RED
6	6_KMC	KMC	67.99	18.80	86.79	214.03	38.57	252.60	339.39	11.4%	RED
160	Chapali Bhadrakali	Rural VDC_KATHMANDU_VDC	34.11	498.15	532.26	17.01	77.44	94.45	626.71	12.4%	RED
58	1_Bhaktapur Municipality	Bhaktapur Municipality	4.95	17.24	22.19	5.02	3.97	9.00	31.19	12.7%	RED
187	Bisangkhunarayan	Rural VDC_LALITPUR_VDC	6.62	587.24	593.86	7.22	93.94	101.15	695.01	13.5%	RED
182	Talkudunde Chaur	Rural VDC_KATHMANDU_VDC	5.43	1016.09	1021.51	3.42	163.03	166.46	1187.97	13.7%	RED
122	Jorpati	Urbanizing VDC_KATHMANDU_VDC	203.19	66.69	269.87	143.54	68.29	211.83	481.70	14.2%	RED
81	7_Kirtipur Municipality	Kirtipur Municipality	8.82	117.27	126.08	2.67	21.84	24.51	150.59	14.5%	RED
16	16_KMC	KMC	167.98	32.07	200.04	149.65	61.28	210.92	410.97	14.9%	RED
14	14_KMC	KMC	39.44	43.77	83.21	186.33	50.13	236.46	319.67	15.7%	RED
97	4_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	5.58	2.67	8.24	9.06	3.65	12.71	20.96	17.4%	RED
121	Ichangu Narayan	Urbanizing VDC_KATHMANDU_VDC	31.59	831.53	863.12	109.40	207.89	317.29	1180.41	17.6%	RED
77	3_Kirtipur Municipality	Kirtipur Municipality	18.23	50.91	69.14	55.56	27.08	82.64	151.78	17.8%	RED
180	Sheshnarayan	Rural VDC_KATHMANDU_VDC	12.70	399.33	412.03	6.62	91.97	98.59	510.62	18.0%	RED
82	8_Kirtipur Municipality	Kirtipur Municipality	7.60	77.60	85.19	1.28	20.24	21.52	106.71	19.0%	RED
190	Devichaur	Rural VDC_LALITPUR_VDC	1.89	993.54	995.43	8.28	247.97	256.25	1251.68	19.8%	RED
167	Jhor Mahankal	Rural VDC_KATHMANDU_VDC	14.84	474.87	489.71	4.08	122.28	126.36	616.07	19.8%	RED
125	Mahankal	Urbanizing VDC_KATHMANDU_VDC	96.56	137.68	234.24	94.13	82.05	176.18	410.42	20.0%	BROWN
108	15_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	17.83	25.63	43.46	57.09	25.64	82.74	126.19	20.3%	BROWN
105	12_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	2.29	6.04	8.33	6.73	3.84	10.57	18.90	20.3%	BROWN
48	13_LSMC	LSMC	13.09	5.53	18.62	41.17	15.33	56.49	75.11	20.4%	BROWN
137	Thankot	Urbanizing VDC_KATHMANDU_VDC	42.81	433.20	476.01	10.89	127.70	138.60	614.61	20.8%	BROWN
186	Bhardeu	Rural VDC_LALITPUR_VDC	1.22	609.08	610.31	6.33	166.37	172.70	783.01	21.2%	BROWN
96	3_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	23.77	67.75	91.52	15.51	35.65	51.16	142.68	25.0%	BROWN
130	Pukhulachhi	Urbanizing VDC_KATHMANDU_VDC	11.67	88.41	100.08	0.76	37.43	38.19	138.27	27.1%	BROWN
49	14_LSMC	LSMC	5.58	11.30	16.87	107.69	47.43	155.12	171.99	27.6%	BROWN
118	Goldhunga	Urbanizing VDC_KATHMANDU_VDC	51.75	294.05	345.80	19.17	149.71	168.88	514.68	29.1%	BROWN

CONSTRAINTS ANALYSIS Annex - 3.0

SITUATION 2011 (ACTUAL)

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103	10_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	0.04	4.29	4.33	2.91	3.02	5.93	10.26	29.4%	BROWN
117	Gokarneshwar	Urbanizing VDC_KATHMANDU_VDC	11.68	285.31	296.99	31.86	140.14	171.99	468.98	29.9%	BROWN
159	Chalnakhel	Rural VDC_KATHMANDU_VDC	2.53	359.25	361.78	17.64	171.21	188.85	550.63	31.1%	BROWN
197	Lele	Rural VDC_LALITPUR_VDC	3.25	1597.29	1600.55	53.48	752.92	806.41	2406.95	31.3%	BROWN
166	Indrayani	Rural VDC_KATHMANDU_VDC	10.49	167.96	178.45	9.51	88.50	98.01	276.47	32.0%	BROWN
196	Lamatar	Rural VDC_LALITPUR_VDC	14.04	704.24	718.28	22.66	364.36	387.02	1105.29	33.0%	BROWN
75	1_Kirtipur Municipality	Kirtipur Municipality	1.69	3.08	4.77	24.91	14.95	39.86	44.63	33.5%	BROWN
198	Nallu	Rural VDC_LALITPUR_VDC	1.11	520.96	522.07	11.16	268.63	279.79	801.86	33.5%	BROWN
110	17_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	9.57	39.93	49.49	126.33	89.77	216.10	265.59	33.8%	BROWN
123	Kapan	Urbanizing VDC_KATHMANDU_VDC	134.06	70.26	204.33	100.93	160.20	261.13	465.46	34.4%	BROWN
120	Gothatar	Urbanizing VDC_KATHMANDU_VDC	100.01	82.96	182.98	118.74	159.39	278.13	461.10	34.6%	BROWN
207	Sipadol	Rural VDC_BHAKTAPUR_VDC	32.24	459.76	492.00	31.56	287.06	318.62	810.62	35.4%	BROWN
158	Bhimdhunga	Rural VDC_KATHMANDU_VDC	4.79	365.01	369.80	13.56	216.59	230.15	599.95	36.1%	BROWN
133	Satungal	Urbanizing VDC_KATHMANDU_VDC	15.26	85.22	100.49	48.32	84.45	132.78	233.26	36.2%	BROWN
111	Aalapot	Urbanizing VDC_KATHMANDU_VDC	7.91	80.81	88.72	3.41	54.84	58.25	146.97	37.3%	BROWN
104	11_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	1.00	0.94	1.94	7.96	5.97	13.93	15.88	37.6%	BROWN
165	Gagal Phedi	Rural VDC_KATHMANDU_VDC	13.24	635.19	648.43	19.28	408.17	427.45	1075.88	37.9%	BROWN
132	Sangkhu Suntol	Urbanizing VDC_KATHMANDU_VDC	8.75	717.11	725.86	20.86	474.09	494.95	1220.81	38.8%	BROWN
201	Bageswori	Rural VDC_BHAKTAPUR_VDC	2.90	538.56	541.47	41.39	372.34	413.72	955.19	39.0%	BROWN
60	3_Bhaktapur Municipality	Bhaktapur Municipality	0.40	1.29	1.69	11.56	8.47	20.03	21.72	39.0%	BROWN
185	Badikhel	Rural VDC_LALITPUR_VDC	0.10	334.94	335.04	12.82	236.57	249.39	584.43	40.5%	YELLOW
148	Tikathali	Urbanizing VDC_LALITPUR_VDC	30.22	109.16	139.38	39.33	122.30	161.63	301.01	40.6%	YELLOW
204	Gundu	Rural VDC_BHAKTAPUR_VDC	13.26	388.64	401.90	34.40	306.36	340.76	742.66	41.3%	YELLOW
127	Mulpani	Urbanizing VDC_KATHMANDU_VDC	23.24	156.00	179.24	47.61	159.39	207.00	386.25	41.3%	YELLOW
142	Imadol	Urbanizing VDC_LALITPUR_VDC	80.16	87.16	167.32	66.76	168.02	234.78	402.10	41.8%	YELLOW
149	Balkot	Urbanizing VDC_BHAKTAPUR_VDC	31.57	55.80	87.36	74.91	121.63	196.54	283.90	42.8%	YELLOW
175	Nayapati	Rural VDC_KATHMANDU_VDC	6.42	337.84	344.26	34.17	291.84	326.01	670.27	43.5%	YELLOW
102	9_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	8.78	14.08	22.86	4.56	21.46	26.02	48.88	43.9%	YELLOW
157	Baluwa	Rural VDC_KATHMANDU_VDC	5.18	365.26	370.44	13.99	316.55	330.54	700.98	45.2%	YELLOW
84	10_Kirtipur Municipality	Kirtipur Municipality	0.00	0.00	0.00	1.21	1.01	2.22	2.22	45.5%	YELLOW
206	Nangkhel	Rural VDC_BHAKTAPUR_VDC	5.35	324.08	329.42	35.00	315.77	350.77	680.19	46.4%	YELLOW
170	Lapsiphedi	Rural VDC_KATHMANDU_VDC	1.96	916.61	918.57	23.23	833.83	857.06	1775.63	47.0%	YELLOW
161	Chhaimale	Rural VDC_KATHMANDU_VDC	0.66	480.03	480.70	11.95	478.47	490.42	971.11	49.3%	YELLOW
162	Chunikhel	Rural VDC_KATHMANDU_VDC	11.88	154.65	166.52	13.56	179.36	192.92	359.44	49.9%	YELLOW
152	Duwakot	Urbanizing VDC_BHAKTAPUR_VDC	17.77	231.61	249.39	64.51	316.39	380.90	630.29	50.2%	YELLOW
156	Badbhanjyang	Rural VDC_KATHMANDU_VDC	1.58	226.71	228.29	10.66	241.26	251.92	480.21	50.2%	YELLOW
168	Jitpur Phedi	Rural VDC_KATHMANDU_VDC	11.62	402.57	414.19	28.81	451.56	480.37	894.56	50.5%	YELLOW
179	Saukhel Satidevi	Rural VDC_KATHMANDU_VDC	2.79	267.78	270.57	16.26	299.70	315.97	586.53	51.1%	YELLOW
154	Katunje	Urbanizing VDC_BHAKTAPUR_VDC	8.86	91.83	100.69	109.72	222.26	331.98	432.68	51.4%	YELLOW

CONSTRAINTS ANALYSIS Annex - 3.0

SITUATION 2011 (ACTUAL)

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83	9_Kirtipur Municipality	Kirtipur Municipality	0.00	0.00	0.00	9.78	10.60	20.38	20.38	52.0%	YELLOW
199	Siddhipur	Rural VDC_LALITPUR_VDC	3.13	70.87	74.01	22.33	104.57	126.90	200.90	52.0%	YELLOW
136	Thali Danchhi	Urbanizing VDC_KATHMANDU_VDC	9.20	177.14	186.34	50.00	262.87	312.86	499.20	52.7%	YELLOW
134	Sitapaila	Urbanizing VDC_KATHMANDU_VDC	18.21	52.48	70.70	91.67	188.44	280.12	350.81	53.7%	YELLOW
202	Chhaling	Rural VDC_BHAKTAPUR_VDC	8.09	382.85	390.94	48.58	521.06	569.65	960.59	54.2%	YELLOW
151	Dadhikot	Urbanizing VDC_BHAKTAPUR_VDC	18.83	209.89	228.73	68.13	352.67	420.79	649.52	54.3%	YELLOW
135	Syuchatar	Urbanizing VDC_KATHMANDU_VDC	5.52	58.22	63.74	60.60	149.70	210.30	274.04	54.6%	YELLOW
131	Sangkhu Bajrayogini	Urbanizing VDC_KATHMANDU_VDC	9.37	216.68	226.05	11.42	286.12	297.54	523.59	54.6%	YELLOW
101	8_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	0.00	0.15	0.15	4.90	6.21	11.11	11.26	55.1%	YELLOW
163	Dahachok	Rural VDC_KATHMANDU_VDC	1.30	254.30	255.59	26.25	353.46	379.71	635.30	55.6%	YELLOW
76	2_Kirtipur Municipality	Kirtipur Municipality	1.92	5.57	7.49	16.83	30.74	47.58	55.06	55.8%	YELLOW
86	12_Kirtipur Municipality	Kirtipur Municipality	1.77	12.18	13.95	14.17	36.37	50.54	64.49	56.4%	YELLOW
138	Tinthana	Urbanizing VDC_KATHMANDU_VDC	2.97	6.16	9.13	46.18	73.53	119.70	128.83	57.1%	YELLOW
145	Sainbu Bhaisepati	Urbanizing VDC_LALITPUR_VDC	5.27	45.66	50.93	125.53	235.29	360.82	411.75	57.1%	YELLOW
88	14_Kirtipur Municipality	Kirtipur Municipality	7.40	28.76	36.16	13.47	68.03	81.51	117.67	57.8%	YELLOW
113	Bhadrabas	Urbanizing VDC_KATHMANDU_VDC	2.46	55.89	58.35	10.04	98.63	108.67	167.02	59.1%	YELLOW
205	Nagarkot	Rural VDC_BHAKTAPUR_VDC	3.44	359.32	362.76	24.12	560.14	584.27	947.03	59.1%	YELLOW
153	Jhaukhel	Urbanizing VDC_BHAKTAPUR_VDC	5.20	164.58	169.78	39.53	312.81	352.34	522.12	59.9%	YELLOW
92	18_Kirtipur Municipality	Kirtipur Municipality	0.06	0.93	1.00	12.51	20.64	33.15	34.14	60.4%	GREEN
193	Godamchaur	Rural VDC_LALITPUR_VDC	1.57	103.15	104.73	18.60	189.14	207.73	312.46	60.5%	GREEN
150	Changunarayan	Urbanizing VDC_BHAKTAPUR_VDC	5.42	235.37	240.79	23.11	414.09	437.19	677.99	61.1%	GREEN
143	Khokana	Urbanizing VDC_LALITPUR_VDC	0.48	110.71	111.20	11.66	194.01	205.67	316.87	61.2%	GREEN
91	17_Kirtipur Municipality	Kirtipur Municipality	0.27	0.95	1.22	29.11	47.94	77.04	78.26	61.3%	GREEN
144	Lubhu	Urbanizing VDC_LALITPUR_VDC	16.95	180.65	197.60	45.14	397.38	442.52	640.12	62.1%	GREEN
177	Ramkot	Rural VDC_KATHMANDU_VDC	2.86	180.20	183.06	34.90	360.83	395.74	578.80	62.3%	GREEN
140	Dhapakhel	Urbanizing VDC_LALITPUR_VDC	26.56	64.34	90.90	47.02	229.13	276.15	367.05	62.4%	GREEN
100	7_Madhyapur Thimi Municipality	Madhyapur Thimi Municipality	2.08	9.06	11.14	13.06	41.30	54.36	65.50	63.1%	GREEN
79	5_Kirtipur Municipality	Kirtipur Municipality	0.00	0.00	0.00	4.62	7.95	12.57	12.57	63.2%	GREEN
188	Chapagaun	Rural VDC_LALITPUR_VDC	2.68	189.93	192.61	58.53	476.04	534.57	727.17	65.5%	GREEN
191	Dukuchhap	Rural VDC_LALITPUR_VDC	0.10	158.13	158.23	9.39	323.31	332.70	490.92	65.9%	GREEN
164	Dakshinkali	Rural VDC_KATHMANDU_VDC	0.44	132.15	132.58	21.97	305.67	327.64	460.22	66.4%	GREEN
174	Nanglebhare	Rural VDC_KATHMANDU_VDC	1.88	662.92	664.80	23.21	1396.13	1419.34	2084.14	67.0%	GREEN
90	16_Kirtipur Municipality	Kirtipur Municipality	3.38	15.60	18.98	13.14	65.45	78.60	97.58	67.1%	GREEN
128	Naikap Naya Bhanjyang	Urbanizing VDC_KATHMANDU_VDC	0.22	1.81	2.03	38.94	84.19	123.13	125.16	67.3%	GREEN
61	4_Bhaktapur Municipality	Bhaktapur Municipality	1.37	21.83	23.20	22.95	97.32	120.27	143.47	67.8%	GREEN
200	Thaiba	Rural VDC_LALITPUR_VDC	0.89	28.22	29.12	42.64	162.34	204.97	234.09	69.3%	GREEN
141	Harisiddhi	Urbanizing VDC_LALITPUR_VDC	7.26	38.97	46.23	42.09	221.56	263.65	309.88	71.5%	GREEN
208	Sudal	Rural VDC_BHAKTAPUR_VDC	6.09	166.15	172.25	31.09	528.55	559.64	731.88	72.2%	GREEN
209	Tathali	Rural VDC_BHAKTAPUR_VDC	2.86	184.52	187.38	31.66	650.56	682.23	869.61	74.8%	GREEN

CONSTRAINTS ANALYSIS Annex - 3.0

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203	Chitapol	Rural VDC_BHAKTAPUR_VDC	2.23	94.05	96.28	30.80	380.44	411.23	507.51	75.0%	GREEN
195	Jharuwarasi	Rural VDC_LALITPUR_VDC	1.59	73.27	74.86	19.25	286.99	306.24	381.10	75.3%	GREEN
112	Balambu	Urbanizing VDC_KATHMANDU_VDC	1.19	13.13	14.32	37.21	160.27	197.49	211.81	75.7%	GREEN
93	19_Kirtipur Municipality	Kirtipur Municipality	1.21	14.79	16.00	4.20	63.78	67.98	83.97	76.0%	GREEN
155	Sirutar	Urbanizing VDC_BHAKTAPUR_VDC	0.13	0.31	0.44	31.41	104.78	136.19	136.64	76.7%	GREEN
189	Chhampi	Rural VDC_LALITPUR_VDC	0.27	99.40	99.67	22.59	429.94	452.52	552.20	77.9%	GREEN
89	15_Kirtipur Municipality	Kirtipur Municipality	5.21	35.50	40.71	22.00	222.52	244.52	285.23	78.0%	GREEN
146	Sunakothi	Urbanizing VDC_LALITPUR_VDC	0.07	15.92	15.99	46.05	239.61	285.66	301.65	79.4%	GREEN
85	11_Kirtipur Municipality	Kirtipur Municipality	0.00	0.00	0.00	13.12	50.70	63.83	63.83	79.4%	GREEN
80	6_Kirtipur Municipality	Kirtipur Municipality	0.00	0.47	0.47	2.83	13.65	16.48	16.95	80.5%	GREEN
147	Thecho	Urbanizing VDC_LALITPUR_VDC	0.01	9.50	9.51	51.91	263.98	315.89	325.40	81.1%	GREEN
129	Naikap Purano Bhanjyang	Urbanizing VDC_KATHMANDU_VDC	1.06	3.11	4.17	28.30	141.48	169.79	173.95	81.3%	GREEN
139	Bungmati	Urbanizing VDC_LALITPUR_VDC	0.26	52.38	52.64	16.87	319.23	336.09	388.74	82.1%	GREEN
87	13_Kirtipur Municipality	Kirtipur Municipality	0.46	5.53	5.99	8.43	69.85	78.29	84.27	82.9%	GREEN
	Grand Total		**5221.38**	**35652.50**	**40873.88**	**6610.23**	**24703.34**	**31313.57**	**72187.45**	**34.2%**	

Annex 4. List of identified projects through stakeholders' meetings

Following is the list of the projects that have been collected through various discussions and consultation meetings.

Strategy 1: Planning to be done at two Levels: Macro (Valley Level) and Micro (Municipal Level)
1. Construction of L-I-A Center
2. Land Bank Establishment
3. Study of carrying capacity of the Valley (KV limit to growth)
4. Earthquake resistant green cities (Satellite Town constructions)
5. Analysis of land management as per land economy policy
6. Study on private land development projects

Strategy 2: Prepare Constraints and sensitivity based zoning and Land use plan to guide urban expansion and Risk Sensitive Land Use Plan of Kathmandu Valley
1. Preparation of Planning Bye-laws
2. Preparation of guidelines for Land Use Zoning
3. Study of carrying capacity of KV
4. Land Information System
5. Digital Address system for municipalities
6. Information on street names, direction, and area
7. Study on property value impact due to road widening
8. Construction of Utility Corridor
9. GIS mapping of urban roads of KV
10. Updating of Building Bye-laws
11. Updating of RSLUP as per JICA's study
12. Preparation of Land Development Guidelines
13. Feasibility study of Rental housing in KV

Strategy 3: Develop Urban Pressure and Risk Resilient Urban Infrastructure
Water Supply
1. Identify major water recharge areas in KV and develop legal provisions to protect them
2. Introduce mandatory provision for rainwater harvesting at public, household and community level
3. Speed up the process of improving Bulk Distribution System and Distribution Network Improvement within the year 2020.
4. Strengthen Non-Revenue Water management to control water leakages and illegal connections and improve the revenue and return on investment for KV water utilities.
5. Develop and implement stringent policies to prohibit excessive ground water extraction
6. Plan and build community water storage for emergency purposes
7. Upgrade the existing Sewage Treatment Plants to treat sewage before disseminating into river
8. Build Community Based Waste Water Treatment Plant along major rivers in KV, such as Kathmandu Valley Waste water Management project
9. Promote and develop incentives to install waste water treatment system in institutional buildings

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(for example : Tokha Satya Sai Shiksha Sadan)
10. Develop regulations to prohibit direct flow of agricultural and industrial wastes into river
11. Develop incentive mechanisms to promote decentralized waste water treatment System (DEWATS) before discharging into rivers and streams
12. Land Area management for Water Treatment Plants, Sewage Treatment Plants and DEWATS
Solid Waste Management
13. Develop policies to practice waste segregation at Household level
14. Regulate solid waste collection and management through public- private partnership
15. Build model waste management plant that operates under the model of Reduce-Reuse-Recycle and includes areas for Household composting and material recycling
16. Coordinate with the SWMRTC, municipalities and concerned stakeholders on the sustainable management of solid waste in Kathmandu Valley to regulate and upgrade the current practices of solid waste collection and management
17. Construct Sanitary landfill site to be constructed for the municipality or cluster of municipalities
18. Awareness campaigns to promote waste segregation
19. Land Management for Sanitary Landfill Sites
Road Network
20. Prepare Kathmandu Valley Urban Road Standard, Urban Road safety management system, natural hazards and climate change risk standard
21. Road network planning considering disable friendly regulations
22. Preparation of Street Beautification Guidelines
23. Develop pilot project for utility corridor in urban road easements
24. Implementation Study of Restructured Bus Routes (follow up actions from KSUTP)
25. Study of multi-dimensional effects due to road widening in KV
26. Development of Integrated Green Surface Parking Lots on the banks of Rudramati
27. Implementation of pilot routes along selected key corridors (follow up actions from KSUTP)
28. Completion of Inner Ring Road
29. Feasibility of constructing utility and services ducts and renting out spaces within it to utility and service providers for cost recovery or profit basis
30. Regular maintenance of existing road networks
Transport and Traffic Management
31. Introduction of Prepare Kathmandu Valley Urban Transport Master Plan and Local Area Plans for Transport Management
32. Introduction and Maintenance of traffic signals for pedestrian crossings in main roads
33. Traffic Diversion from Core Historic City Area
34. Periodic monitoring of land use and transportation interface
35. Elimination of direct Entry to premises from the main roads and Highways
36. Improvement of accessibility to all wards and main areas
37. Build Overhead Bridge, Subways, Bus Bay and Taxi Stands at strategic locations
38. Traffic Light System Installation
39. Installation of Bicycle Stands (with 50 bicycle at each stand)

40. Installation of Solar Lights in Bus Stands
41. Construction of Exclusive Pedestrian Path and Cycle Track on widened roads
42. Pilot run of electric bus service (hop in hop out) along two Historic City Routes (HC1 and HC2 as identified by KSUTP) as a part of the Project on Pedestrianisation of Historic City Corte
43. Feasibility Study of hop in hop out bus services along Inner Ring Road
44. Impact on Accessibility resulting from the implementation of BRT along two selected cross town corridors (four radial corridors)
45. Study of Mass Rapid Transit System Options
46. Expansion of Tribhuvan International Airport
47. Study of Bike and Ride, Park and Ride Facilities at strategic bus stops along Inner Ring Road
48. Cordon Survey and Parking Demand Estimate along Inner Ring Road and Middle Ring Road as a first step to undertake Peak Hour Pricing or cordon pricing to discourage motorised vehicles under different PT scenarios
49. Development of Parking Strategy and Policy and Trial of Installing Parking Meters or Parking Marshalls
50. Maintenance and activation of non-operational traffic lights at 13 major road junctions in the KV
    - Keshar Mahal
    - Durbar Marg
    - Thapathali
    - Putalisadak
    - Maitighar
    - Tinkune
    - Kalimati
    - Gaushala
    - Kaushaltar
    - New Baneshwore
    - Padmodaya Mod
    - Koteshwor
    - Singhadurbar
51. Regular maintenance of operational traffic lights at 6 junctions within the Kathmandu Valley
    - Sallaghari Chowk
    - Gatthaghar Chowk
    - Jadibuti Chowk
    - Munibhairav
    - Thimi Chowk
    - Suryabinayak Chowk
52. Regular Maintenance and regulation of 9 non-operational pedestrian crossing light
    - Trichandra Campus area
    - Old Buspark
    - Kalimati
    - In front of Baghdurbar
    - Bhotebahal Chowk
    - Newroad
    - In front of Alka Hospital
    - Shankardev Campus area
    - Singhadurbar chowk
53. Installation of traffic lights in 17 major road junctions

    Kathmandu
    - Narayan Gopal Chowk
    - Chabahil
    - Old Baneshwore
    - New Buspark
    - Kalanki
    - Balkhu
    - Babarmahal
    - Tripureshwore
    - Krishna Pauroti
    - Lainchaur
    - Balaju

    Lalitpur
    - Satdobato
    - Pulchowk
    - Gwarko Chowk
    - Jawalakhel
    - Lagankhel

    Bhaktapur
    - Thimi

Housing

54. Develop and implement plans for slum and squatter resettlement and implementation of plans similar to the Ichangu Narayan Land Pooling Project under 'Urban Poor Housing Program'
55. Review, update and monitor group housing standards.
56. Provide incentives mechanisms (such as density bonuses or property tax breaks) for private sector projects in the Yellow and Green Zones, which include low-income housing.
57. Develop regulatory framework mainly for rental services
58. Develop incentive policies for rental control

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59. Facilitate a community based assessment of current buildings (could be used to inform KV broader risk assessment).
60. Introduce awareness campaigns to promote further the consideration of para-seismic measures in the design and construction of new housing
61. Prohibit vertical division of buildings mainly in city core area and develop incentive mechanism to encourage House Pooling Concept
Strategy 4: Develop Environmental Friendly and Resilient Planning Approach
Planning
1. Prepare and Implement Kathmandu Valley Disaster Risk Management Plan
2. Preparation of vision plan for redevelopment of urban areas of KV
3. Introduction of property rights for access to natural resources as sunlight, air, Himalayan View, landscape.
4. Establish topographical database of KV in GIS
5. Identification and Removal of Dangerous Buildings and Structures (due to any kind of disaster)
6. Introduce Peer Review of Building Design, Permit Process and compliance with Building Codes
7. Elimination of Haphazard Hoarding Boards Display / Associated Traffic Accidents and Disasters
8. PPP for operation and management of
a) Open parks
b) Ponds/ water bodies
c) O/H road crossings
d) Organic waste recycling
Urban Forest
9. Prepare Guidelines for the Selection of appropriate tree species for scientific plantation to ensure that the tree species are best suited for the specific urban areas
10. Designate special forest areas and conduct a feasibility study to set up a "payment for ecosystem services" program (PES). Explore options through the PES program to compensate landowners for preserving the special forest areas and setting up a pilot cash incentive program to encourage local community management of forested areas. Consider levying special tax on urbanizing areas to support the PES program.
11. Manage the existing protected forests (eg.Shivapuri National Park) along with Community and religious forests to promote eco-tourism
12. Conduct tree and shrubs plantation campaigns; promote their maintenance through Corporate Social Responsibility
13. Conduct regular maintenance of existing urban forestry and timely removal of hazardous trees that are threat to human safety
14. Develop guidelines for the selection of appropriate tree and shrub species for scientific plantation to ensure that the tree species are best suited for the specific urban areas
15. Introduce regulatory provisions to include greenbelts as integral part of road network planning and river bank management
Pollution – Land, Water, Air, Visual
16. Relocate heavy polluting industries from the core residential areas of KV
17. Preparation and implementation of guidelines for activities and usage of "Polluters pay" collection tax

18. Elimination of heavily polluting Cottage and other industries in the urban areas
19. $PM_{2.5}$ and PM_{10} (Monitor and survey) Real time data access
20. Identification of debris disposal areas
21. Community based Waste Banking
22. Maintenance of Urban road surface
23. Study on Solid waste management in private level
24. Community Based Waste Water Treatment Plant along major rivers
25. Elimination of overhead wires, cables in the main streets
Parks and Open Space
26. Undertake a gap assessment to determine availability, connectivity and shortages of open spaces across the valley, particularly from a perspective of providing emergency evacuation spaces during hazard events, ecological benefits such as storm water detention areas, as well as public health benefits and further prepare open space plan, strategies, programs, cost and funding mechanism to increase open space
27. Identify land areas to build and manage urban parks, entertainment and socializing spaces at neighborhood level
28. Prepare Open Space Atlas
29. Overlaying of Open Space Atlas database on to cadastral maps of KV
30. Develop open space standards for Kathmandu Valley
31. Development of Animal Rescue Center and Central Zoo in Bhaktapur area
32. Conduct Greenery enhancement programs along the river banks [Manmohan Park, BP Park, Martyrs Memorial Park)
Water Bodies Management
33. Monitor and survey of water quality in water bodies within KV
34. River corridor project (along Bishnumati, Sangle Khola, Mahadev Khola, Nakkhu Khola and Karmanasha Khola)
35. Develop regulations to prohibit direct flow of agricultural and industrial wastes into river
36. Develop incentive mechanisms to promote decentralized waste water treatment System (DEWATS) before discharging into rivers and streams
37. Upgrade the existing Sewage Treatment Plants
38. Develop Integrated River Bank Beautification and Management Plan
39. Coordinate and compliment planning with HPCIDBC for the improvement of Bagmati and Vishnumati River Basin
40. Identify and develop plans to conserve traditional water systems, ponds, wetlands and other groundwater recharge areas
41. Work with local community groups to restore and manage traditional water systems, ponds, wetlands and other groundwater recharge areas
42. Conduct River Cleaning Campaigns in collaboration with public and private organizations
Energy Efficiency
43. Land management for large-scale solar farm
44. Advocate for urban centre focused hydropower project
45. Installation and maintenance of solar lights in the strategic urban roads
46. Introduction of net-metering, bilateral connection that allows people to buy and sell electricity

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47. Develop programs and incentive mechanisms to promote installation of renewable energy sources in urban households
48. Conduct awareness and Training programs to educate and involve people in environment friendly development activities (Eg. Urban forestry, open space management, Pollution control etc.)
Strategy 5: **Promote Urban Regeneration of Historic City Core**
1. Historic Settlement Redevelopment Projects
2. Pedestrianization of the historic core areas
3. Implementation of urban regeneration pilot project
4. Conservation of world heritage site surroundings (Study and Implementation)
Strategy 6: Promotion of Tourism and Service related industries
1. Urban Haat Bazar (weekly market)
2. Development of Tourist Routes
3. Land Banking for Recreational Parks
4. International Sculpture Park
5. Kathmandu Valley Cultural and Development Museum
Strategy 7: Promotion of Gender Equity and Social Inclusion
Organization of Retail Vegetable Market at 10 different places
Proper provision for Street vendors, workshops, and repair shops
Establishment of Auto-village
Study on legal management of informal markets in KV (vegetable markets/ fruits markets etc.)
Strategy 8: Encourage Safety and Security in urban development
Develop security circuit within the KV with surveillience for people and traffic at KV entry points
Digital Hub for inter-agency data sharing
House - metric blocking system
Application of Geographic information system for local organizations, community analysis, public administration and economic development.
Establishment of Urban safety units – latest techniques to evaluate crime prevention projects, including but not limited to locating hot-spot areas of urban crime, determining safe routes
Relocate polluting industries to lessen health and safety risks
Establish sport and recreation centers to promote youth involvement in positive measures
Establish Transit House within Police Stations
Establish child care centers and Old age homes at neighborhood/ city level
Develop and implement Urban Roads Standard for Kathmandu Valley
Develop standards for requirement of security personnel and related infrastructures (Police station, correction facilities)
Strict planning permits for skyscrapers and parking provisions, commercial spaces
Conduct awareness programs that focus on community policing: siren system + mechanism to connect to police
Strategy 9: Promote Private Sector Involvement in urban development activities
Identify and publish long list of projects where private sector can participate
Develop policies to facilitate private sector involvement in urban development activities
Few examples of such model would be: ▪ Multi Storied Car Park at the Central Business Districts ▪ Urban Re-generation of City Core areas ▪ Management and Operate Public Bus Terminals, Airports

- Utility Management
  - Water Supply
  - Solid Waste Management
  - Telecommunication
  - Electricity
- Maintenance of Urban Roads
- Operate and Maintain Public Transportation including
  - Buses
  - Taxies
  - Monorails
  - Cable Car
  - Trams
  - Metro System
  - Mass Rapid Transit System
  - Flyovers and Interchanges
- Build Smart Cities
- Construct and manage convention centers/ exhibition centers
- Participate in heritage conservation and maintenance
- Conservation of Culture, Music and Arts etc.

Strategy 10: Emphasize on Information, Communication and Advocacy

1. Media Mobilization for Awareness
2. Construction of Kathmandu Valley L-I-A (Learning – Innovation – Application) Center
3. Public Consultation Workshops on KV's development
4. Kathmandu Valley Library
5. Regional Seminar of South Asia's Urban Development Authorities
6. Study and revision of regulatory regimes and acts related to KV's development

Strategy 11: Youth Mobilization and Participation in Urban decision making processes and development activities

1. Training programs and campaigns for youth on emergency disaster response
2. Leadership development programs

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Annex 5. LIST OF CONSULTATIVE MEETINGS FOR SDMP 2015-2035

Interaction program held for Long term Development Plan and 20 years strategic development master plan(2015-2035)

Date	Program	Venue	No. of Participants
15 July, 2012	Interaction Program on Long Term Development Concept of Kathmandu Valley	Covered Venue[1]	26
24 Feb, 2014	Interaction Program on Long Term Development Concept of Kathmandu Valley	Covered Venue	24
7 Jan, 2014	Interaction with CA Members	Covered Venue	77
19 Jan, 2014	Updating Long Term Development Concept Plan	Covered Venue	50
15 March, 2015	Interaction Program with CA Members	Covered Venue	67
30 March, 2014	Interaction Program to Update Long Term Development Concept Plan	Covered Venue	30
20 April, 2014	Interaction Program to Update Long Term Development Concept Plan	Covered Venue	23
28 April, 2014	KVDA Day Celebration - 3rd Anniversary Day and Discussion on SDMP	Covered Venue	87
20 June, 2014	Interaction Program for Vision for Kathmandu Valley	Covered Venue	38
2 June , 2015	Interaction Program with Journalist	Nepal Press Institute	45

Meetings held for Kathmandu Urban Transport Master Plan

Meeting	Date	Program	Venue	No. of Participants
SC[2]	15th August,2014	Presentation of the Inception Report	KVDA	14
WG1[3]	14th November, 2014	Outline of KUTMP Study	KVDA	12
WG1	15th November, 2014	Protection of Forest, Agricultural Land, River Bank Allocation of Urban Function	KVDA	18
CWG[4]	19th November, 2014	Major findings in phase1 (land use and urban development)	MOPIT	28
CWG	20th November, 2014	Major findings in phase1 (Trasport)	MOPIT	28
WG1 WG2[5]	21st November, 2014	Basic policy for land use and urban development Population distribution with Population density	KVDA	17
CWG	24th November, 2014	-Precondition for Discussion	MOPIT	

[1] Venue with full facility (multimedia, workshop setting)
[2] Steering Committee
[3] Working Group 1(Land and Urban Development)
[4] Collective Working Group
[5] Working Group2(Transport)

Meeting	Date	Program	Venue	No. of Participants
		-Basic Policy for Structural Plan -Primary Theme for WG		
WG1	28nd November, 2015	Appropriate urbanization control with zoning, taxation system and new town development Taxation system	KVDA	15
WG2 WG3[6]	4th December, 2014	-Comprehensive Urban -Transport Urban Structure Plan -Bottlenecks and Missing Link on Arterial Road Network	DOR	16
WG1	11th December, 2014	Disaster Management	KVDA	16
WG2 WG3	12th December, 2014	-Road Network outside DID -Public Transport	DOR	21
CWG	14th December, 2014	For pre-authorization of Urban Structure before the authorization by Steering Committee	MOPIT	21
WG1	18th December, 2014	For pre-authorization of Urban Structure before the authorization by Steering Committee	DOR	16
WG3	18th December, 2014	Traffic Management	DOR	18
SC	21 th December, 2014	For "authorization" of Urban Structure Concept by SC and reporting the progress of the Master PlanContents	MOPIT	16
Deputy PM	21 th December, 2014	Progress Summery	Deputy PM's office	
WG1-RSLUP	9th February , 2015	About Functions of New Urban Area	GENESIS Consultancy (P0 Ltd.	11
WG1-RSLUP	12th February , 2015	About process of decision of Sub-center's location	GENESIS Consultancy (P0 Ltd.	11
WG2	16th February , 2015	-Public Transport Strategy -Public Transport Network Plan -Introduction of New Public Transport System	DOR	16
WG1	27th February , 2015	Urban Management Measure for Appropriate Urbanization Control and Urban Development	KVDA	19
WG1	27th February , 2015	About Locations of New Urban Area	KVDA	19
WG2	1st March ,2015	-Public Transport Strategy -Public Transport Network Plan -Introduction of New Public Transport System	DOR	18

[6] Working Group3(Traffic Management)

Meetings held for Risk Sensitive Land Use Plan

Meeting	Date	Venue	No. of Participants
General Meeting 1	16th November 2014	GENESIS Consultancy (P0 Ltd.	7
General Meeting 2	28th November 2014	UNDP/CDRMP Office.	6
General Meeting 3	1st December 2014	KVDA	15
General Meeting 4	8th December 2014	GENESIS Consultancy (P) Ltd.	7
General Meeting 5	29th December 2015	GENESIS Consultancy (P) Ltd.	8
General Meeting 6	25th January 2015	GENESIS Consultancy (P) Ltd.	8
General Meeting 7	29th March 2015	GENESIS Consultancy (P) Ltd.	10
General Meeting 8	7th May 2015	GENESIS Consultancy (P) Ltd.	7
Sectional Meeting 1	12th February 2015	GENESIS Consultancy (P) Ltd.	14
Sectional Meeting 2	8th March 2015	GENESIS Consultancy (P) Ltd.	10
Technical Meeting 1	29th March 2015	GENESIS Consultancy (P) Ltd.	13
Technical Meeting 2	7th May, 2015	GENESIS Consultancy (P) Ltd.	10
Technical Meeting 3	24th May, 2015	GENESIS Consultancy (P) Ltd.	15

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Consultative Meetings with General Public at Municipal Level

Meeting	Date	Program	Venue	No. of Participants
CM[7]	19th March 2015	Consultation With stakeholders	Kamalpokhari , Mahalaxmi Municipality Office	7
CM	22th March 2015	Consultation With stakeholders	Jorpati, Attarkhel, Gokarneshwor Municipality Office	8
CM	23th March 2015	Consultation With stakeholders	Kharipati, Mahamanjushree Nagarkot Municipality Office	5
CM	23th March 2015	Consultation With stakeholders	Gamcha, Ananteshwor Municipality Office	5
CM	25th March 2015	PGIS and Consultation	Ananteshwor Municipality, Green Land Hotel.	22
CM	26th March 2015	Consultation With stakeholders	Gokarneshwor Municipality, Nabil Food Land.	66
CM	30th March, 2015	Interaction Program with Banking Sector, Insurance Sector and Professional Society	KVDA	32
CM	10th April 2015	Consultation With stakeholders	Mulkharka,Gokarneshwor Municipality	18
CM	10th April 2015	Consultation With stakeholders	Nayapati,Gokarneshwor Municipality	25

[7] Consultative Meeting

Annex 6. Review of SDMP by World Bank Team

Thank you for inviting us to review the Strategic Development Master Plan, 2015-35 (SDMP) for Kathmandu Valley. We would like to congratulate the KVDA for the SDMP that covers a lot of ground, land use, urban regeneration, environment, tourism, resilience. The document paints a clear description of the issues and challenges, which have extensively incorporated many studies done already. We also understood the document was prepared purely by the local team's efforts and initiatives led by the KVDA, and would like to congratulate on spearheading the important efforts and demonstrating leadership from the KVDA on this critical agenda. Our comments will more focus on the high-level strategic relevance, implementation of the Plan. We hope you find the comments useful in finalizing the document.

Executive summary. The executive summary could be better organized to bring about a balance between background information, and strategies and actions. The bulk of background and process information could be synthesized one or two paragraphs, with the remaining part of the Executive Summary focusing on the vision (may include expected outcome of the SDMP) and key strategies, which are the most important content for the SDMP.

Vision and strategies. The vision could benefit from further revision to become more succinct, describing the clear and inspirational desired change resulting from implementation of the SDMP. A phase, "by enhancing the interdependence of nature, society and culture" is a bit distracting in the vision and rather means to realize the vision. It may be, for instance, changed to "Making the Kathmandu Valley as the most livable, prosperous, attractive city in Asia", which can relate to the goals such as safe and clean (livable), elegant, beautiful (attractive). It may add "resilient" in the vision and goals as resilience is major part of the strategies delineated in the SDMP. We also would like to highlight the importance of 'implementation' aspects: the strategies are of course the right and first step towards implementation but the devil is really in the details of the implementation

Timeframe and implementation. A 20-year timeframe (2015-2035) is actually short and this actually requires a pretty detailed master plan and implementation mechanisms. The document points to several priority actions and action plans and those seem to be steering in the right direction, however, it is not clear that the specific implementation actions and they are mostly at a "strategic level". The key would be how these actions are implemented on the ground. One consideration is for KVDA is to think this as a longer-term say 30-50 years since the document remains at a concept plan level.

Key planning parameters. Ideally, a master plan would go down to the scale and details (e.g. parcel level zoning and neighborhood plans). Perhaps for the future thinking, the KVDA particularly needs more clearly-defined land use maps to guide spatial development to promote a compact city and preserve agricultural land described in the SDMP. For example, while new areas located near transport nodes foster high density commercial activities and residential housing, other areas preserve the intimate nature of historical buildings for adaptive reuse. Where the central business district sees demand for taller office towers, care is taken to create open spaces and parks. Key components of a master plan must include planning parameters – such as allowable built up floor areas, types of land use, parcellation, infrastructure reserves, protected zones etc. While the current master plan has the big parameters in place, such as population growth, overall broad structure of the city etc. which is good, in the future, the KVDA should consider, in the future, developing real details at the granular level or proposal on how population and jobs are planned to be distributed and what infrastructure is required spatially on a plan. It will need more detailed design guidelines (parcels, building - height, materials, elements, public spaces, infrastructure, etc.). Urban design and public spaces are critical to achieve the vision of the SDMP in terms of economic prosperity, livability, resilience, attractiveness of

the KV. The Bank will be supportive on preparing, for example, the urban design policy framework, KV public space strategy and specific design guidelines.

Institutional arrangements. Leading/supporting agencies for action plans are clearly defined. However, it needs to be careful about what would be realistic to implement the plans based on current (or near future) capacity of responsible agencies. It seems that the KVDA and municipalities are responsible for most of the action plans. It may need a following-up plan for institutional capacity building, especially by working closely with MoFALD. In addition, it is good to be extensive in the scope of the action plans. The plans should be more implementation oriented, not just be the plans to plan, must be the plans to implement to avoid ending up producing many other paper plans. We recommend KVDA think through prioritize specific action plans with clearer timeframe within 20 years of implementation. (i.g. short term 5year, 10year, 20years etc.), which can also be reviewed every 5 years. It will make the SDMP more realistic and feasible.

Financing. From experiences from developed countries, one of the purpose of a Master Plan is to give investors/developers the confidence that he is entitled to build on a certain location at a plot ratio of a certain use. In this sense, the current plan may be still at a higher level document, as opposed to firm plans for developers to be able to come in and invest. With this said, this strategic document provides excellent starting point for the KVDA to further develop financing plan from both private and public sectors.

In the Chapter 1, it would be great to add a key map in Figure 1.3 (p2), showing a geographical location of KV in Nepal. In the Chapter 2, it would be logical to bring the National Urban Development Strategy to put the SDMP in the context of the national development and enhance the integrity with other parts of the country. Some of important sectoral maps in the document are not easy to read and need higher resolution.

I wish you the best luck in finalizing the report and look forward to discussing further.

Review of SDMP by Oscar Carracedo, Asst. Prof., MSc Urban Planning & Design, M.Arch, Singapore

It was a real pleasure to meet you at the EGM, at it has been a real pleasure to go through the SDMP. Let me first congratulate you for the impressive work done.

I personally think that the document is a very good example of strategic planning that achieves to incorporate all the relevant aspects of the territory. It is quite hard for me to add new things to the document without being too naive and of course I will need more time to analyze it and to learn the specificities of the territory. Differences aside, the reading of the document has shown me some similarities to the Singaporean future scenarios that are now under study. Singapore has pretty much the same area and is dealing a 2030 scenario of 6.9 M inhabitants, which means a similar population to the one that your document is estating for KV. In that future scenario for KV, the question of density will be crucial, similarly to what Singapore is considering now.

Although my comments at this stage can only be very general I can say that the document constitutes a great base from where other levels of planning can start from. In this sense, and related to density, I personally think that it would be very important to analyze, study and propose specific urban models for urban development and redevelopment that tackles the issue of high density and high quality urban environments. In this sense, the role and incorporation of public spaces in the consolidated and high density areas constitutes an essential strategy towards a livable and sustainable city.

Moreover, the specific plans for infrastructures and the metabolism aspects of the city (water, energy, waste...) will become key aspects for the future sustainable development of KV.

I find specially interesting all the analysis done in order to determine the planning constraints. The final constraint map constitutes in this sense a document of immeasurable value which establishes a great base for future detailed and master planning. The proposal of resilient infrastructures and urban developments in front of the different risks that the valley faces is another of

Thank you very much Yogeshwar for letting me know this amazing work that you are doing, and let me offer my expertise and knowledge on urban planning, regeneration and development for any future consultancies you need for the development of the SDMP, it would be a real pleasure to participate in such an interesting and challenging plan. Please let me know how can I contribute as a consultant and of course let's think in partnership possibilities with the university.

One possibility that I can think off is using consultancies and agreements with our institution so that we can develop master plans, detailed planning or spatial plans for specific areas where you need to have more detailed information and proposals dealing with resilience, flooding, density, infrastructures, etc. These proposals can be developed in the frame of different studios or as professional consultancies.

Review of SDMP by UNISDR team

It was nice talking to you and thank you for taking the call at late hours.

Mr. Parajuli as discussed between you and Jerry, here are the next steps and follow up actions.

Areas of discussion:

- Kathmandu Valley Development Authority (KVDA) covers 21 municipalities some of which are prone to multiple hazards. While the elections are due for end 2015, there is no guarantee of that taking place and will depend on constitutional reforms. Most of these municipalities do not have enough capacity to implement current and new plans/strategies. Following the elections, new local leaders are expected to manage the implementation of "Kathmandu valley 20 Years Strategic Development Master Plan (2015-2035)" including the reconstruction plan- for which capacity building would be necessary.

- The new "Kathmandu Valley 20 Years Strategic Development Master Plan (2015-2035)" would be adopted in the next few months. To support its implementation (particularly the suggested strategies and actions) including the reconstruction plan, there is a need to conduct a capacity and priority assessment. Kathmandu City and few others had conducted their capacity assessment in 2013 (available at: **http://tinyurl.com/qbrbbvc)**. New proposed assessments would be based on the global standards recently adopted and support the municipalities in identifying priority actions that would contribute to the master plan plus the reconstruction plan from a resilience and disaster risk reduction angel. further, since PDNA does not currently undertake in-depth investigative processes associated with failure analysis. These assessment would identify the causes of failure and support build-back-better planning efforts otherwise the end result will be to just build back.

ANNEX 7:

MONITORING AND EVALUATING FRAMEWORK OF ACTION PLANS

Kathmandu Valley Development Authority

Short Term Strategic Action Plan (3 Years: FY 2072/073 - 074/075)

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
Startegy 1: Planning to be done at two Levels: Macro (Valley Level) and Micro (Municipal Level)	Review and revise existing regulations, plans, tools and guidelines to implement SDMP 2015-2035	Preparation of Comprehensive Physical Development Plan	KVDA	Partner agencies	Availability of Comprehensive Physical Development Plan
		Develop Kathmandu Valley Land Use Policy in consonance with the National Land Use Policy 2069	MoLRM, MoUD	KVDA, Municipalities	Availability of Kathmandu Valley Land Use Policy
		Review and revise the existing Building Bye laws; Introduce Peer Review of Building Design, Permit Process and compliance with Building Codes	KVDA	MoUD, Municipalities	Number of structures complying to building bye-laws and building codes
	Guide related line agencies/authorities for major land development, re-settlement plans in KV in compliance to eco-friendly standards	Impact study of land development and management mechanisms, Road widening Programs in KV (Analysis of livelihood change, rental status, Change in usage of buildings, Land use change)	KVDA	Partner agencies	Availability of study report
		Feasibility study for land bank establishment	KVDA		Availability of study report
		Devise policies for Government subsidy in land pooling and subsidized interest from financial institution for planned urbanization	KVDA, MoUD		Availability of policies
		Develop Land Valuation guidelines for KV	MoLRM	KVDA, MoUD	Availability of Land Valuation guidelines for KV
	KVDA to coordinate with local bodies for development and implementation of Local Level Development Plans in strict compliance to the Kathmandu RSLUP	Prepare Local Level Development Plans at the municipalities and VDCs level, based on the strategic development plan and urban development guidelines while coordinating with related organizations and experts to	KVDA, Municipalities	Development Partners	Number of municipalities with local level development plans
Strategy 2: Prepare Constraints and sensitivity based zoning and Land use plan to guide urban expansion and RSLUP of Kathmandu Valley	Develop and enforce "Colored Development Zones" based on the availability of land considering development constraints, multi-hazard risk assessment, carrying capacity and future projection for year 2035	Develop and enforce Risk Sensitive Land Use Plan on the basis of colored development zones and the National Land Use Policy 2069	KVDA,	Development Partners, MoUD, Municipalities	Availability of RSLUP for KV
		Prepare detailed area plans, standards and guidelines for redevelopment of highly dense areas (and relocated sites) to introduce risk reduction measures such as wider roads (for emergency access), strengthened buildings, increased amount of multiple open spaces, and buildings that can serve as emergency shelters and critical lifelines during disaster events, and post-disaster recovery.	KVDA	MoHA, DoR, Municipalities	Number of emergency shelters

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
	Plan and promote decongestion in Red Zone	Undertake upgrading programs in historic and low-income areas to provide improved infrastructure, safe shelters and open spaces, and realignment of streets to facilitate emergency access while maintaining heritage values and accessibility for low income groups.	KVDA, Municipalities	Partner agencies	Proportion of upgraded historic and low income areas
		Develop incentives (such as property tax breaks and low-interest loans) to promote adoption of resilience measures for commercial / residential properties.	MoHA, MoLRM	KVDA	Proportion of buildings with resilience measures
		Work with local agencies to streamline the redevelopment process for projects that include resilience measures.	KVDA, Local Agencies		Number of projects including resilience measures
	Promote residential development and non-polluting industries only in selected areas of Yellow Zones	Revise zoning bylaws and prepare guidelines to upgrade urban density in existing built up areas and select target areas in the Yellow Zone	KVDA	Municipalities, Development Partners	Area of Yellow zones with upgraded urban density
		Prioritize infrastructure improvements to support increase in urban density and to promote development of target areas.	MoUD,	KVDA, MoPIT	Percentage of improved infrastructure
		Develop incentives (such as increased allowable density, tax credits and low interest loans) to promote a low income housing component in market rate housing development projects	MoUD	KVDA, NLHDA, Banks, Financial Institution	Percentage of low income housing component in housing development projects
	Plan and promote organized housing and land pooling in designated Green Zone, and few high rise development in South	Develop plans, programs and policies to amend Land pooling	KVDA	MoUD	Area and number of land pooling projects in south
	Develop Earthquake Risk Management Plan	Use existing information from the 2015 earthquake to characterize hazard, exposure and vulnerability to earthquake and inform a city wide risk profile.	KVDA, MoUD, MoHA	Municipalities, I/NGOs	Availability of risk profile
		Identify and develop a series of structural and non-structural measures to address the priority risks.			Availability of measures to address the priority risks
		Develop Earthquake Risk Management Plan consolidating risk assessment, risk prioritization and possible measures.			Availability of Earthquake Risk Management Plan
		Implement pilot activities in the selected 2-3 municipalities			Number of pilot activities
	Guide urban expansion towards the North-East , East and South of Kathmandu Valley	Conduct Feasibility Studies to develop New Satellite cities in at least 3 areas of Kathmandu Valley	KVDA		Availability of Feasibility studies

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
Strategy 3: Develop Urban Pressure and Risk Resilient Urban Infrastructure	Develop Urban Infrastructure Standards	Standardize drawings and monitoring guidelines for urban infrastructures, considering natural disaster and climate change risk in current maintenance regime for public infrastructure	KVDA	MoUD, Local Bodies and Relevant agencies	Percentage of improved infrastructure
		Develop a standard approach to undertake site selection for new urban infrastructure to promote development in lower hazard areas while meeting Level of Service requirements	KVDA	MoUD, Relevant agencies	Percentage of new urban infrastructure following the standards
	Undertake a disaster and climate change risk assessment for existing urban infrastructure	Develop and implement risk management measures with both public agencies and private companies.	KVDA, MoUD	MoFALD, I/NGOs , Private Sectors, and relevant agencies	Number of projects with risk management measures
	Promote design and construction of climate change and disaster resilient urban infrastructures	Determine the desired 'level of hazard immunity' for new urban assets to be designed and built based on the criticality of assets and services provided.	KVDA, MoUD, MoFALD		Percentage of new urban assets and services following requirements
		Promote the use of the standards (developed in Obj. 13) for both public and private assets through awareness campaign and training session for professionals of various industries (engineers, planner, architects, asset managers, etc.).	KVDA, MoUD, MoFALD	relevant agencies	Percentage of trained professionals
		Develop strategy to raise capital for infrastructure financing to address the backlogs in infrastructure and provision of services in KV.	KVDA	Private Sectors, relevant agencies	Proportion of capital raised
	Obj. 4. Enhance the capacities of local bodies to support societies and communities to develop coping capacities to Climate Change and Disaster Risk	Develop and implement an awareness campaign based on the issues identified for KV and the strategies being promoted.	KVDA	Local bodies	Number of campaigns
		Undertake a gap analysis of current professionals and practitioners in local bodies; develop a tailored training program based on existing capability and capacity and the identified gaps.	KVDA		Number of training programs
Strategy 3.1. Water Supply	Expedite water supply projects	Prepare and implement water recharge plans, adopt land use policies and revise byelaws to protect water recharge areas.	PID, KUKL	Municipalities, Relevant agencies, KVDA	Number of Water Recharge plans
		KVDA will work with relevant agencies to speed up the process of improving Bulk Distribution System and Distribution Network Improvement within the year 2020			Number of houses with water supply from Bulk Distribution System
	Strengthen water supply system	In coordination with relevant agencies, strengthen Non-Revenue Water management to control water leakages and illegal connections and improve the revenue and return on investment for KV water utilities.	PID, KUKL	Municipalities, Relevant agencies, KVDA	Length of water supply network system with no leakage

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
		Develop and implement stringent policies to prohibit excessive ground water extraction			Number of houses with ground water extraction system
Strategy 3.2. Waste Water Treatment	Obj. 2. Promote water treatment in institutional buildings	Promote and develop incentives to install waste water treatment system in institutional buildings (for example : Tokha Satya Sai Shiksha Sadan)	KVDA	Relevant institutions	Number of Institutional buildings with Waste Water Treatment System
Strategy 3.3. Solid Waste Management	Promote Integrated Solid waste Management	Prepare Solid Waste Management plan for Kathmandu Valley	SWMTSC	Municipalities, KVDA, Concerned Stakeholders	Availability of Solid Waste Management Plan for KV
		Develop local level plan for waste management for each municipality			Number of municipalities with local level plan for waste management
	Debris Management	Develop a Services team to provide technical resources for debris management	KVDA	Municipalities	Establishment of services team
	Promote community based waste mgmt	Conduct awareness campaigns to promote Community based Waste Management	SWMTSC	Municipalities KVDA	Number of community based watse management projects
Strategy 3.4. Road	Develop Road Standards and Guidelines	Prepare Kathmandu Valley Urban Road Standard, Urban Road safety management system, natural hazards and climate change risk standard (mostly in relation to drainage system and pavements).	KVDA	MoUD, MoFALD, MoPIT, DoR, relevant agencies	Availability of Urban road standards
		Prepare Street Beautification Guidelines to include aesthetic considerations in large urban projects.	KVDA	MoUD, MoFALD	Number and length of streets following the guidelines
		Explore options to collocate utility corridor in urban road easements as a pilot project	KVDA	Relevant agencies	Length of urban roads with integrated utility corridor
	Construction of Road Networks	Construction of Exclusive Pedestrian Path and Cycle	DoR	KVDA, relevant	Length of exclusive pedestrian path and
Strategy 3.5. Transportation	Develop mechanism to address urban transport related issues	Prepare Kathmandu Valley Urban Transport Master Plan	KVDA, MoPIT, Municipalities and relevant agencies	DoTM, DoR, Development Partners	Availability of Kathmandu Valley Urban Transport Master Plan
Strategy 3.6. Housing	Undertake urban upgrading and promote low-income housing in private housing projects	Review update and monitor group housing standards.	KVDA	Development Partners	Percentage of improved group housing
		Prepare incentives (such as density bonuses or property tax breaks) for private sector projects in the Yellow and Green Zones, which include low-income housing	KVDA, MoUD		Percentage of involvement of private sector in housing projects
	Improve the consideration of paraseismic measures in the housing stock	Facilitate a community based assessment of current buildings (could be used to inform KV broader risk assessment).	DUDBC	KVDA, MoUD	Percentage of information received
		Introduce awareness campaigns to promote further the consideration of para-seismic measures in the design and construction of new housing	DUDBC	KVDA, MoUD	Percentage of buildings with consideration of para-seismic measures

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
Strategy 4: Environmental Friendly and Disaster Resilient Planning Approach	Develop Kathmandu Valley Disaster Risk Management Plan	Prepare and Implement Kathmandu Valley Disaster Risk Management Plan	KVDA	MoHA, Development Partners	Availability of Kathmandu Valley Disaster Risk Management Plan
	Promote Urban Forest areas	Identify land areas to establish and management urban parks	KVDA, MoFSC	Municipalities, Local Communities	Area of land for urban parks
		Conduct tree and shrubs plantation campaigns; promote their maintenance through Corporate Social Responsibility	MoFSC	Private Sectors, KVDA, Municipalities	Area of plantation in public areas
		Develop guidelines for the selection of appropriate tree and shrub species for scientific plantation to ensure that the tree species are best suited for the specific urban areas	DoF, KVDA	Municipalities, Nurseries	Availability of guidelines and implementation
		Introduce regulatory provisions to include greenbelts as integral part of road network planning and river bank management	KVDA, NPC	Municipalities, DoF	Length of road with greenbelt
	Preserve and develop Open space	Prepare Open Space Atlas	KVDA	MoLRM, Dev Partners	Availability of Open Space Atlas
	Develop a partnership model for operation and management of Open spaces	Build parks, entertainment and socializing spaces at neighborhood level	KVDA	Municipalities, Local Communities	Number and area of parks
	Provide regulations and incentives for Land Pollution control	Relocate heavy polluting industries from the core residential areas of KV	MoUD, KVDA, MoI	CBO, Local Bodies, Industrial Sectors	Number of relocated industries
	Promote the usage of renewable energy sources in Kathmandu Valley	Installation and maintenance of solar lights in the strategic urban roads	KVDA, AEPC	Municipalities, DoR, I/NGOs, Private sector	Length of urban roads with solar lights
Strategy 5: Urban Regeneration of Historic City Core	Rejuvenating the core historic cities through the preservation of the	Develop plans to pedestrianise historic core areas	KVDA	MoTCA, DoA, Municipalities	Pedestrianization of historic core areas
	Prohibit vertical subdivision of buildings in city core areas	Develop policy and bye laws to prohibit vertical division of buildings mainly in city core area	KVDA	NLHDA, RUPSON	Percentage of verticla division of buildings
Strategy 6: Promotion of Tourism and Service Related Industries	Promotion of tourism and allied services to create employment opportunities in several sectors	Identify, develop and maintain eco trail or cycle trail around the valley to foster the local economy and livelihood	KVDA, MoUD, DoR		Length of eco-cycle trail
Strategy 7: Promotion of Gender Equity and Social Inclusion	Devise social accountability mechanism	Develop platform for public hearing, and social audits	KVDA, Municipalities		Number of participants in social audits
	Recognize informal sector and give opportunity to their business in organized manner	Prepare development plans for organized retail vegetable markets at 10 different places in consultation with the local bodies	KVDA, Municipalities		Number of organized retail vegetable markets
		Feasibility study of Urban Haat Bazar (weekly market) along Ring Road and Koteshwor - Surya Binayak Highway	municipalities, Street Vendor association	KVDA,	Arrangement of weekly urban haat bazaar

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
Strategy 8: Promote Safety and Security in Urban Development	Strengthen Security system	Develop security circuit within the KV with surveillience for people and traffic at KV entry points	Metropolitan Police	KVDA, Line agencies, Municipalities	Number of security circuit in KV
	Recognize informal sector and give opportunity to their business in organized manner	Strict planning permits for skyscrapers and parking provisions, commercial spaces			Number of skyscrapers, parking provisions with planning permits
Strategy 9: Promote Private Sector Involvement in Urban Development Activities	Prepare Economic Vision for Kathmandu Valley 2035	Prepare a document that explores and sets out a vision for what the economy of Kathmandu Valley would look like within the year 2035 and beyond	KVDA, Private Sectors		Availability of Economic Vision for KV
	Promotion of Private sector involvement in development projects	Develop policies to facilitate private sector involvement in urban development activities	KVDA, Private Sectors	Line agencies	Percentage of private sector involvement in urban development activities
Strategy 10: Emphasize on Information, Communication and Advocacy	Play a lead role in advocating for the implementation of the SDMP	Raise awareness among key stakeholders, public and private sector about the role of KVDA in the sustainable development of Kathmandu Valley through media, civil societies and build up partnership to contribute to the same	KVDA	Media Partners	Number of partnerships with KVDA for KV's development
		Hold regular consultative meetings, workshops and seminars with concerned stakeholders to gain feedback on various action plans and projects for the development of KV	KVDA	Other related agencies	Number of consultative meetings and percentage of participation
		Construct Learning-Innovation-Application Center to create platform and opportunity for sharing information and ideas within and outside KVDA, nationally and internationally to internalize and institutionalize knowledge	KVDA	Other Collaborative Partners	Establishment of L-I-A center
Strategy 11: Youth Mobilization and Participation in Urban decision making processes and development activities	Include youth in design and planning processes	Involve youth in the design, planning or conceptualization of cities for innovative ideas on future cities which are inclusive and sustainable	KVDA, Municipalities	Academic institutions,Professional society, Volunteers from I/NGO's	Number of youth participants in development activities

Kathmandu Valley Development Authority

Mid Term Strategic Action Plan (10 Years: FY 2075/076 - 081/082)

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
Startegy 1: Planning to be done at two Levels: Macro (Valley Level) and Micro (Municipal Level)	Review and revise existing regulations, plans, tools and guidelines to implement SDMP 2015-2035	Prepare Large Scale GIS Database of Urban Infrastructure and Land Information System of KV to be used for for Land Management, Development Planning, Infrastructure development and Disaster Mitigation	KVDA, MOLRM	Local bodies, & Partner agencies	Availability of KV wide GIS database
		Develop policies for preparation of Tax based Incentives/ Disincentives mechanism as a Base for Land Use Plan Implementation; to demarcate urban and agricultural land; discourage land fragmentation; regulate minimum plot size	KVDA, MoUD		Regulation of minimum plot size
	Guide related line agencies/authorities for major land development, re-settlement plans in KV in compliance to eco-friendly standards	Develop and enforce infrastructure standards and threshold for land use control	KVDA	Municipalities	Availability of infrastructure standards
		Develop Digital addressing system for all municipalities and VDCs	KVDA, MoUD, MoFALD		Number of municipalities with digital addressing system
Strategy 2: Prepare Constraints and sensitivity based zoning and Land use plan to guide urban expansion and RSLUP of Kathmandu Valley	Develop and enforce "Colored Development Zones" based on the availability of land considering development constraints, multi-hazard risk assessment, carrying capacity and future projection for year 2035	Develop and enforce infrastructure standards and threshold for land use control	KVDA	Municipalities	Availability of infrastructure standards
		Develop Digital addressing system for all municipalities and VDCs	KVDA, MoUD, MoFALD		Number of municipalities with digital addressing system
	Protect prime fertile agricultural lands	Prepare zoning regulations aimed at protecting agricultural land.	KVDA, MoUD		Area of protected agricultural lands
		Establish a conservation easement program to support farmers who voluntary agree to a freeze on development of their properties	MoLRM	KVDA	Availability of conservation easement program
Strategy 3: Develop Urban Pressure and Risk Resilient Urban Infrastructure	Promote design and construction of climate change and disaster resilient urban infrastructures	Promote private sector investment in development and maintenance of urban infrastructure through provision of incentives when disaster risks and climate change are considered in the design and construction of new public assets.	KVDA	Private Sectors, relevant agencies	Proportion of private sector participation
		Promote PPP model to attract private investment, particularly in resilient urban infrastructure projects through political commitment, provision of guarantee for the investments	KVDA	Private Sectors, relevant agencies	Number of projects with PPP model

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
Strategy 3.2. Waste Water Treatment	Coordinate in development of Waste Water Treatment System	KVDA as a main coordinating agency would coordinate with various sectors working to build Community Based Waste Water Treatment Plant along major rivers in KV, such as Kathmandu Valley Waste water Management project	PID, HPCIDBC	Municipalities, KVDA	Number of Community Based Waste Water Treatment Plant
Strategy 3.3. Solid Waste Management	Promote Integrated Solid waste Management	Construct Sanitary landfill site for the municipality or cluster of municipalities (> 50,000 population)	SWMTSC	Municipalities, KVDA	Number and area of Sanitary landfill sites
		Allocate land areas for management of municipal solid waste, e-waste and medical waste	KVDA, MoEST, SWMTSC	Municipalities	Number and area of allocated lands as per waste type
	Manage medical waste	Introduce mechanisms to ensure the implementation of Waste management policy which requires all medical institutions and manufacturers to manage	DoHS, Municipalities SWMTSC	KVDA, Medical Institutions and manufacturing	Number of medical institutions and manufacturers with self waste management system
	Manage e-waste	Establish 'Environment Research Center' to research on effective management of electronic waste and develop stringent policies to manage the same	SWMTSC, MoEST	KVDA, Municipalities	Establishment of 'Environment Research Center'
Strategy 3.4. Road	Develop Road Standards and Guidelines	Plan bike corridors, pedestrian paths/crossings, and dedicated bus lanes as part of roadway projects to provide safe options for alternate modes of travel	DoR	KVDA	Length of bike corridors, numbers of pedestrians paths and length of bus lanes
	Construction of Road Networks	Implement Disable friendly regulations	DoR	KVDA, relevant	Length of roads with disable friendly
		Continue Road widening projects as per the bye laws,	KVDA, DoR		Length of widened roads
Strategy 3.6. Housing	Undertake urban upgrading and promote low-income housing in private housing projects	Develop plans for slum and squatter resettlement and implementation of plans similar to the Ichangu Narayan Land Pooling Project under 'Urban Poor Housing Program'	KVDA, MoUD	MoCP, Development Partners	Number of projects under 'Urban Poor Housing Program'
	Promote environment friendly buildings	Develop standards for green buildings (that include aspects such as water conservation, and low energy use)	DUDBC, MoEST	KVDA	Number of buildings foolowing green standards
Strategy 4: Environmental Friendly and Disaster Resilient Planning Approach	Promote Urban Forest areas	Designate special forest areas and conduct a feasibility study to set up a "payment for ecosystem services" program (PES). Explore options through the PES program to compensate landowners for preserving the special forest areas and setting up a pilot cash	KVDA	Municipalities, partner agencies, DoF	Area of special forest areas
		Conduct regular maintenance of existing urban forestry and timely removal of hazardous trees that are threat to human safety	DoR, DoF	Municipalities,	Management of urban forests
	Develop a partnership model for operation and management of Open spaces	Coordinate and compliment planning with HPCIDBC for the improvement of Bagmati and Vishnumati River Basin	HPCIDBC, KVDA	MFSC, DDC, Municipalities, Partner agencies	Length of managed river basin

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
	Develop a partnership based model for operation and management of ponds/ water bodies	Identify and develop plans to conserve traditional water systems, ponds, wetlands and other groundwater recharge areas	KVDA, Municipalities	Local Communities	Number of conservation projects of traditional water systems, ponds etc.
		Work with local community groups to restore and manage traditional water systems, ponds, wetlands and other groundwater recharge areas	Municipalities	Local CBO, Development Partners	Number of restored traditional water systems
	Provide regulations and incentives for Air Pollution control	Tax incentives to promote non-polluting vehicles and Mass Transit System	MoPIT	Private Sector	Percentage of vehicles following non poluuting principles
	Provide regulations and incentives for Water Pollution control	Develop incentive mechanisms to promote decentralized waste water treatment System (DEWATS) before discharging into rivers and streams	Municipalities,	CBO, Local Bodies, Industrial Sectors	Percentage of DEWATS system developed
	Provide regulations and incentives for Land Pollution control	Develop Strict regulations to conserve agricultural areas in KV	MoUD, KVDA, MoLFRM	Municipalities	Area of agricultural areas
	Promote the usage of renewable energy sources in Kathmandu Valley	Land management for large-scale solar farm	KVDA, MoLRM	Municipalities, AEPC	Area of solar farm
Strategy 5: Urban Regeneration of Historic City Core	Rejuvenating the core historic cities through the preservation of the historical, cultural and social assets	Construction of bye-pass road around such sites	MoPIT	KVDA, DoR, Municipalities	Number of historic core areas with bye-pass road
		Develop projects on conservations and revitalization of historic core area	KVDA, Municipalities		Number of projects implemented on revitalization of historic core area
		Urban Regeneration of Heritage Core of Kathmandu Valley and old settlement	KVDA, Municipalities		Number of projects implemented on urban regeneration
	Support the Department of Archaeology to undertake immediate reconstruction of heritage areas	Partner with Department of Archaeology to improve cultural context of heritage areas as part of reconstruction efforts.	DoA	KVDA	Percentage of improved cultural heritage areas
Strategy 6: Promotion of Tourism and Service Related Industries	Promotion of tourism and allied services to create employment opportunities in several sectors	Identify, develop and maintain eco trail or cycle trail around the valley to foster the local economy and livelihood	KVDA, MoUD, DoR		Length of eco-cycle trail
Strategy 7: Promotion of Gender Equity and Social Inclusion	Recognize informal sector and give opportunity to their business in organized manner	Develop capacity building trainings for informal sector workers	KVDA, MoUD,	Municipalities, Development Partners	Percentage of trained informal sector workers
		Identify plans to develop markets for Street vendors, workshops, and repair shops on street	Street Vendor Association	KVDA, municipalities	Number of organized markets for street vendors, workshops and repair shops
Strategy 8: Promote Safety and Security in Urban Development	Strengthen Security system	Digital Hub for inter-agency data sharing	Metropolitan Police	KVDA, Line agencies, Municipalities	Availability of digital hub
		Application of Geographic information system for local organizations, community analysis, public administration and economic development.			Availability of GIS system

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
	Ensure crime reduction and promote safety	Establish sport and recreation centers to promote youth involvement in positive measures	KVDA, Municipalities	Private Sectors	Number of sport and recreation centers
		Establish Transit House within Police Stations			Number of transit houses
		Establish child care centers and Old age homes at nrighborhood/ city level			Number of child care centers and old age homes
Strategy 9: Promote Private Sector Involvement in Urban Development Activities	Promotion of Private sector involvement in development projects	Identify development projects where private sector can participate and lead	KVDA, Private Sectors	Line agencies	Number of projects with PPP model
Strategy 10: Emphasize on Information, Communication and Advocacy	Play a lead role in advocating for the implementation of the SDMP	Set up an information system, so as to act as an information centre as well as disseminate the information to the public with ease	KVDA	Other related agencies	Establishment of information center
		Apply for international affiliation as and when required	KVDA		Number of international affiliations

Kathmandu Valley Development Authority

Long Term Strategic Action Plan (20 Years: FY 2082/083 - 091/092)

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
Strategy 2: Prepare Constraints and sensitivity based zoning and Land use plan to guide urban expansion and RSLUP of Kathmandu Valley	Develop and enforce "Colored Development Zones" based on the availability of land considering development constraints, multi-hazard risk assessment, carrying capacity and future projection for year 2035	Develop and support implementation of incentive and disincentive mechanisms to promote/ control development in land use zones within each color zones	KVDA	MoUD, Municipalities	Area of Controlled development
	Protect prime fertile agricultural lands	Explore various options successfully practiced in other metropolis to develop mechanisms to establish and support transfer of development rights (TDR) from agricultural lands to targeted urban areas.	KVDA	MoUD, MoLRM	Implementation of TDR
Strategy 3.2. Waste Water Treatment	Coordinate in development of Waste Water Treatment System	KVDA as a main coordinating agency would coordinate with various sectors working to build Community Based Waste Water Treatment Plant along major rivers in KV, such as Kathmandu Valley Waste water Management project	PID, HPCIDBC	Municipalities, KVDA	Number of Community Based Waste Water Treatment Plant
Strategy 4: Environmental Friendly and Disaster Resilient Planning Approach	Promote the usage of renewable energy sources in Kathmandu Valley	Advocate for urban centre focused hydropower project	DoED	KVDA	Implementation of urban centre focused hydropower project
		Develop programs and incentive mechanisms to promote installation of renewable energy sources in urban households	AEPC, DOED	KVDA,	Percentage of households with installed renewable enregy source system
Strategy 6: Promotion of Tourism and Service Related Industries	Promotion of tourism and allied services to create employment opportunities in several sectors	Identify and develop potential Tourist areas to promote agro tourism and cultural tourism	KVDA, Municipalities	MoTCA, NTB	
		Promote development of tourism service infrastructures such as hotels, recreational centres, golf course, eco-parks	NTB, HAN	KVDA	Percentage and type of tourism services
		Designate land use zones to promote development of sports venues (football/cricket stadium, golf course) to support development of sports in the country as well as to attract sports tourism in the KV	KVDA, NTB, MoYS		Area of designated land use zones

Strategy	Objectives	Action Plans	Lead Agencies	Supporting Agencies	Indicators
Strategy 7: Promotion of Gender Equity and Social Inclusion	Recognize informal sector and give opportunity to their business in organized manner	Develop capacity building trainings for informal sector workers	KVDA, MoUD,	MunicipalitiesDevelopment Partners	Percentage of trained informal sector workers
		Identify plans to develop markets for Street vendors, workshops, and repair shops on street	Street Vendor Association	KVDA, municipalities	Number of organized markets for street vendors, workshops and repair shops
Strategy 8: Promote Safety and Security in Urban Development	Strengthen Security system	Digital Hub for inter-agency data sharing	Metropolitan Police	KVDA, Line agencies, Municipalities	Availability of digital hub
		Application of Geographic information system for local organizations, community analysis, public administration and economic development.			Availability of GIS system
	Obj. 2. Ensure crime reduction and promote safety	Establish sport and recreation centers to promote youth involvement in positive measures	KVDA, Municipalities	Private Sectors	Number of sport and recreation centers
		Establish Transit House within Police Stations			Number of transit houses
		Establish child care centers and Old age homes at nrighborhood/ city level			Number of child care centers and old age homes
Strategy 9: Promote Private Sector Involvement in Urban Development Activities	Promotion of Private sector involvement in development projects	Identify development projects where private sector can participate and lead	KVDA, Private Sectors	Line agencies	Number of projects with PPP model
Strategy 10: Make focused use of Information, Communication and Advocacy	Play a lead role in advocating for the implementation of the SDMP	Set up an information system, so as to act as an information centre as well as disseminate the information to the public with ease	KVDA	Other related agencies	Establishment of information center
		Apply for international affiliation as and when required	KVDA		Number of international affiliations