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# A VISION FROM FUTURE

Making Kathmandu a Better Place



## Design Kathmandu Contest

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## **A VISION FROM FUTURE**

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## Table of Content

1. Introduction.....	5
2. Present status of Kathmandu Valley	
a. History of Kathmandu Valley.....	6
b. Administration and Government Status.....	7
c. Geography and Climate.....	7
d. Demography.....	9
e. Economy.....	10
i. Media	
ii. Technology	
iii. Tourism	
f. Settlements,Open parks and spaces.....	11
g. Education.....	12
h. Transportation.....	13
i. Culture.....	15
i. Art	
ii. Museum and art galleries	
iii. Music and cinema	
iv. Heritages	
j. Sport.....	16
3. Design of Kathmandu Valley	
a. Design and architecture.....	16
b. Science and technology.....	18
c. Science parks and museums.....	18

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d. Policy and planning.....	19
e. Research, development and innovation.....	19
f. Education.....	20
g. Road network and smart technology.....	21
h. Heritage sites and conservation.....	21
i. Environment and wildlife.....	22
j. Sports.....	22
k. Society, civilization and religion.....	23
4. Conclusion.....	23
5. References.....	24

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## **Introduction:**

Being born years after civilization started in Kathmandu, this report is all about what we would do if we were the authorized people in the past. Visualizing us as the authorized people to design Kathmandu from scratch in the past, this is our vision from future. Both of us being born and brought up in Kathmandu, we have seen pollution, mismanagement of resources, roads, monotonous education system, cultural heritages being demolished, we felt like now we were given a chance to fix everything and make Kathmandu a better place for everyone. This is where our motivation arises from. Our aim is to design a peaceful, eco-friendly, sustainable smart Kathmandu with traditional architecture and enough open spaces. We have planned about Kathmandu from its architecture to education to environment.

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## Present status of Kathmandu valley

### History of Kathmandu valley:

Kathmandu took its name from the 16<sup>th</sup> century Kasthanamandap temple which is said to have been created from the wood of a single tree. According to legend, the Kathmandu valley was created by a Buddhist saint, Manjushree who used his sword to burst the wall, draining the huge lake that filled the valley in prehistoric times. Archaeologists have since discovered that the lake drained away naturally around 10,000 years ago, but the first signs of a permanent city appeared in the second century. The Kathmandu Valley may have been inhabited as early as 300 BCE, since the oldest known objects in the valley date to a few hundred years BCE.

Legends say that the very first dynasty to rule the Kathmandu valley was the Gopala dynasty. Then ruled by Kiratas. After Kiratas, then came rulers of the Licchavi dynasty who improved the economy and made great contributions for the development of the art of building, temples, images and places. After the Licchavis period, another important era of Nepalese history is the Malla dynasty ruled around from the 12th until the 18th century. Innumerable temples, palaces, idols and carvings that are preserved in the valley, speak of the excellence in art and architecture during that period. Religion played a pivotal role in Kathmandu's rapid development. Kathmandu's rulers filled their capital with temples, palaces and stupas competing with the rival states of Patan and Bhaktapur. The stupa at Swayambhunath became a major pilgrimage site for Buddhists while the sacred Bagmati river attracted Hindu pilgrims. Then the Shah dynasty of the Gorkha Kingdom under Prithvi Narayan Shah conquered the valley as he created present-day Nepal. His victory in the Battle of Kirtipur was the beginning of his conquest of the valley.



Figure1: Kathmandu Durbar Square in 1852 A.D (Source:Painting by Henry Ambrose Oldfield (1822-1871))

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## Administration and Government status:

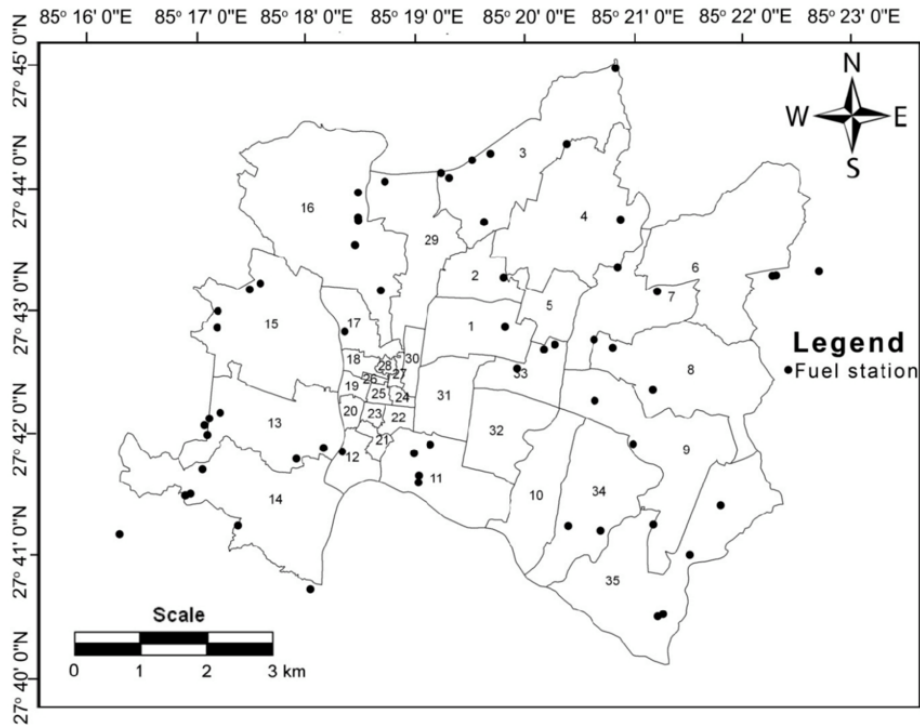


Figure 2: Map showing 35 wards of Kathmandu(Source:ResearchGate)

The urban area of the Kathmandu valley is split among three different districts (second level of administrative divisions within a province), which extend very little beyond the valley fringe, except towards the southern ranges, which have a comparatively small population. They have the three highest population densities in the country. These 3 districts are administered by 21 local level bodies; 2 metropolitan cities (Kathmandu and Lalitpur), 16 municipalities and 3 rural municipalities. Metropolitan Kathmandu is divided into five sectors: the Central Sector, the East Sector, the North Sector, the City Core and the West Sector. For civic administration, the city is further divided into 35 administrative wards. The Council administers the Metropolitan area of Kathmandu city through its 177 elected representatives and 20 nominated members. The Metropolitan Police is the main law enforcement agency in the city. It is headed by a commissioner of police. The Metropolitan Police is a division of the Nepal Police, and the administrative control lies with the Ministry of Home Affairs.

### Geography and climate:

Kathmandu valley is bowl-shaped. Its central lower part stands at 1,425 metres (4,675 ft) above sea level. Kathmandu valley is surrounded by four mountain ranges: Shivapuri hills (at an elevation of 2,732 metres or 8,963 feet), Phulchowki (2,695 metres or 8,842 feet), Nagarjun (2,095 metres or 6,873 feet) and Chandragiri (2,551 metres or 8,369 feet). The major river flowing through the Kathmandu Valley is the Bagmati. The valley is made up of the Kathmandu District, Lalitpur District and Bhaktapur District covering an area of 220 square miles (570 km<sup>2</sup>). The valley consists of the municipal areas of Kathmandu, Patan, Bhaktapur, Kirtipur and

Madhyapur Thimi; the remaining area is made up of a number of municipalities and rural municipalities (in Lalitpur district).

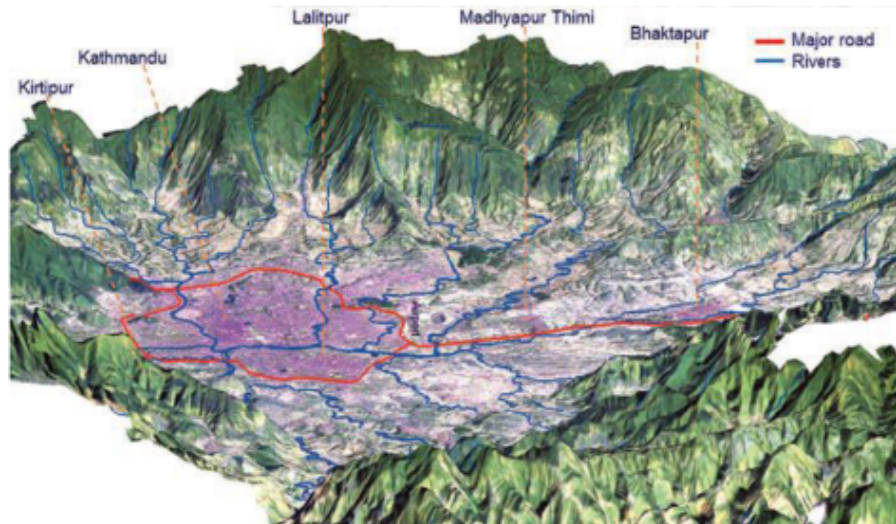


Figure 3: Three dimensional map of Kathmandu valley (Source:Thapa and Murayama 2009)

Kathmandu Valley is in the Warm temperate Zone (elevation ranging from 1,200 to 2,300 metres (3,900 to 7,500 ft)), where the climate is fairly temperate, atypical for the region. This zone is followed by the Cool Temperate Zone with elevation varying between 2,100 and 3,300 metres (6,900 and 10,800 ft). The average summer temperature varies from 28 to 30 °C (82 to 86 °F). The average winter temperature is 10.1 °C (50.2 °F).The city generally has a climate with warm days followed by cool nights and mornings. Rainfall is mostly monsoon-based (about 65% of the total concentrated during the monsoon months of June to September), and decreases substantially (100 to 200 cm (39 to 79 in)) from eastern Nepal to western Nepal.On average humidity is 75% The decade of 2000–2010 saw highly variable and unprecedented precipitation anomalies in Kathmandu. This was mostly due to the annual variation of the southwest monsoon.

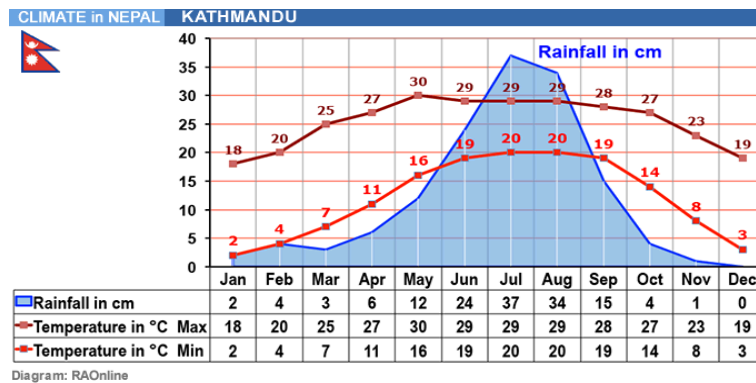


Figure 4: Maximum and Minimum temperatures, and rainfall of Kathmandu every month (Source:RAO)



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## Demography:

The valley flat area is densely populated, with more than 6,000 persons/km<sup>2</sup>. The population density is lower at greater distance from the city core, these are the areas at higher elevation and are composed mostly of villages (officially known as village development committee or VDC). The fringes adjacent to urban areas have faced rapid population growth. Kathmandu's 2021 population is now estimated at **1,471,867**. In 1950, the population of Kathmandu was **104,479**. Kathmandu has grown by 48,352 since 2015, which represents a 3.40% annual change.

Type of Area	Hectare	Population	Density per hectare
Urban Area	9669	1426641	148
Kathmandu Metropolitan City	4945	975453	197
Lalitpur Sub-metropolitan City	1515	220802	146
Bhaktapur Municipality	656	81748	125
Kirtipur Municipality	1476	65602	44
Madhyapur Thimi Municipality	1076	83036	77
Urbanizing VDCs	18850	706202	37
Kathmandu	11750	507969	43
Lalitpur	3766	122043	32
Bhaktapur	3335	76190	23
Rural VDCs	43662	296436	7
Kathmandu	23190	150265	6
Lalitpur	13263	88441	7
Bhaktapur	7209	57730	8

Table 1: Population of the Kathmandu valley as per the national census of 2011. (Source: KVDA, 2015)

According to the Census 2011, the growth trend can be seen as such:

Annual growth rate of population in the Kathmandu Valley: 4.63%

Maximum growth rate observed in Urbanizing VDCs of Kathmandu Valley: 5.7%

The largest ethnic groups residing in Kathmandu Metropolitan City consists of primarily various caste groups of the Newar community at 25%, Hill Janajati/Adivisis like Tamang, Kirat, Gurung, Magar, Sherpa, etc. making ~20%, Khas Brahmin at 24%, Khas Chhetri at 20%, and 7% Terai groups including Madhesi castes and Terai Janajatis/Adivisis like Tharus.

According to data from 2011, the major religions in Kathmandu city are Hinduism 81.3%, Buddhism 9%, Islam 4.4% and other 5.2%.

70% of the total population residing in Kathmandu are aged between 15 and 59 which are considered as independent population whereas 30% are dependent population.

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## **Economy:**

**Media:** Kathmandu is the television hub of Nepal. Nepal Television, established in 1985, is the oldest and most-watched television channel in Nepal, as is government-owned NTV PLUS, Kantipur Television, Image Channel, Sagarmatha Television, Himalaya TV, AP1 TV and other channels. The headquarters of many of the country's news outlets are also in the city including Kathmandu Tribune, the government-owned Gorkhapatra (the oldest national daily newspaper in Nepal), The Kathmandu Post, Nepali Times, Kantipur Publications and its paper Kantipur, Naya Patrika, The Himalayan Times, Karobar Economic Daily, Aarthik Abhiyan National Daily and Jana Aastha National Weekly. Nepal Republic Media, the publisher of myRepublica, joined a publishing alliance with the International Herald Tribune (IHT), to publish the Asia Pacific Edition of IHT from Kathmandu from 20 July 2011. There is a state-run National News Agency (RSS). Radio Nepal is a state-run organization that operates national and regional radio stations. These stations are: Hits FM, Radio Kantipur, HBC 94 FM, Radio Sagarmatha and Image FM. The BBC also has an FM broadcasting station in Kathmandu. Few Community radio stations such as Radio Pratibodh – 102.4 MHz, Radio Upatyaka – 87.6 MHz etc. also broadcast within the valley.

**Technology :** The users of the internet and smartphones have been rising rapidly in the valley. E-services such as daraaz, pathao, e-sewa, tootle have seen a great rise in customers due to the rise in use of technology. Government has started considering the establishment of smart cities inside the valley. More people are using social media platforms like Facebook and Twitter and communication platforms like Viber, Messenger, WhatsApp and Wechat. Kathmandu Valley has some eminent scientific and technological research institutes such as Nepal Academy of Science and Technology (NAST) and Research Centre for Applied Science and Technology (RECAST).

**Tourism :** Kathmandu is the gateway to tourism in Nepal. It is also the nerve center of the country's economy. It has the most advanced infrastructure of any urban area in Nepal, and its economy is focused on tourism, which accounted for 3.8% of Nepal's GDP in 1995–96. Tourism in Kathmandu declined thereafter during a period of political unrest, but since then has improved. In 2013, Kathmandu was ranked third among the top 10 travel destinations on the rise in the world by TripAdvisor, and ranked first in Asia.

The city has a rich history, spanning nearly 2000 years, as inferred from inscriptions found in the valley. Religious and cultural festivities form a major part of the lives of people residing in Kathmandu. Most of Kathmandu's people follow Hinduism and many others follow Buddhism. There are people of other religious beliefs as well, giving Kathmandu a cosmopolitan culture. Nepali is the most commonly spoken language in the city. English is understood by Kathmandu's educated residents. Kathmandu's sister cities (Lalitpur Patan) and Bhaktapur are integral to Kathmandu's cultural heritage, tourism industry, and economy; therefore UNESCO's World Heritage Site lists all three cities' monuments and attractions together under one heading, "Kathmandu Valley-UNESCO World Heritage Site".

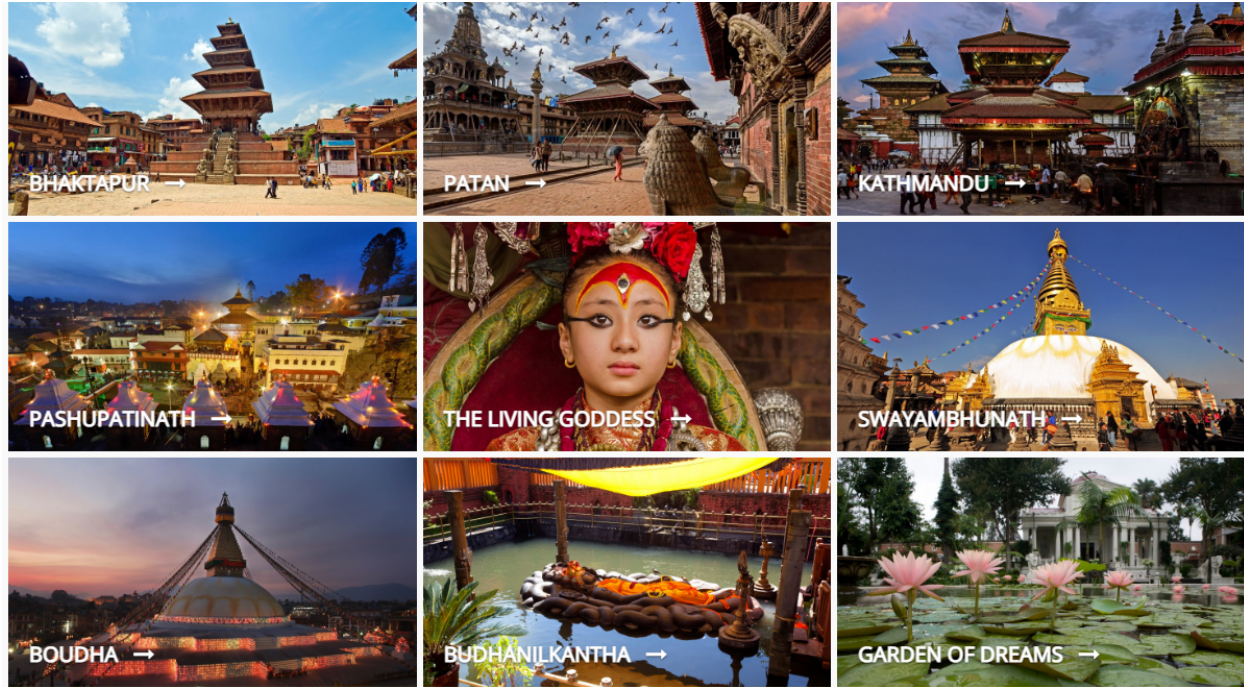


Figure 5: Main attractions of Kathmandu valley(Source: Nepal Tourism Board)

**Present status of settlement open spaces and parks:**

Public spaces as expressions of human endeavor and artifacts of the social world are the physical and metaphysical heart of the cities, thus providing channels for movement, nodes of communication and common ground for cultural activities. It plays an important part in urban heritage and makes a valuable contribution to environmental quality, health and social cohesion and receives public endorsement as a major contribution to quality of life.

The history of public open spaces in Kathmandu originated from the traditional Newari settlement of Kathmandu valley which was planned in concentric rings with the outermost ring for the agricultural purposes a sustainable place from the environmental and ecological point of view. The planning of traditional town is characterized by the narrow streets and open spaces with distinct neighbourhood pattern. Every individual houses are connected with the residential courtyard which in turn is connected to the street. The street are connected to large open spaces with the landmarks. The historical monument zones and the temple area serve open spaces with traditional settlement. Every traditional pathway has been marked with some religious or cultural elements like temples, wells, sprouts, etc. The traditional settlement shows a clan settlement unit, nani- a residential complex with a big courtyard and a shrine in the middle.

Clan settlement:

Nani A+ Nani B+... =Tole A

Tole A+Tole B+.....=Mandalika A

Mandalika A+Mandalika B+.....=TOWN

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Urban squares-public spaces where a great amount of human interaction takes place are the only form of public space in a city now. Most of these are centrally located and the civic center of the city.

According to National Urban Development Strategy 2015, in Kathmandu Metropolitan City only 0.48% of the area is categorized as the open space which is insignificant to serve the city. WHO and FAO recommend a minimum availability of 9 meter square per person of green open space for the city dweller. Based on the periodic plan of the municipalities, in Kathmandu the availability is 0.25 meter square per person.

At the national level, there is no clear and unambiguous policy regarding urban open spaces and parks. The existing provisions are fragmented and embedded within other policies and regulations. There is no inventory and monitoring of open space. Encroachment of open spaces is a major issue. Decline in open spaces in Kathmandu valley and other major cities owes largely to unmonitored encroachment, a reflection of poor governance.

The Atlas of Open Spaces, KVDA 2015 explains that the policies and programs 2071/72 issued by Government of Nepal mentions that gardens and playgrounds will be constructed in various places of Kathmandu (line no. 43). The line no 78 of the same document mentions that there will be provision of one play ground for each election area. Further line no. 132 mentions that public lands of Kathmandu valley will be preserved and necessary land will be purchased to allocate open spaces in at least ten places in Kathmandu valley. But none of these seems to be implemented.

### **Education:**

Education in Nepal from the primary school to the university level has been modeled from the very inception of the Indian system. Primary education in Nepal called Basic Education consists of grades one through eight. Secondary levels are grades nine to twelve. University education leads successfully to the degrees of bachelor, master and doctor (Ph.D.). There are more than 400 schools in Kathmandu which provide basic and secondary education. Many schools and colleges are run privately but none of the universities are private. The literacy rate of Kathmandu is the highest in the country at 89.6%. Kathmandu has the country's oldest school, Durbar High School, the oldest college, Tri Chandra college, and the oldest university, Tribhuvan University. Not surprisingly the best schools and colleges of Nepal are located in Kathmandu. Every year thousands of students from all over Nepal arrive at Kathmandu to get admission in the various schools and colleges. The education system is not growing according to the time so many students go abroad for their studies. It is a major concern among the educationists. Nepal ranks 11 in the countries of origin for international students in the United States.

People come to Kathmandu in the hope for disabled friendly schools but it lacks such schools and infrastructures that help them. For thousands of people living with disabilities, finding schools is such a task. Although the 2013 Accessible Physical Structure and Communication Service Directive for People with Disabilities, endorsed by the government in 2013, mandates steps to be taken to ensure that people with disabilities have access to equal opportunities and higher education, not many have implemented it.

The need of the hour is skill oriented education as providing only theoretical education has increased the problems of unemployment in the city.

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## Transportation:



Figure 6 :Condition of the traffic in Kathmandu

Public transport has become privatized. The privatization of public transport brought more operators but services deteriorated with time as a result of syndicate system and lack of effective planning and regulation by the government. Public transport services are provided by several thousand private operators, which are organized into mode-specific associations and operate along over 200 routes. The share of low occupancy vehicles such as minibuses, microbuses and tempos operating within Kathmandu Valley accounts for 94% of total public transport vehicles, while share of large buses is only 6%. (MoPIT/JICA, 2012)

Types of public transport	Passenger capacity	Number of operation route	Number of operating vehicles
Tempo	11-13	21	913
Micro bus	10-16	90	2036
Minibus	26-35	107	2036
Large bus	35-50	4	336
Total		222	5321

Table 2 : Number of operating public transport vehicles and their routes within Kathmandu valley (Source: MoPIT/JICA, 2012; sanjha yatayat, 2013)

The public transport service in Kathmandu Valley is fully operated by private sectors and self-financed i.e. without any government subsidies. The fare structure is set by the government and is based on the passenger kilometer travelled. However, there is no regular monitoring and no system for regularly reviewing the fare. This has led to dangerous practices and poor service quality to maximize profit, such as unhealthy competition among operators, overcrowding, picking up passengers from undesignated areas, longer waiting time and unreliability. There is no

ticketing system, except Sajha Yatayat, which issues paper tickets to passengers and operators collect fares individually.

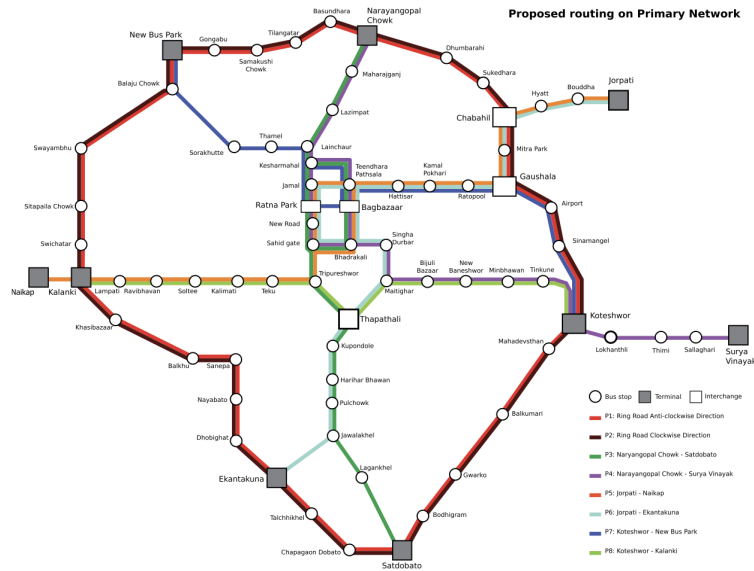


Figure 7 :Primary public transport network in Kathmandu Valley( Source:KSUTP)

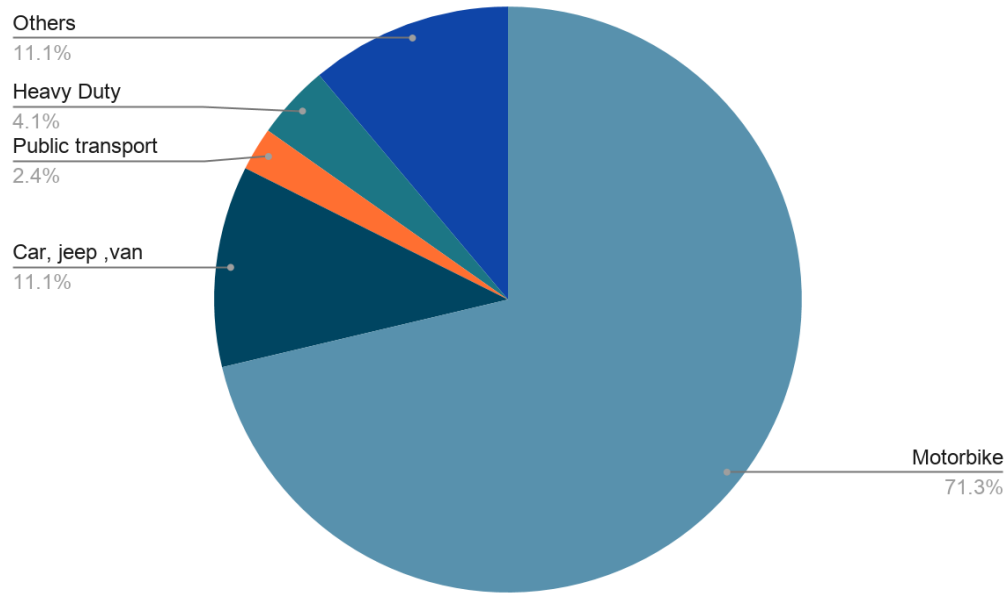


Figure 8: Composition of registered vehicle fleet in Kathmandu( source: DoTM,2013)

The main international airport serving Kathmandu valley is the Tribhuvan International Airport, about 6 kilometres from the city centre and is operated by the Civil Aviation Authority of Nepal. It has two terminals, one domestic and one international. It connects the country to other cities around the globe and within the country. There are no ropeways that are being used these days. At present, a cable car service is operated in Kathmandu in Chandragiri Hills.

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## Culture:

### Art

Kathmandu valley is an enormous treasure house of art and sculptures which are made of wood, stone, metal and terracotta and found in temples, shrines, stupas, chaityas and palaces. Most art is in the form of icons of gods and goddesses. It displays the work of contemporary and historical artists. Art in Kathmandu is vibrant, demonstrating a fusion of traditionalism and modern art, derived from a great number of national, Asian, and global influences.



Figure 9: National Museum of Nepal

### Museums and Art galleries

Kathmandu is home to a number of museums and art galleries. Nepal's art and architecture is an amalgamation of Hinduism and Buddhism which is reflected in the planning and exhibitions in museums and art galleries throughout Kathmandu. The museums display unique artefacts and paintings from the 5th century to the present day including archaeological exportation. Museums and art galleries in Kathmandu are:

- The National Museum
- Hanuman Dhoka Palace Complex
- The National Art Gallery
- The Tarragon Museum
- The Nepal Art Council Gallery
- The NEF-ART(Nepal Fine Art) Gallery
- The National History Museum
- Narayanhiti Palace Museum
- Kaiser Library
- The Srijana Contemporary Art Gallery
- The J Art Gallery

### Music and Cinema

Music is a part of the traditional aspect of Kathmandu. Musical performances are organized in cultural venues. Newar music originated in Kathmandu. Music from all over Nepal can also be found. Western music genres like Rock, metal, hip-hop, rap, R&B are also found.

Kathmandu is home to Nepali cinema and theatres. There are many cinemas and theatres in the city.

### Heritages:

This valley hosts a UNESCO World Heritage Site with seven preserved locations: the centers of the three primary cities, Kathmandu Hanuman Dhoka, Patan Durbar Square and Bhaktapur Durbar Square, the two most important Buddhist stupas, Swayambhunath and Boudhanath and two famous Hindu shrines, Pashupatinath Temple and Changu Narayan. In 2003, UNESCO listed the sites as being "endangered" out of concern for the ongoing loss of authenticity and the outstanding universal value of the cultural property.

Some other notable and important temples and monuments in the valley are:

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Ranipokhari, Dakshinkali temple, suryabinayak, jal binayak,kasthamandap, Bajrayogini, guhyeshwari temple,bagh bhairab temple and dharahara.

Even though the Kathmandu Valley has undergone immense urbanization, the authenticity of the historic ensembles as well as much of the traditional urban fabric within the boundaries has been retained.

### **Sport:**

Football and cricket are the most popular sports among the younger generation in Nepal and there are several stadiums in the city. The sport is governed by the National sports council from its headquarters in Kathmandu. The only international football stadium in the city is the Dashrath Rangasala,used mostly for football matches and cultural events, in the neighbourhood of Tripureshwor. It is the largest stadium in Nepal with a capacity of 25,000 spectators, built in 1956. Marty's Memorial League is also held in this ground every year. Kathmandu is home to the oldest football clubs of Nepal such as Ranipokhari Corner Team(RCT), Sankata Club and New Road Team(NRT). Other prominent clubs include Manang Marshyangdi Club, Tribhuvan Army Club (TAC) and Nepal Police Club..Kathmandu is also home of some of the oldest cricket clubs in Nepal, such as Yengal Sports Club. Kathmandu Kings XI represents Kathmandu in the Everest Premier League. Lalitpur is also home to several notable sporting organisations and grounds such as:ANFA complex, Tennis complex,Army physical training center, Chyasal Technical Centre and thecho Badminton club.

### **Design of Kathmandu valley**

#### **Design and Architecture:**

Kathmandu's architectural heritage can be considered as its most prominent identity. The homes in Kathmandu have the quality of traditional malla architecture with few modifications such as higher roof and use of cement instead of clay for comfort.



Figure 10: Structure of traditional Malla Architecture House (Source:Newton design)

The housing have following qualities:



1. The 5 housing units are built around the courtyard. Symmetry is maintained in the facade around the central axis.
2. The houses are normally set on a raised podium, generally of stone or brick. The podium acts as an intermediary zone which separates the street from the house, the private from the public. It acts as a semi-private space shared by neighbors, where men and women work and children often play. Steps to the house are either recessed in the podium or projected out in the street.
3. The houses are 3 or 4 storeyed topped by a ½ storey attic with tiled double pitched saddle roof.
4. The roofs consist of a framework of wooden beams, rafters, trusses and posts pegged together. Wooden planks, split bamboo or laths are laid over the rafters over which a thick layer of clay was laid and small interlocking tiles (*jhigatis*) were pressed into it. Longer tiles were used at joints and curved corner tiles (*kumpa*) were laid at roof ends.
5. The bricks used are sun-dried.
6. A stone vedi in the shape of a lotus is inscribed on the pavement in front of the steps.
7. Use of ankhi jhyal (san jhya) and tikijhyas for windows and doors with framing bands.
8. Each tole has one phalcha .
9. There is enough open space. The open spaces with functions can be listed below

Types of Open spaces	Functions
Small Courtyards surrounded by dwellings	Playground for children
Bahal (Buddhist courtyards with shrines)	Social interaction, Worshipping
Main Chowk	Events, Announcements, Functions
Ghats (river bank)	Cremation areas for hindus
Khet (agricultural field)	Agricultural farming

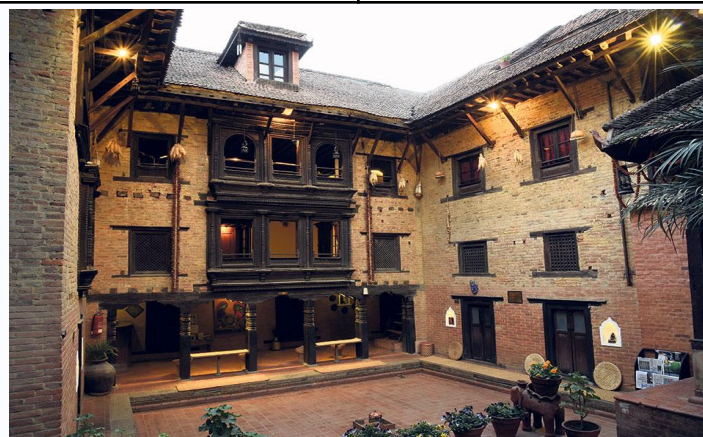


Figure 11: Model of a housing with courtyard (Source:myRepublica)

There are sufficient biharas, lacchi(squares) and temples in each community.

### Science and Technology:

Science and Technology is actively used in the valley to serve the public and uplift their living standard. Workshops are conducted for providing technological literacy in all age groups. The city has fast internet with affordable prices for the public. The valley has been made a smart city with the help of science and technology.

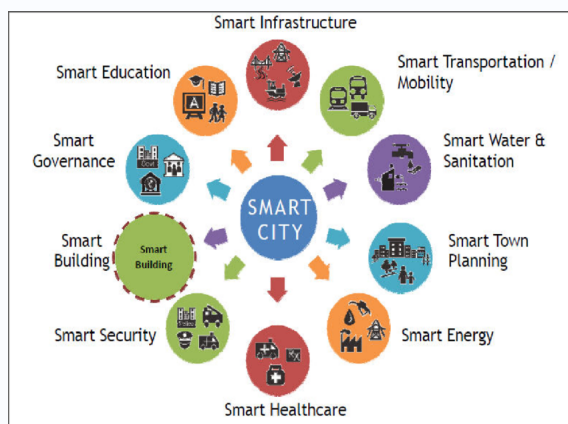


Figure 12: Components of smart city(Source:Anirudhha uniyal)

The science and technology is used in following sectors through following mediums:

Sector	Medium
Hospitals	Development of Biophysics and Biomedical engineering to improve healthcare system
Public Safety	Installation of CCTV cameras in every possible corners of the city
Education	Use of e-learning methods to prepare the students for fast changing world
Transportation	Use of electric vehicles to prevent pollution
Governance	Use of ICT to provide efficient and fast public service and to increase transparency

**Science Parks and Museums:**Science Parks and Museums inspire young minds to learn more, to be curious and explore, to tinker and to think creatively and scientifically. The science parks centers and museums in the valley are listed below:

1. 3 Planetariums and Space centers for space enthusiasts in three districts

- 
2. Art museums for aspiring artists in every ward
  3. 3 Virtual reality centers in three districts
  4. 1 Museum based on scientific theories in the centre of Kathmandu
  5. 6 Science parks for public (2 in each districts)
  6. 3 stargazing spots where there is no light pollution in three districts
  7. Cyber parks in every ward
  8. Entrepreneurship park in every ward

### **Policy and Planning:**

Policy and Planning are done very efficiently by authorizing the responsibility to deserving candidates. The assigned tasks are carried out in the planned time frame. In general, planning for every project in the valley is done in following steps:

1. Identify need. Policies can be developed
2. Identify who will take lead responsibility.
3. Gather information.
4. Draft policy.
5. Consult with appropriate stakeholders.
6. Finalise / approve policy.
7. Consider whether procedures are required.
8. Implement.

New policies are made in the medical sector where health services are provided to everyone without partiality. Policies for increasing employment opportunities are made. All the basic needs are made available to people.

### **Research, Development and Innovation:**

Different qualitative and quantitative research are conducted such as applied research, exploratory research, descriptive research and explanatory research.

Technological applied research is conducted for improving efficiency in a particular productive sector through the improvement of processes or machinery related to said productive processes. Scientific applied research is conducted for predictive purposes. Through this type of research design, we will measure certain variables to predict behaviours useful to the goods and services sector, such as consumption patterns and viability of commercial projects. Research is done prior to every developmental activities so that the development is positive, sustainable and environment friendly. Research based learning is done in educational institutions to prepare them for future innovations. Various innovations are made in the field of medicine, AI, online business, technology which has made the life of the public more comfortable and easier.

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## **Education:**

Education is the identity of each and every civilized citizen in society. Considering this, the Kathmandu we envision provides quality and skill oriented education. Both formal and technical education are provided and students can take them according to their interests. In the present context technical education is considered more relevant so it is given emphasis. It is skill oriented and helps to generate new employment opportunities. New education model has been implemented that stimulates economic growth and leads to the path of self-reliance. Vocational training and skill development programmes are being made accessible to the people in every nook and corner of the country. Education has upgraded so much that students do not fly abroad but rather international students come to Kathmandu to study. Only limited seats are provided for international students. E- learning has been upgraded which has helped students to connect with the professors all around the globe.

The people with disabilities have been facilitated with disabled friendly schools that have access to equal opportunities and higher education. The literacy rate has increased and reached 97%. Financial education is added to the curriculum which has helped the students to learn about utilizing and investing money.

Government schools and universities are run through the hiring of qualified and well-paid teachers. There are expanded linkages with prominent, highly-rated Asian colleges and technical institutions. Nepali universities are ranked among the top 100 in Asia. All children who start primary school complete their Secondary Education Examination or International Baccalaureate. There are free childcare centres in every ward, including pre-schools which are run by professional early childhood educators. Education disparities among caste and ethnic communities have been a thing of the past.

People who have gone abroad return to Kathmandu bringing back fresh investment, energies and ideas. Many innovative 21st century careers are flourishing such as in film editing, online marketing, multimedia graphics, online publishing, technology, healthcare and service industries. This has led to an economic renaissance in Nepal.

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## Road network and smart technology:

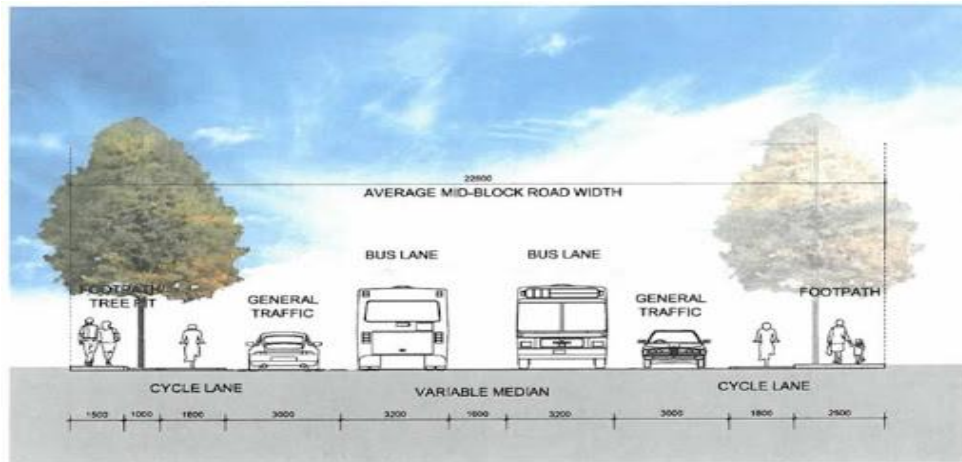


Figure 13 :Cross section road with dedicated lanes

The cross section road is designed which has dedicated lanes. In average midblock road width, on the very side there is footpath which is accompanied by street lights that run by solar energy. Then there is a tree line. Flowering trees are present everywhere along the roads and walkways. This has added the beauty of the road. Then there is a cycle lane, parking in some needed places, then a lane for general traffic and then bus lanes on each side. There are only electric private vehicles on the streets, as well as separate commuter bicycle and walking paths along the banks of small rivulets throughout the Valley. Green public transportation( electric buses, light rails and urban gondolas) are only used. Government is very concerned about the carbon emission by vehicles so it has started various campaigns and programs that motivate people to use electric vehicles. Many places have established charging stations for such vehicles. On the bus lanes, public buses are only run. Most of them are electric while some are in the process of getting turned into electric. The comfort, reliability, safety, frequency, availability and affordability of public transport is very high. So, people prefer traveling by public transport rather than using private vehicles.

On the roads there is no congestion of overhead wires. There are no poles and the wire system has been made underground. The gas line and wire line run beneath the road system.

There are light rails running in the busiest part of the Kathmandu. They are always on time. Students, officers, workers, everyone prefers taking the train to reach their destination. Government supports the development of sustainable transport systems, including energy- efficient multimodal transport systems.

### Heritage sites and conservation:

The ancient temples, bahals, palaces and monuments are restored, respected and protected. New temples, stupas and sacred gardens are built along the ridges of the Valley connected by walking trails. No residential or commercial buildings are built near the heritage sites. Similar types of structures are built around them. Timely renovations are done and it is made sure that they will not get affected by any natural calamities. Government has made plans and policies for the

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proper conservation of the heritage sites. The citizens are well aware about the need for conservation of those sites as they consider the heritage sites to be their identity. They promote the heritage sites and people from all around the globe come to Nepal to see them.

The industries are not allowed to operate near the heritage sites because of the effects they can have on those sites.

### **Environment and wildlife:**

Well-managed national and provincial parks surround the Kathmandu Valley conserving the watershed, restoring biodiversity, protecting wildlife habitats and ensuring urban harmony with nearby nature. The Valley's rivers and streams are clean and flow from their sources through their natural drainage. Every once in a while cleaning campaigns are also organized. But the need for cleaning is not seen as the river is clean. Just to ensure it remains clean such campaigns are organized. Plastic and garbage don't litter the city's waterways or walkways. The skies are mostly clear so the magnificent Himalayan peaks are visible from the Valley. Different viewpoints are made to see the skyline of the valley.

The major problem that degrades the environment is plastic. So the city has gone plastic bags free since the last five years. Paper bags are used and people always carry their own bags while shopping. We are in the process of getting fully rid of plastic. Small pieces of plastics are hard to track and they cause many problems. The small pieces mainly come from the cut we make in the milk packet. That is why we have requested people not to make such cuts and be aware of their plastic use. We hope that in the next two to three years we can get rid of plastics completely.

There are dustbins in various corners of the city. The dustbins are labelled according to the waste people can put in them which are biodegradable wastes, non biodegradable and plastic wastes and papers and glass bottles. Such dustbins are coloured as green, blue and yellow respectively.

The citizens are well aware that they should not litter their place and make good use of such dustbins. Roads are free from wastes and garbage. Concept of 5R :refuse, reduce, reuse, repurpose, and then recycle is implemented.

The air quality of the city is very good. Due to use of electric vehicles and very less carbon emission, there is no air pollution. People can breathe fresh air and the risk of having respiratory disease is nearly zero. The sky line is always clear. Smog does not occur. The plants and trees in the roadways help to maintain the pollution level. The industries are very far from the residential and heritage sites. So they don't impact the health of the people. The people working in such industries also check up frequently so that they remain safe.

In recent data, there are five zoos in the valley that conserve wildlife by maintaining enriched habitat for the animals. The animals are protected from poachers, habitat loss, starvation and predators. Many endangered species are also protected.

### **Sports:**

Nepal hosts its own professional sports leagues in football, basketball and cricket for women and men (like the recent Nepal Basketball League tournament) with widespread social media followings. New state of the art stadiums are established that offer young people opportunities to become full-time professional athletes and compete internationally in their chosen fields.

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To ensure that Kathmandu is less overwhelmed, all seven provincial capital cities will have expanded authority and responsibility to become well-planned cities of 500,000 to 1 million people each, thereby reducing the population density in the Kathmandu Valley.

**Society,Civilization and religion:**

Greed and jealousy will be banished while city dwellers on their morning walks will bow a gentle 'namaskar' to the flocks of trans-Asian migrating birds over the city's clear skies as contented families stroll the shaded walkways of a true Nepali Nirvana. Every ethnic group accepts each other's lifestyle and culture. Brotherhood, Tolerance and Cooperation is well prevalent in the city. Humanity is every citizen's religion.

**Conclusion:**

Kathmandu is very rich in its culture, art and architecture. The city is flourishing everyday with greater innovation and development each day. From architecture, education, environment to research, development and innovation, there are only positive changes seen. The architecture of the valley shows its rich values, culture and history so traditional architectural designs are adopted by the people for building houses. The heritage sites are restored, protected and conserved. Government has made sure that local people of those areas are aware about their heritages. Science and technology is progressing. It has helped people to uplift their living standard and has served the best of people. The administration and government is run by eligible candidates selected by people. The plans and policies made by the government are implemented to its fullest. Different research centers, science parks and business centres are made which has encouraged people to engage themselves in new research. New success stories are heard every week from almost every sector such as medicine, AI,online business and technology. Universities, colleges and schools are facilitated by well qualified professors and a proper environment for the students to learn and grow. Road network is very managed with dedicated lanes and green public transport has also helped in controlling air pollution. The environment is free from pollution. People are living by conserving watersheds, restoring biodiversity, protecting wildlife habitats and ensuring urban harmony with nearby nature. It is a civilized place for humans to reside with a good and prosperous environment and development.

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