SOON VALLEY ECO-TOURISM MASTER PLAN 2040

PROPOSALS & POLICY RECOMMENDATIONS



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Urban Sector Planning & Management Services Unit

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List of Acronyms

BHUs	Basic Health Units
BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
CO Unit	Chief Officer Unit
CPEC	China Pakistan Economic Corridor
DO	District Officer
DMPP	Drought Mitigation & Preparedness Program
EIA	Environmental Impact Assessment
EPD	Environment Protection Department
EMMP	Environmental Management and Monitoring Plan
FAR	Floor Area Ratio
FESCO	Faisalabad Electric Supply Company
GIS	Geographic Information System
HUD & PHED	Housing Urban Development and Public Health Engineering Department
IUCN	International Union for Conservation of Nature
LPG	Liquefied Petroleum Gas
MC	Municipal Committee
MS	Medical Superintendent
NDMA	National Disaster Management Authority
NEQs	National Environmental Quality Standards
NRSP	National Rural Support Program
NGOs	Non-Government Organizations
PDMA	Provincial Disaster Management Authority
PKR	Pakistani Rupees
PPP	Public Private Partnership

PRSP	Participatory Rural Support Program
REDD	Reducing Emission from Deforestation & forest Degradation
RHCs	Rural Health Centers
SWM	Solid Waste Management
TDCP	Tourism Development Cooperation of Punjab
THQ	Tehsil Headquarter Hospital
TMA	Tehsil Municipal Administration
WWF	World Wide Fund for Nature

Chapter 1

INTRODUCTION



The Eco-Tourism Master Plan for the Soon Valley envisages the Valley to be conserved as an eco-sustainable niche' as well as a vibrant tourist destination.



This chapter entails the need to prepare Eco-Tourism Master Plan of Soon Valley. It discusses the vision, objectives and rationale to develop Soon Valley as an eco-tourist destination. Moreover, it explains the detailed methodological framework adopted by the Consultants, to achieve the desired objectives, focusing on how Eco-tourism master will reshape and boost up the economy by promoting tourism development in the area.

1.1. Project Rationale

The Soon Valley is home to a diverse range of natural attractions, from a pristine environment to mountains, world-renowned nature reserves, and untouched wilderness areas. Likewise, the Valley has a diverse cultural and historical heritage and is known for the birthplace of many national heroes. . The valley is situated in the Salt Range and is counted among the strong tourist destinations in the Punjab Province.

Soon Valley Eco-Tourism Master Plan is a policy initiative taken by the Government of Punjab through the Tourism Development Corporation of Punjab (TDCP). The Urban Unit, through its concerted efforts, has provided technical assistance for the project and has played an active role in preparing the Soon Valley Master Plan.

Despite the fact that the Valley is endowed with natural and cultural resources with a high tourism potential, it has not been optimally exploited to generate a significant impact on economic growth and development within the Valley. Till date, there has been no pragmatic tourism planning done for the Soon Valley which aims at tapping the massive potential of the Valley. No such holistic approach has been adopted with respect to

developing the site, services and conserving the environment. Seeing the great significance the Valley holds with relevance to Tourism, the Government of Punjab envisioned a long-term development policy framework for the area through the preparation of Soon Valley Eco-tourism Master Plan 2040.

The Master Plan puts efforts for the sustainable tourism development, management and taking environment and land use growth in harmony with nature.

The Master Plan embeds the principles of environmental sustainability and global best practices of eco-tourism development. The development of the Soon Valley Eco-Tourism Master Plan 2040, based on the mandate above, was undertaken in a coordinated manner, within strategic guidelines, and with the cooperation of all stakeholders. The Soon Valley Eco-Tourism Master Plan provides a strategic framework covering the plan period of 2016-2040. This document is a broad framework that provides strategic direction and guidance to grow and develop tourism in the Soon Valley in harmony with the environment and development, so as to maximize the tourism potential and increase the tourism sector contribution to the growth and development of the Soon Valley economy.

1.2. Objectives

The sustainable use of the natural resources for tourism is important not only for the environment but also for the local and regional economy. Since the Soon Valley is an environmentally sensitive area; therefore, to ensure the sustainable use of resources, and protection of natural environment, which is essential for the well-being and socio-economic development of local communities. The Master Plan has the following objectives:

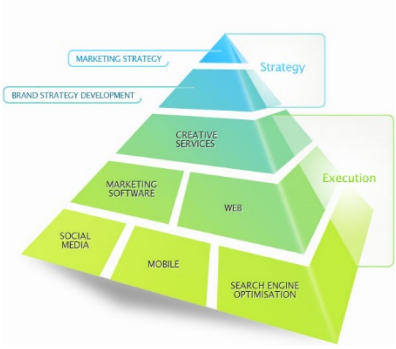
1. To develop a shared strategic vision for the sustainable social, economic, cultural, environment and tourism development of the Valley, and translation of the vision into tangible action plans.
2. To strategize local tourism development initiatives while integrating the Ramsar Convention's wetlands conservation guidelines into local development perspective viz.-a-viz.
3. To enhance the environmental conservation and

Timely achievement of objectives is a way towards efficient implementation



management of the Valley by mainstreaming environmental sustainability into all local development related policies/regulations, and strengthening institutional arrangements to achieve the same.

1.3. Vision



"Soon Valley Eco-Tourism Master Plan 2040 envisions to develop the Valley as a most desirable and sustainable tourist destination through a collaborative planning and development process. The Plan also envisages to help boost the local economy by capitalizing on local culture, heritage and nature-based tourism while still conserving its ecological capital."

The visioning process adopted for the Soon Valley Eco-Tourism Master Plan 2040 takes into account the recommendations from and aspirations of all cross-sections of society as well as institutional stakeholders to build a shared vision. The process helped the Consultants subsequently, to develop a consensus "Vision Statement" that will enable the plan to be implemented successfully leading through a collaborative approach and community stewardship.

The following vision statement has been devised through a collaborative consultative process, which forms the backbone of the Eco-Tourism Master Planning Document of the valley:

1.4. Methodology

"Better begun is half done."

The process of developing the Soon Valley Eco-Tourism Master Plan called for a number of steps.. The first one focused on gaining an overview of the current state of sectors that are related to the tourism. This involved Land Use, Transport, Economy and Livelihood, Environment, Tourism, Social and Physical Infrastructure, and Institutional Framework that affects how tourism is being managed and promoted in the Soon Valley. The Sectoral Situational Review not only enabled the Consultants to understand the state of tourism in the Soon Valley but also helped in the creation of the framework under which tourism development in the Valley needs to take place. Once the Situational Review was

completed, the Soon Valley Eco-Tourism Master Plan was developed to meet the expectations for the coming years. The methodology used for the overall development of the Soon Valley Eco-Tourism Master Plan is as follows:

Figure 1: Project Methodology



1.5. Report outline

The report is organized in two sections. The first section introduces the project rationale, objectives, master plan vision, and methodology adopted for the preparation of the master plan. The second section summarizes the key findings of the situational analysis; which covers the sectors of Land Use, Transport, Economy and Livelihood, Environment, Tourism, Social and Physical Infrastructure, and the Institutional Framework. Moreover, sectoral proposals are framed which outline the strategic priority areas and actions. The seven key



priority areas that need to be addressed are Land Use, Transport, Economy and Livelihood, Environment, Tourism, Social and Physical Infrastructure, and the Institutional Framework. Each priority area is addressed separately. The framework for each focused area is examined, as are the key issues that need to be addressed in the Soon Valley. Specific objectives for each area are highlighted, and strategic interventions are suggested to meet these objectives. This section provides the conclusion to this report.

CHAPTER 2

Land Use



CHAPTER 2: Land Use

This chapter addresses all the envisaged issues in previous sections and dovetails the environment and tourism into avant-garde practices of land use planning in the form of "Eco-Tourism Master Plan for Soon Valley" with a holistic vision. Proposed policy framework spans over a planned period of 25 years and further divided into Short, Medium and Long Term Policy framework for seven key sectors (land use, accessibility and transportation, economy and livelihood, environment, infrastructure, tourism, and institutional framework) expanding plan vision over plan period and even beyond.

2.1. Land Use

The vision as described in the preceding Volume 1, anticipates a range of spatial changes to ensure economy gains momentum along with sizeable growth in commercial and industrial activity. The spatial needs for commerce, industry, housing and infrastructure development shall be provided through a set of policies and programs keeping in view the challenges discussed below.

- *Slow development in the Valley regarding built up area*
- *Severe pressure on forest area due to increase in agricultural activities in the Valley*
- *No urban planning plan has been made to foster and control the growth of Soon*

2.1.1. Challenges

- Land cover and land use change analysis shows that Soon Valley is under-exploited in terms of its development. Development initiatives taken in the past are not enough to foster the economic growth of the Valley. From 1990-1995, there is an increase of 6% in the built-up area of Soon Valley while it rose up to 12% in 2015 that shows slow development in the area.
- Forest area of Soon Valley is under severe pressure due to increased agricultural activities. From 1990-2015, there is decrease in forest area from 453 sq.km to 281 sq.km mainly to gain more area for agriculture
- No urban planning intervention or environmental conservation plan has been undertaken or prepared in the past to foster and control the growth of Soon Valley. The

Net result is haphazard development in the Soon Valley which puts the environment and habitat destruction for wildlife on the rise.

- Spatial distribution of different land uses is not coherent and integrated thereby causing serious problems for the residents. For example, health and educational facilities are concentrated only along main roads thus people have to face accessibility issues.
- Employment opportunities are not diverse, and pace of commercial development is very slow. Moreover, due to weak administrative control, major roads and streets in built up areas are suffering from encroachments.
- Naushera being a major settlement in Soon Valley is under pressure as most of the people move to Naushera for meeting their daily needs. Most of the infrastructure is confined to Naushera, which always attracts more development activities. Most of the infrastructure provided in the settlements is overburdened, improperly designed and worn out.
- Most of the development being undertaken violates the planning and engineering standards so probability of loss increases in case of an earthquake or other calamity.
- Institutions responsible for the smooth growth of project area are not provided with necessary technical and financial resources and ultimately development is taking place without any control. Thus, the capacity of administrative officials is also reducing.
- Immense tourism potential can significantly contribute towards revenue and employment generation, but no such effort has been made to exploit the tourism potential of the area.
- The diversity of landscape provides a great opportunity to foster tourism development coupled with environmentally viable urban design.
- There are many historical buildings in the Soon Valley like remains of forts, shrines, rest houses, etc. but they have

- *Spatial distribution of different land uses is not coherent and integrated thereby causing serious problems for the residents.*
- *Employment opportunities are not diverse, and pace of commercial development is very slow.*
- *Most of the infrastructure provided in the settlements is overburdened, improperly designed and worn out.*

- *Due to limitations of technical and financial resources development is taking place without any control.*
- *There are many historical buildings in the Soon Valle, which can contribute to the tourism economy but treated badly.*

been neglected badly. If managed properly, they can contribute much to the tourism economy.

- Despite being a beautiful tourist avenue, the project area generally lacks hospitality services. Visitors face many difficulties due to this as hospitality services are only concentrated in the Naushera Town.
- Some poor and low quality residential development is found in central areas of Naushera, Uchhali, and Khabekki etc.

2.1.2. Guiding Principles

In Volume 1, the Consultants have conducted various land use analysis like Land Suitability Analysis, Land Use and Land Cover Change Analysis, Land Cover Change Detection Analysis to understand the spatio-temporal growth of Soon Valley in different periods of time and land suitability for various developments.

The analyses act as guiding principles because it reveals the site being environmentally sensitive but has also got potential for new development. Moreover, the Valley's development trend over various time periods has also been studied.

2.1.3. Sustainable Land Use Planning for Spatial Growth

- *Naushera has the potential to be an economic hub in the entire Soon Valley.*
- *Proposal for Naushera to develop as a high density*

Spatial changes will occur across the project area through a development process based on the following growth strategies:

a) Transforming Naushera as a center

Naushera has the potential to be an economic hub in the entire Soon Valley. People from all over the Soon Valley move to Naushera for their commerce and other activities. It is proposed to develop Naushera as a high density town. Land Use Plan for Naushera has been given below which shows existing as well as the proposed land uses for future.

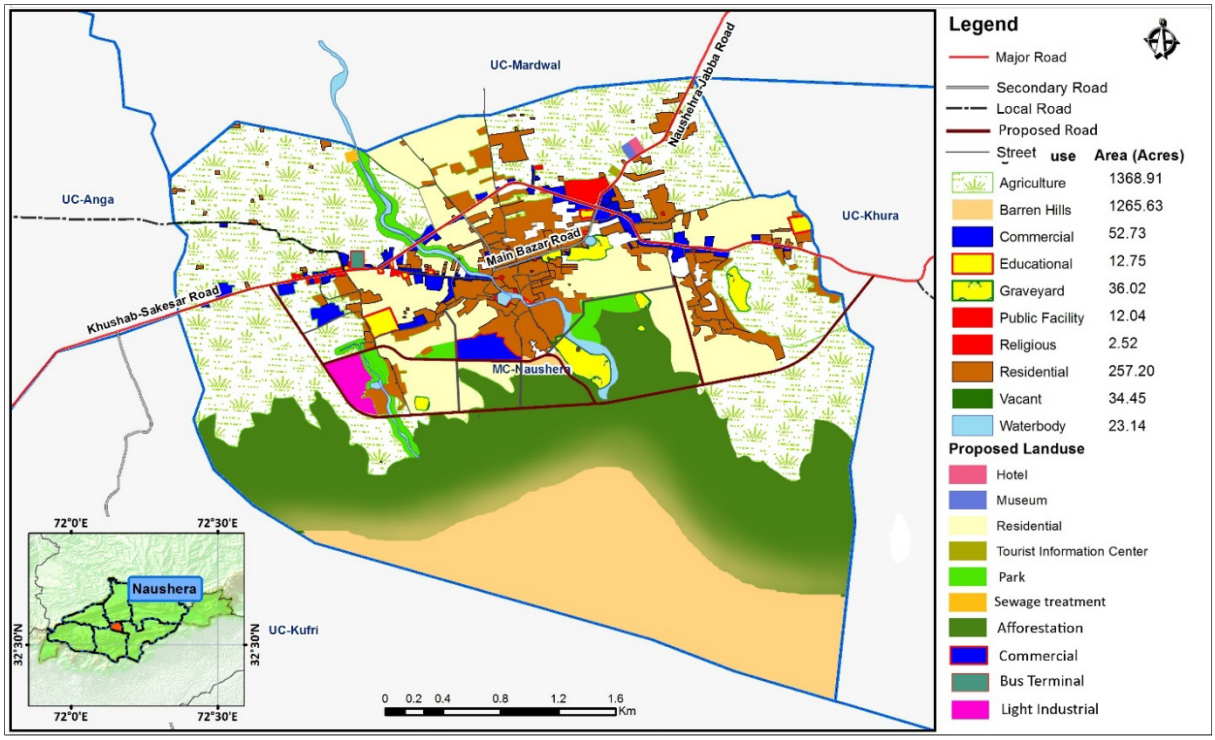


Figure 2: Future Land Use Plan of MC Naushera

The proposed land use plan draws the following aspects to be implemented:

i. Future Residential Zone: To address the future residential requirements, new planned residential zones have been allocated. It is recommended that all the new residential development may be directed to this zone. The proposed residential use in Naushera MC is around 273 acres.

ii. Light Manufacturing Zone: Since people living in Naushera Town as well the overall Soon Valley depend primarily on the agriculture sector. There is no industry existing in the Valley. The Consultants propose that a Light Manufacturing Zone may be established within the municipal limits of Naushera Town. The total proposed area of light manufacturing zone is 16 acres.

iii. Commercial District: To capitalize the untapped potential of the Naushera Town, it is proposed that the

- *The proposed residential use in Naushera MC is around 273 acres.*
- *The total proposed area of light manufacturing zone is 16 acres.*
- *78 acres of land has been reserved for the commercial activities within Naushera MC.*

commercial activities such as shops, markets, offices etc. would be developed. Therefore, around 78 acres of land has been reserved for the commercial activities within Naushera MC.

- *53 acres of area has been proposed for parks and open spaces in the Whole Soon Valley*
- *Existing transportation infrastructure in the Soon Valley doesn't offer accessibility, affordability and availability of public transportation.*

iv. Tourism & Hospitality District: Soon Valley lacks tourism and hospitality services as there are, currently, no adequate services that supports tourism in the area. Given that, it is proposed to provide hospitality and tourism services in Naushera Town. The proposed facilities include Tourism Information Center, Museum, and Hotels. The location of these facilities within Naushera Town is shown on the map.

v. Green and Parks: As the whole Soon Valley lacks green spaces and parks, so it is proposed that there would be three parks within Naushera MC (as depicted in the map given above). So, the natives, as well as the tourists, can enjoy the green environment (in-addition to the beauty of lakes and other historical places within the Valley). The total proposed area of these parks and open spaces is 53 acres.

vi. Transportation Infrastructure: Existing transportation infrastructure in the Soon Valley doesn't offer accessibility, affordability and availability of public transportation. People face serious mobility constraints. Keeping in view these issues, the improvements in transportation infrastructure have been proposed including the development of a new bus terminal in Naushera Town, resurfacing and maintenance of major roads directly connected with Naushera and provision of affordable public buses for travelers.

The following tables shows the comparison of existing and proposed land uses for Naushera Town.

Table 1: Existing and Proposed Land uses for Naushera Town

Land Use	Area In Acres		Difference (In Acres)
	Existing	Proposed	
Agriculture	1369	953	(-)416
Barren Hills	1260	477	(-)783
Commercial	54	78	(+)24
Residential	217	545	(+)328
Tourism & Hospitality District			
Hotel	0	1	(+)1
Museum	0	1	(+)1
Tourist Information Center	0	1	(+)1
Green and Parks	0	53	(+)53
Forest	0	783	(+)783
Public Buildings			
Bus terminal	0	2	(+)2
Sewage treatment	0	1	(+)1
Religious	3	3	0
Public Facility	12	12	0
Graveyard	36	36	0
Educational	13	13	0
Industrial	0	16	(+)16
Water Body	23	23	0
Transportation Infrastructure	71	99	(+)28
Vacant	39	_	(-)39
TOTAL	**3096**	**3096**	**0**

b) Regenerating the Inner Areas of Naushera, Khabekki and Uchhali

- A program for regeneration should be developed for the inner areas of Naushera, Uchhali, Khabekki and other areas identified by MC Naushera for preserving their cultural identities.
- This is to be taken upthrough consultation and dialogues with local stakeholders.
- The plans should facilitate the economy by improving accessibility as well as creating new room for more efficient land use.

- *Regeneration Programs should be developed for the inner areas of Naushera, Uchhali & Khabekki*
- *The plans should facilitate the economy by improving accessibility as well as creating new room for more efficient land use.*

- *Pedestrianization should be encouraged in Main Bazar, Y Cross Road in Naushera and other areas in Uchhali, Khabekki, Angah, etc.*

  Naushera has been under severe pressure due to movements from all over the Soon Valley, thus new economic opportunities should be promoted in Adjoining areas

The restriction or curtailment of vehicular movement and provision of pedestrian movement should be ensured in the regenerated areas

- Pedestrianization should be encouraged in Main Bazar, Y Cross Road in Naushera and other areas in Uchhali, Khabekki, Angah, etc.

c) Developing New Local Commercial Centers / Magnets of Growth

- Until now, Naushera has been under severe pressure due to movements from all over the Soon Valley, thus new economic opportunities should be promoted in areas like Uchhali, Khabekki, Sodhi and Mardwal.
- Developing additional economic centers in areas like Uchhali, Khabekki, Anagh, Sodhi will help decentralize the existing economic activity and public services from Naushera, as well as spur growth in areas that could be planned for new development.

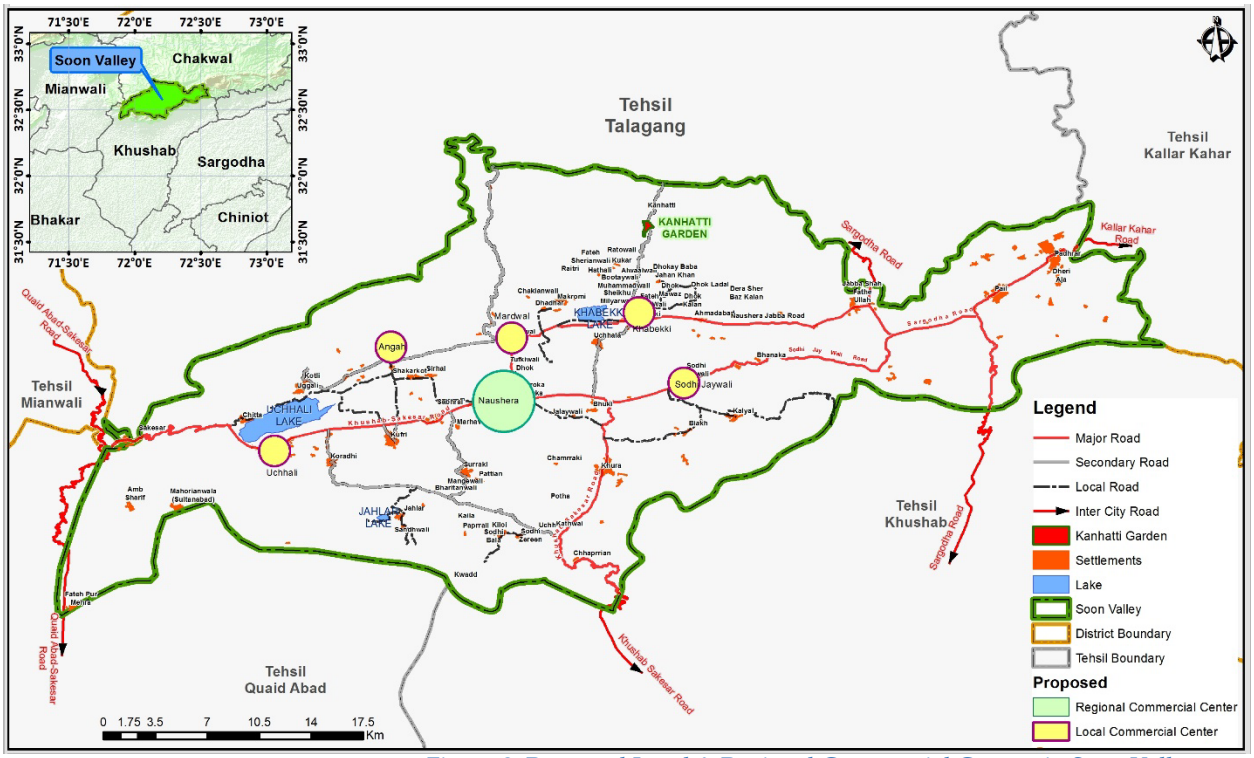


Figure 3: Proposed Local & Regional Commercial Centers in Soon Valley

d) Promoting Mixed Use Development

Unplanned mixed use development has been observed in all settlements like Naushera, Uchhali, Khabekki, Sodhi, Kufri. Thus, there is a need to ensure planned mixed use growth preserving natural fabric of cities. Realizing the development potential of Naushera, special consideration should be given by MC Naushera for taking up mixed use development works.

- *There is a need to ensure planned mixed use growth preserving natural fabric of cities.*

e) A Policy for Settlement Renewal

- The key consideration should be the sustainable use of land resources to improve the existing land use in a holistic manner. The principles of redevelopment, preservation and rehabilitation should be employed in the project area.
- Redevelopment: To redevelop dilapidated buildings/areas with unsatisfactory and substandard living conditions by facilitating the owners, infrastructure providers and private sector.
- Preservation: To preserve buildings of heritage value and carry out comprehensive re-planning and restructuring for the priority projects which will, at the same time, enhance the provision of local open spaces and community /welfare facilities.
- Rehabilitation: To address decay of building / area by proper maintenance. The rehabilitation, the active participation of private owners in the maintenance and renovation may play a vital role.
- For sustainable use of land resources and improvement of the existing land uses, a policy of settlements renewal should be adopted.
- Urban design projects for areas like Takbeer Chowk, Sodhi Chowk, Main Bazar Naushera, Y-Cross Naushera, and Uchhali Morr should be developed for efficient land utilization. Municipal Committee should also identify further areas for redevelopment, preservation and rehabilitation.

- *Redevelopment of dilapidated buildings/areas by facilitating the owners, infrastructure providers and private sector*
- *Settlements renewal policy should be adopted for sustainable use of land resources and improvement of the existing land use*
- *Urban design projects should be developed for efficient land utilization*

f) **Transport Infrastructure**

- Municipal Committee in collaboration with district government should make adequate provisions for transport infrastructure facilities.
- New bus terminals and bus stops should be established.
- Proper check and balance should be kept on public transport operators.
- Areas like Sodhi, Kalyal Sharif, Khabekki, Angah should be given special attention in terms of connectivity.
- For tourism promotion, special buses should be operated in Soon Valley so that visitors can easily reach all the tourism spots.

New bus terminals and bus stops should be established

Areas like Sodhi, Kalyal Sharif, Khabekki, Angah should be given special attention in terms of connectivity

For tourism promotion, special buses should be

g) Development of Project Area Entrance Points

Adequate provision for present and future needs to house the facilities, and sensitive installations of the law enforcement agencies shall be made and land to be earmarked in accordance with the strategic plan of the agencies.

h) Solid Waste Dumping Sites

One of the major issues in the project area is the poor solid waste management system. Open dumping is observed along the main roads and streets. Therefore, MC Naushera should identify dumping sites for proper handling of the refuse. Waste is also seen getting disposed off near Uchhali Lake and Jahlar Lake. The administration should take serious steps and disposal of open waste should be strictly prohibited.

MC Naushera should identify dumping sites for proper handling of the refuse

Professionals from diverse background should be introduced for enhancing the capacity of MCs

i) Enhancing the Management and Technical Capacity

Professionals from diverse background like Town Planning, Environment, Tourism, Architecture, Geology, Transportation, Planning Law, and Estate Management should be introduced for enhancing the capacity of MCs.

2.1.4. Land Use Planning for Disaster Risk Reduction

Sound application and decisions on land use growth and development can reduce risk significantly. Local governments that are willing, and develop land use in the public interest, can create safer and more inclusive environment. Steering major public and private investments in risk reducing infrastructure and housing away from hazardous locations, reduces the risk for present and future generations and eliminates the need for expensive corrective measures. Following are the policies to ensure disaster risk resilient land use planning in Soon Valley.

i) **Developing a hierarchy of planning principles by identification of high-risk areas**

Developing a hierarchy of planning principles and decision-making processes in high-risk areas as have been identified in early sections of the report.

ii) **Site selection and development controls**

- Through land suitability analysis presented in Volume 1, the administration should avoid taking up development in areas where there is increased likelihood of disaster occurrence.
- Keep development out of high-risk zones. For example, areas near Jahlar Lake, Ambh Sharif, and Kanhatti are not fit for development, as identified in land suitability analysis. Development should be prohibited in such areas.
- Slope stabilization Should be carried out in land slide prone areas. This could be done by building up protective structures, taking up natural measures and constructing retaining walls in building along with proper drainage system. . For example, areas near Kalyal Sharif, Sodhi, Sureki have high slopes so special measures should be taken by MC Naushera.

iii) **Strengthening and retrofitting existing buildings**

- *Administration should avoid taking up development in areas where there is increased likelihood of disaster occurrence*
- *Areas near Jahlar Lake, Ambh Sharif, and Kanhatti are not fit for development, as identified in land suitability analysis. Development should be prohibited in such areas*
- *Slope stabilization should be carried out in land slide prone areas*

Municipal committee should legally require the residents for retrofitting of structures situated in high risk areas and promote voluntary retrofitting of hazardous buildings

iv) Open space preservation

Allow riparian vegetation to prevent erosion near streams and lakes

v) Land acquisition

- Municipal Committee should buy land for existing critical facilities (schools, hospitals) within hazard prone areas, and converting into low risk land uses.
- Municipal Committee should use high-risk lands for open spaces

vi) Relocation

Government should relocate families and communities at risk of landslides, flash floods and areas with low accessibility. Similarly, the structures of public facilities within hazard prone areas, may be relocated in low risk zone.

vii) Consultation of Building Codes of Pakistan before granting building permissions

- The guidelines provided in Building Code of Pakistan Seismic Provisions 2007 should be consulted before granting planning permission / building plan sanctioning at Municipal Committee level.
- Declaration of risk areas on the basis of micro zonation studies that arise due to geophysical characteristics.

viii) Community involvement and preparation of pre and post disaster management plans by Municipal Committees

- Community should be involved at all levels for framing disaster risk resilient strategies. The citizens should be offered extensive training for disaster risk management thus fostering Community Based

Allow riparian vegetation to prevent erosion near streams and lakes

Municipal Committee should use high-risk lands for open spaces

Government should relocate families and communities at risk of landslides, flash floods and areas with low accessibility

The guidelines provided in Building Code of Pakistan Seismic Provisions 2007 should be consulted before granting planning permission / building plan sanctioning at Municipal Committee level

Disaster Management Programs at Tehsil level.

- MC Naushera along with other stakeholders should

Prepare a Comprehensive Pre & Post Disaster Risk Management Plan as per guidelines given by PDMA and review it regularly.

- Local Safety Commissions should be established at Municipal Committee level.

2.1.5. Exploring Growth Opportunities/Corridor

Naushera town, Uchhali and Khabekki are the major settlements in Soon Valley and most of the development is concentrated in these areas. There is a need to disperse the development and identify the new growth corridor. The growth corridors proposed in the plan are shown in the figure given below.

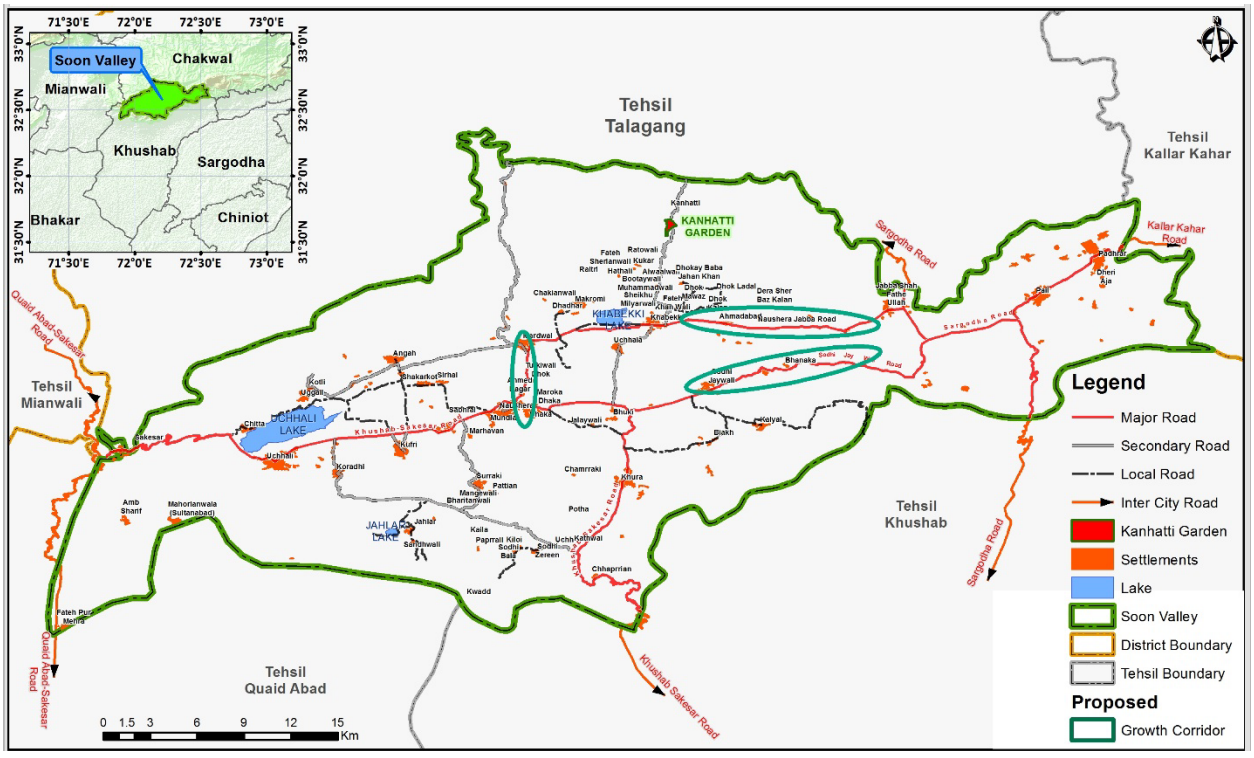


Figure 4: Proposed Growth Corridors in Soon Valley

The detailed description of these corridors is summarized below:

- Sodhi Jai Wali Node: There is a need to upgrade this corridor, as this is highly under-developed in term of amenities and community facilities. This corridor provides

direct access to some of the important tourist sites like Chambal Mandir, Darbar Sultan Mehdi, Sodhi Rest House and various waterfalls. So, high-end tourism services are proposed along this corridor.

- Mardwal Naushera Corridor: This corridor connects to important settlements like Naushera, Ahmad Nagar and Tuki Wala. Moreover, it provides direct access to various tourist sites like Mai wali Dheri and other historical ones.It is recommended to promote various tourism and other development activities along this corridor to ensure maximum availability of services to the residents and tourists.
- Naushera Jabba Corridor: This is another important corridor running through the center of Soon Valley. Leading towards Kanhatti Garden, some important settlements which are located around this corridor are Khabekki and Jabba Various tourists, commercial and public facilities should be developed here.

- *High-end tourism services are proposed along Sodhi Jai Wali Corridor, because it is highly under-developed in term of amenities and community facilities*
- *Promotion of various tourism and other development activities along Mardwal Naushera Corridor to ensure maximum availability of services to the residents and tourists.*

2.1.6.Primary Selection Criteria for Future Development

Following considerations have been taken into account while selecting/delineating future development zones specifically;

- The basic selection criteria for the development of future development zones is based on the concept that "every new development in Soon Valley should respect its declared status as an Environmentally Protected Area/Zone".
- The consultants analyzed the past and existing land use development pattern in Soon Valley very carefully while considering the environmental priorities on top of everything.
- Boundary of forests have been carefully evaluated, and consultants committed not to include any parts of this forestland to the maximum possible extent.

- High gradient and slopes (more than 20%) were also considered negative for development.
- Runoff/catchment and channels were also excluded to ensure the downstream protection of fresh water channels.
- However, it is strongly suggested that detailed planning of these areas/zones should be done considering micro-zonation/hazard area identification/declaration and any specific hazard prone areas falling in these zones/development must be left UNUSED and treated as a part of GREEN/OPEN AREAS.

a. Residential Development

- It is proposed that for all new development and schemes sponsored by MC Naushera or even by private sector should be designed in such a way that it provides land use components in following proportions
- Main access road right of way should not be less than 40 feet where geology permits otherwise 25-30 feet
- Inner service arteries/streets must not be less than 30 feet
- The commercial land use should not be more than 6% including shops, malls, offices with essential parking and transit node. Commercial buildings shall be allowed to have 75% of the covered area while the remaining 25% is to be left as part of the mandatory spaces and for car parking.
- Public Buildings should not be less than 4%.
- The parking in hill-side areas should preferably be designed in open terraced lots.
- Residential not more than 30% with maximum 3 habitable floors or as micro-zonation permits. The residential includes local residences, lodges and rental residential spaces.

- *Main access road right of way should not be less than 40 feet where geology permits*
- *Inner service arteries/streets must not be less than 30 feet*
- *The commercial land use should not be more than 6%*
- *Public Buildings should not be less than 4%*
- *Residential not more than 30% with maximum 3 habitable floors or as micro-zonation permits*

- *Open space should not be less than 30%.*
- *Each zone shall essentially provide a sewage transfer facility*
- *Soon Valley Special Building Bye-Laws should be framed in the light of this master plan.*

- Open space should not be less than 30%. (This should essentially include existing forests/green reserves and areas indicated not suitable for construction due to hazards of slope failure). The purpose is to provide maximum green scape to augment slope stabilization and aesthetics.
- Neighborhood block dimensions should be within 500 m X 500m walkable limit and neighborhood center should be placed in such a way that it is at 5-10 minute walk from every approaching side.
- Each zone must have a central commercial/public hub with a transit node and/or road link that will connect proposed zones to other segments of the town/valley.
- Each zone shall essentially provide a sewage transfer facility built as per guideline provided in the Solid Waste Management part of policy.
- Every prospective development project shall liable to furnish an EIA, Waste Management Plan and EMMP as per EPD regulations.
- It is further proposed that the prospective builder / developer should come up with at least three alternative intensification based neighborhood plans for the proposed development. The MC Naushera should sanction the best-fit design, which augments natural beauty, slope stabilization, walkability, eco-friendliness and minimal disturbance to the natural environment.
- It is proposed that all the new development should primarily be having a walkable neighborhood street pattern.
- It is further proposed that Soon Valley Special Building Bye-Laws should be framed in the light of this master plan.
- To achieve slope stability, it is proposed that permission should not be granted for the construction of the structure on slopes more than 20 degree.

- Moreover, land suitability analysis has been done which entails the land suitable for development and MC Naushera should select that parcel of land for residential development, which is the most suitable for residential development as per the Land Suitability Map.

b. Commercial & Hospitality

- Soon Valley has very low commercial development and majority of people commute to Naushera for meeting their daily needs.
- There is a need to create new commercial centers to spur the economic growth. New commercial centers should be established in Uchhali, Khabekki, Angah, Sodhi and Mardwal.

c. Protection of Heritage Sites

Soon Valley contains many heritage sites that are of huge significance and if properly managed can lead to great tourist influx in the area. Following are the heritage areas that need to be preserved and restored to their original shape.

1. Akrand Fort
2. Angah village regeneration
3. Baba Sultan Mehdi Darbar and Waterfall
4. Daip Shareef
5. Mai-wali Dheri
6. Sodhi Rest House
7. Tulhaath Fort
8. The ruins of Rat Ririri
9. Ambh Sharif
10. Punj Peer

d. Nature Zone

The plan intends to declare all the green/forest areas in and around of Naushera Town and other settlements within the Soon Valley (still not affected by anthropogenic activities and

human habitation) as Nature Zone supporting sustainable eco-characteristic of Soon Valley.

2.1.7. Emergent Management Planning for Early Short Term Projects

Short Term Projects

- *Managing emergent issues in Soon Valley should be taken up within the first five years of plan adoption.*
- *Devising detailed space standards for residential, hospitality and retail business and their internal sub uses structures;*
- *Declaration/development of parking facilities as identified in transportation proposals*
- *Traffic management planning*
- *Up gradation of dilapidated Infrastructure*

1) Managing emergent issues in Soon Valley should be taken up within the first five years of plan adoption.
2) Encroachment removal and control;
3) Appropriation and adoption of building byelaws;
4) Devising detailed space standards for residential, hospitality and retail business and their internal sub uses structures;
5) Enhancing efficiency and mobility by inducting/rehabilitation of weather protected walkways along all arteries;
6) Capacity enhancement of MC Naushera by inducting following staff:
   - Two Municipal Officer Planning and 4 assistant town planners. (Each assistant town planners should be further assisted by four building inspectors. Assistant town planners are proposed to monitor building control and development control independently union councils
   - Environmentalist for Waste Management Issues
   - GIS/IT Manager with support staff
   - Tourism Specialist
   - Architect / Urban Designer
   - Forest Specialist Structural Engineer
   - Geologist / Seismic Expert
   - Community Development Expert
   - Transportation Planner
   - Water Management Specialist
   - Expert to explore Public-Private Partnerships
   - Planning Law Expert
   - Estate Manager with support staff
7) Declaration/development of parking facilities as

identified

in transportation proposals;

8) Identify and compound illegally converted land uses;
9) Relaxing ban for renovation/maintenance of structures;
10) Traffic management planning;
11) Up gradation of dilapidated Infrastructure;
12) Creating visual vents – scenic opportunities for all.

2.1.8. Geology Supported Land Use Development

The following considerations should be undertaken while land use development in Soon Valley.

- A building permit may be refuted where construction has not been started since one year.
- Owner should plant and restore sufficient greenery as a vegetative cover
- Exercising land use controls such as conservation of forest and forestland shall be prohibited for any future.
- Municipal Committee Naushera should monitor newly permitted sites to make sure that cuts and fills are properly engineered and appropriate for contours of the land.

2.1.9. Built Heritage Conservation

- A local heritage conservation committee may be established that encourage and support conservation of heritage buildings.
- MC Naushera should make an archive of heritage and archeologically significant areas through enlistment and field surveys.
- Any proposed development within the historical areas should be immediately reported to the concerned authorities.
- Permission to commence development or land excavation should be sought from MC Naushera.
- If private sector takes on the preservation projects, they should be supported with tax incentives.
- Planning of new sites should minimize the disturbance of sites significant to historical natures.

- Effort should be made to maintain old street patterns, building faces in the historical areas/sites.

2.1.10. Land Use Planning and Urban Security

- Tourist security should be a prime focus of any policies made by MC Naushera,
- Installation of security surveillance network installation of CCTV network, community policing, linking all hospitality facilities to central security network, uploading tourist's database to central system through interactive data links to ensure security of guests against criminals.
- Tourism infrastructure should be designed in such a way to enhance physical security of elderly tourist agents
- Gardening incentives should be made an integral part of land use regulations as they would enhance food security

2.1.11. Environmentally Sustainable Land Use Planning

MC Naushera is expected to

- Control of degradation of environment in existing land use structure of the project area and environmental monitoring plan should be exercised across the board.
- Direct all proposed developers to furnish project based EIAs as per EPD's laws and must accomplish environmental monitoring plan, MC Naushera must involve local and tourist communities to promote resource and energy efficient campaigns through media, workshops, occasional promotional walks and workshops to reduce environmental stress in the Soon Valley.

2.1.12. GIS Tool for Urban Management

- MC Naushera should make best use of comprehensive land use GIS developed by consultants.

  The GIS Database developed proposed to be utilized for

- Preparation of land use maps for future
- Assessment of land use conversion in different parts of

project area

- Land suitability analysis to guide the selection process for opening new land for development
- Accessibility analysis for proposed major development projects
- Publication of maps at various scales with relevant details
- Infrastructure projects planning

2.1.13. Institutional and Implementation Framework

- Enhancing the capacity of MC Naushera to manage, regulate and encourage the environmentally sustainable physical growth of by inducting additional technical staff.
- MC Naushera must incorporate disaster resilience into building byelaws while promoting sustainable land use development through further studies, and in the light of site-specific proposals by engaging NDMA, PDMA and any other technical assistance.
- MC Naushera should also conduct training of their staff regularly so that they are well aware of modern trends in planning and development.

2.1.14. Key Projects Identified for Sustainable Land Use Development

a. Short Term Projects

The intent of these projects, as reflected in their descriptive title, is to initiate and precipitate change and action in consistence with the overall strategic framework of the Eco-Tourism Master Plan.

- Encroachment Removal and recovery of the right of ways around Takbeer Chowk Naushera, Main Bazar Naushera, Sodhi, etc.
- Design and construction of walkways along important roads like Naushera Jabba Road, Sodhi Rod, Sureki Road.
- Space inventory and construction of tourism support

Short Term Projects

- *Encroachment Removal and recovery of the right of ways around Takbeer Chowk Naushera, Main Bazar Naushera, Sodhi, etc.*
- *Space inventory and construction of tourism support structures as identified in tourism action*

structures as identified in tourism action

- Reducing Land Use incompatibilities, identifying illegally converted land uses, and further compounding them to generate revenues.
- Appropriation of Building Byelaws as per terrain zoning / micro-zonation
- Creating visual vents on important roads by eliminating illegal structures wherever found
- Incorporation of disaster resilient regulation into building bye-laws while promoting sustainable in the light of proposals given engaging NDMA, PDMA and any other technical assistance from UN agencies.
- Construction of new RESCUE 1122 centers, Model Police Station, Fire Service, Municipal Services Center, and Tourist Information Center in Municipal Complex and a Trauma Center in THQ Naushera.
- Provision for missing public / tourist infrastructure like weather protected walkways, rest/sit areas for elderly, vertical climbs / links to promote walkability, public lavatories and children attractions.
- Installation of security surveillance network; it includes installation of CCTV network, community policing, linking all hospitality facilities to the central security network, uploading tourists database to the central system through interactive data links to ensure the security of guests against criminals and other anti-social activities.
- Identification and declaration of parking/freight/transit terminal sites as identified in the transportation proposals and leasing out rights through some appropriate business model. It will benefit both the place and the users while adding some premium on municipal business.

- *Appropriation of Building Byelaws as per terrain zoning / micro-zonation*
- *Construction of new infrastructure like RESCUE 1122 centers, Model Police Station, Municipal Services Center*
- *Provision for missing public / tourist infrastructure*

b. Medium & Long Term Projects

These projects are expected to yield long-term desired objectives of the plan and such proposals/projects may be initiated by plan start term and shall span over the whole

plan

period.

- Delineating, declaring and conserving Urban Forests as suggested in land use proposals and initiating projects to promote nature lodging and trekking in these zones.
- Declaration and Rehabilitation of heritage sites mentioned above to promote heritage tourism.
- Declaration of hazard zones as identified and these zones (unsuitable for construction) could only be used as urban gardens/open parks.
- Leasing out encroachment/building control and monitoring.
- Promoting/achieving energy efficiency through public facilitation and building bye-laws and gradually imposing fines on inefficient structure and energy use.
- Standardization for hospitality design at every level from kiosks to hotels and lodges.
- Implementing urban design strategies/plans to bring a sense of places with the help of private sector promotional investments.
- Promoting horticulture and handicrafts as local industry.
- Hotels, Restaurants and other commercial projects should only be allowed if they provide adequate car parking spaces according to the floor area ratio Revenue generation by fine imposition and collection on the removal of green cover/tree/plant cutting for any non-permitted development.
- Campaigns to attract investments in tourism support infrastructure
- Construction of state-of-the-art hospital to promote medical tourism.
- Imposition of tourism levy to support the local development.
- Ensuring environmentally sustainable land use development by employing Environmental Management Practices.

- *Delineating, declaring and conserving Urban Forests as suggested in land use proposals*
- *Leasing out encroachment/building control and monitoring.*
- *Promoting horticulture and handicrafts as local industry*
- *Campaigns should be carried out to attract investments in tourism support infrastructure*
- *Environmental Management Practices should be employed to Ensure environmentally sustainable land use development*

Developing a local business model/standardization with the help of environmental management consultants for the promotion of Green Economy. Credits/discredits may add/boost local economy in the long run while still being environmentally sustainable.

CHAPTER 3

Accessibility & Transportation



3.1. Accessibility and Transportation

3.1.1 Key Findings

- *Greatest opportunities for private sector to invest in transportation sector regarding tourism*
- *Potential for improvement of connectivity with the adjoining areas and nearby cities*
- *Prime town of the valley is Naushera due to availability of more facilities here*

- The public transport modes currently available within the project area include buses, wagons, and rickshaws/chingchis. These essentially provide means to connect different settlements within the Valley and other major cities like Khushab, Sargodha, Mianwali, Kallar Kahar, Lahore and Islamabad. The local transport especially rickshaws are easily available at different locations and accessible within the project area. However, the quality of these vehicles is a major concern.
- Soon Valley being a potential tourism site still offers immense potential for tourism that eventually needs better communication network and quality service vehicles. Therefore, it has a big potential for the private sector to invest in the transportation sector eventually raise employment base as well as more business opportunities. At present, the Valley is well connected with rest of the towns and cities of Punjab by roads linking valley to Sargodha, Khushab, Mianwali and Kallar Kahar M2 interchange but the quality of road infrastructure still poses a great challenge to the sustainable development of the Valley.
- Naushera, being the prime town and tehsil headquarter of the Soon Valley attracts a majority of the tourists for different facilities like hotels, shopping, food places and other hospitality infrastructure. The transport facilities are available in this town for various neighboring tourist destinations. Major routes of inter-city traffic originate from this town connecting the valley with nearby cities/towns such as Jauharabad, Khushab, Pail, Uchhali, Padhrar, Kallar Kahar, Chakwal, Talagang etc. However, there is no planned bus terminal and other allied facilities provided here.
- Given the availability of the above mentioned public transport facilities, residents showed their satisfaction



Figure 5: The mobility pattern in Naushera is comprised of a mixed transport. However, pedestrian paths are not defined and the absence of footpaths also hinder the maneuvering of those on foot

over accessibility to nearby villages and towns of the project area but the quality of service and road condition was their primary concern, and that also remains a primary concern for tourists visiting the area.

- The existing public transport modes provide limited access to the tourist sites. The tourists are bound to use their vehicles to access such places. During the field studies, it was also observed that some of the tourists coming from nearby towns or villages use motorbikes to travel through the area, whereas tourists coming from far off places come, primarily, on their cars. Difficult terrain and dirt tracks still discourage tourist entry, at large.
- Rental cars, available at different points in Naushera such as Takbeer Chowk and Uchhali main bus stop, offer transport services 24 hours a day. These private rental car operators offer services to major tourist sites such as Khabekki Lake, Uchhali Lake and Kanhatti Garden while charging relatively high fares ranging from Rs.1500 to Rs. 2000 for a single visit. In-addition, because of the absence of reliable public transport and ambulance services in the area, the private rental car service is used for emergency medical and social purposes by the local community in absence of other reliable public transport and ambulance services in the area.
- The road network provides access to all main villages, settlements and lakes present in the project area. The access roads to tourist sites such as Khabekki Lake and Uchhali Lake are useable in all seasons, but the roads leading to Jahlar Lake and Kanhatti Garden are not in good condition and become slippery in the rainy season. According to a teacher of a Primary School in Kanhatti, the road leading to the place is very dangerous and has led to a number of deaths in the recent past. In-addition, the roads leading to other important sites including; Angah Fort, Maai Wali Dheri, Ambh Sharif, Akrand Fort, Daip Sharif, Kachiyaan wala Faqir, Tulaajha Fort, Nurshing Phowaar, Neeli Dhann, Sodhi Rest House, Tulhaah Fort

- *Rental car facilities are available in Valley for tourists.*
- *Roads conditions of some important tourist site like Jahlar Lake , Kanhatti Garden Maai Ambh Sharif are poor*

and Phulwari Rest House are also in very bad condition and become slippery during the rainy season. It is observed that the accessibility to some of the prime sites is only possible by using four-wheel drive cars/jeep.

- The commuting pattern shows that the majority of people residing in Soon Valley mainly use a motorbike, bicycle and public bus for daily commuting to their work place and other activities. Around 44% use motorbike, 17% use bicycle, 14% use public transport while only 8% walk to their destinations.
- The majority of people residing in settlements and villages such as Kufri, Anga, Jahlar, Uchhali and Khabekki commute to Naushera primarily for work and education purposes. While a very limited portion commutes to Jauharabad and Khushab for work related activities. Almost 62% of the people commute for their employment while 22% and 11% for education and social activities respectively. Thus, people mostly have to travel for earning a living.
- With respect to the income level of the residents, the monthly expenditure incurred onthe public transport facilities is relatively high as depicted in the analysis.76% of the travelers spend Rs. 2,000 to Rs. 4,000 which accounts for 25-30% of their monthly income. Despite having a large monthly expenditure on public transportation, the community is highly dissatisfied by the quality of public transport infrastructure and services.
- The segment of people that travels via public transportation appears high as compared to those who travel by owned vehicle. About 77% of the people travel daily while 11% of the people travel at least 4 to 5 times a day. It emerged that majority of these people don't have sufficient resources to own or opt for some better personal mode of transportation so public vehicles remain the only available choice for them. Therefore, investing in this sector either by public or private sector can bring about a significant change to the socio-economic structure of the

- *More dependency of joining settlements on Naushera regarding work and Education*
- *76% of the travelers spend 25-30% of their income on travelling*
- *77% of the people travel daily*

region. Thus, transport sector still offers great opportunity for investors.

- The bus stops are located at a distance from majority of the settlements and villages. As per study findings, among the commuters, 47% were of the view that they have to travel 3-5 km while 30% of traveler have to travel up to 8 km to reach the bus stops. Majority of these travelers find it very difficult to reach bus stops for accessing the public transport. Moreover, condition of these bus stops is very poor as there are no facilities such as; signage and information. Sign boards erected on different roads are in shabby condition and as majority of road signs and traffic mirrors are not directing rightly
- During field studies, it was observed that people residing in Sodhi face severe transport problem as only 1-2 buses pass by the town in 24 hours. Schedule of these buses is also not fixed. In case of emergency, people have to manage on their own.
- During field studies, following road sections were identified in poor condition and not really found favorable for driving.
  i) Sodhi to Naushera
  ii) Naushera to Khushab Road
  iii) Naushera to Sakesar Road
  iv) Naushera to Jahlar Road
  v) Link road to Kufri, Angah, Uchala and other settlements.
- Poor transport network and inadequate provision of buses result in adding to the grievances of for students, elderly and patients at large. It was informed by the residents that due to dilapidated road condition, it becomes very difficult to manage patients in critical condition. Students are unable to reach schools on time due to no regular schedule of buses and clumsy road condition. As buses are less in numbers, due to which these buses are overloaded during morning, evening, which are one cause of road

Transport sector offers great opportunity for investors

Improving the condition of bus stops by providing sitting facilities

Sodhi settlement face severe transport problem as only 1-2 buses pass by the town in 24 hours.

Some road sections were identified which are in poor condition i.e

i) Sodhi to Naushera
ii) Naushera to Khushab Road
iii) Naushera to Sakesar Road
iv) Naushera to Jahlar Road

accidents.

- The inadequate surface as well as sub-surface drainage of roads in the events of rains and subsequent flash flooding cause grave problems. The absence of quick drainage of rainwater has caused defects like potholing, raveling, cracking and even deformation.

3.1.2. Challenges

The tourist arrival has steadily increased at Soon Valley over the years with a significant increase in the percentage growth of visitors to the beautiful lakes and water falls. These tourists arrive in private and hired vehicles such as two-wheelers, cars, multi-utility vehicles, light commercial vehicles and buses.

It was observed that the following issues are of prime concern to the sustainable development of the region.

- There is no planned bus terminal and other allied facilities in the project area.
- Existing bus terminals are in clumsy condition with no waiting areas for passengers
- The project area is not connected to rail network
- Main roads are in deteriorated condition
- The access to different touristic sites is limited and difficult though while using existing public transport modes and the tourists have to use their vehicles to access those spots.
- High fares ranging from Rs.1,500 to Rs.2,000 are charged by private car rentals for a single visit to tourist sites
- Bus stops, traffic signs and traffic mirrors are in deteriorated condition and do not serve the desired purpose
- No buses are available in some areas like Chanbal, Sodhi, etc.
- Roads leading to sites like Kanhatti, Jahlar, Sodhi, etc. are narrow and worn out, causing accidents
- The absence of quick drainage of rainwater has caused



Figure 6: Deteriorated Road Condition which cause significant problems during rainy season



Figure 7: An extremely neglected Bus Stop Near Kufri Village, Soon Valley

defects like potholing, raveling, cracking and even deformation.

- Inadequate administrative capacity to prepare manage the transportation system of the project area
- Increased road deterioration can cause rise in accidents
- Transportation issues can decrease visitation rate of visitors

3.1.3 Transport Proposals

Following are the proposals for the improvement of transport system,

- Provide safe and efficient mobility for people and goods.
- Improve existing public transportation system, targeting affordability and convenience.
- Strengthen existing transportation infrastructure and services by considering various alternatives.
- Improve pedestrian safety and facilities.
- Development of transport related GIS data-base.
- Integrate plans of different transport subsectors
- Promote domestic connectivity and multimodal transport networks
- Enhance the technical, financial and human resources to implement the plan
- Promote the transfer of knowledge and technology to local levels
- Emphasis on asset management of the existing system
- Improvement of transport planning, prioritization and rationalizing public Sector expenditure and mobilization of resources from users and private sector
- Improvement of existing facilities and better operation, rather than new construction
- Optimal utilization of the existing capacity with emphasis on rehabilitation and upgrading
- Selective and cost efficient investment in economically viable new roads, including expansion of the rural network
- Development of innovative financing mechanisms and

- *Development of transport related GIS data-base*
- *Improvement of existing facilities and better operation, rather than new construction*
- *Emphasis on asset management of the existing system*

enhancement of private sector participation

- Supporting economic activities by connecting major economic centers with motorways or national highways
- Development or improvement of inter-modal facilities
- Management and effective utilization of existing resources
- Harmonization of transport network development with regional development policies and plans
- Network development aiming at alleviation of poverty and regional disparity
- High priority setting on transport projects in poor areas
- Project implementation by utilization of local materials and procurement of local labor force
- Minimization of transport cost by multi-modal transportation
- Strict regulation enforcement especially on overloading and transporting hazardous freight
- Development of a system for traffic accident statistical data
- Traffic safety education to drivers and school children
- Increase number of buses to facilitate the people to their destinations
- Drainage of rainwater should be improved along major roads
- Deteriorated roads should be improved to reduce accidents and easy access to tourist destinations
- Improving the condition of deteriorated bus stops, traffic signs and traffic mirrors
- Bus terminal condition should be improved and also provide sitting facility to passengers
- Improving the condition of roads leading to some important tourist sites like Kanhatti, Jahlar, Sodhi etc.
- Adoption of Punjab Traffic and Transport Manual 2008 to standardize the traffic signs and road geometry.

- *Increase number of buses to facilitate the people to their destinations*
- *Drainage of rainwater should be improved along major roads*
- *Deteriorated roads should be improved to reduce accidents and easy access to tourist destinations*
- *Adoption of Punjab Traffic and Transport Manual 2008 to standardize the traffic signs*

- Evolving a comprehensive transportation plan

- development and modeling to address vehicular traffic, public mass transportation, parking to provide for development of roadway and public transport/mass transit infrastructure development priorities for long range.
- Reducing congestion in the main bazar areas by a combination of rationalized parking, traffic management, pedestrianization, land use control and transit improvements.
- Improve safety, energy efficiency and air quality.
- Seek improvements through strong private sector participation.
- Formulate strategy for management and operation of local bus terminals.
- Review current processes undertaken to coordinate land use, economic development, and transportation planning, and update as required for a more integrated approach.
- Finalize and adopt new guidelines for the preparation of transportation impact studies.
- Review proposed transportation projects and programs to ensure they support the concept of complete communities and the urban structure.
- Explore opportunities to utilize transportation investments to leverage development potential in transformative areas.
- Considering the poor condition of roads, following segments are proposed to be improved:
    i. Sodhi to Naushera
    ii. Naushera to Khushab Road
    iii. Naushera to Sakesar Road
    iv. Naushera to Jahlar Road
    v. Links road to Kufri, Anga, Uchala and other settlements.

Following map shows the roads which need to be widened, resurfaced and maintained. While, new links have also been proposed to improve connectivity

Seek improvements in transport through strong private sector participation

Explore opportunities to utilize transportation investments to leverage development potential in transformative areas.

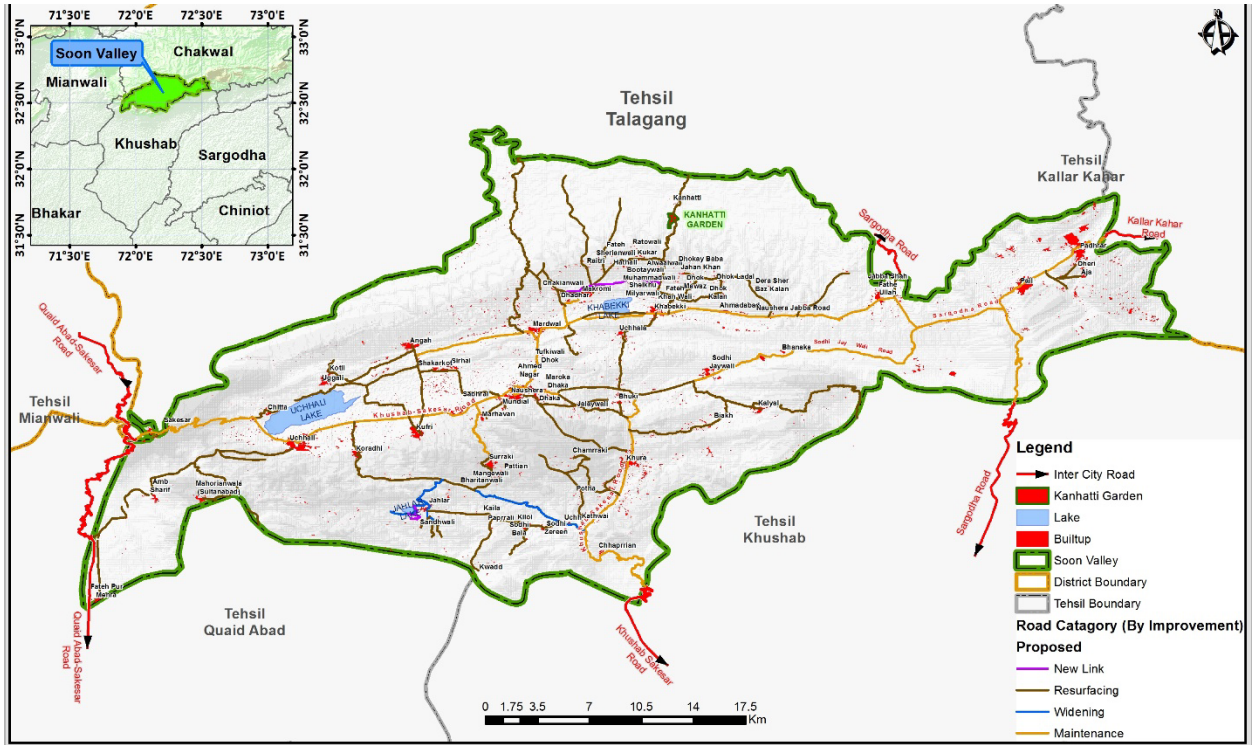


Figure 8: Road Improvement Map

- *Promotion of special tourist bus in the valley to promote tourism*
- *Potential for provision of a special shuttle service from Kalar Kahar to Naushera*

- A special tourist bus should be provided in Soon Valley for tourists to promote tourism
- Connectivity to adjoining settlements should be improved by providing efficient public transport.
- Intercity public transport should be improved.
- Special shuttle service should be provided from Kallar Kahar to Naushera
- The roads from Takbeer chowk to main bazar Naushera should be improved
- The links of roads to Naushera from Khushab, Minawali etc. should be improved
- Usage of print & electronic media to promote walkability and sustainability agendas by TMA/NGO
- Linking Soon Valley with the China Pakistan Economic Corridor (CPEC) Central and Eastern Links to promote opportunities for tourism sector.

- To promote pedestrianization in Naushera, foot paths should be provided on Takbeer Chowk, Y-Cross and Main Bazar.

The plan foresees the need to create regulatory and

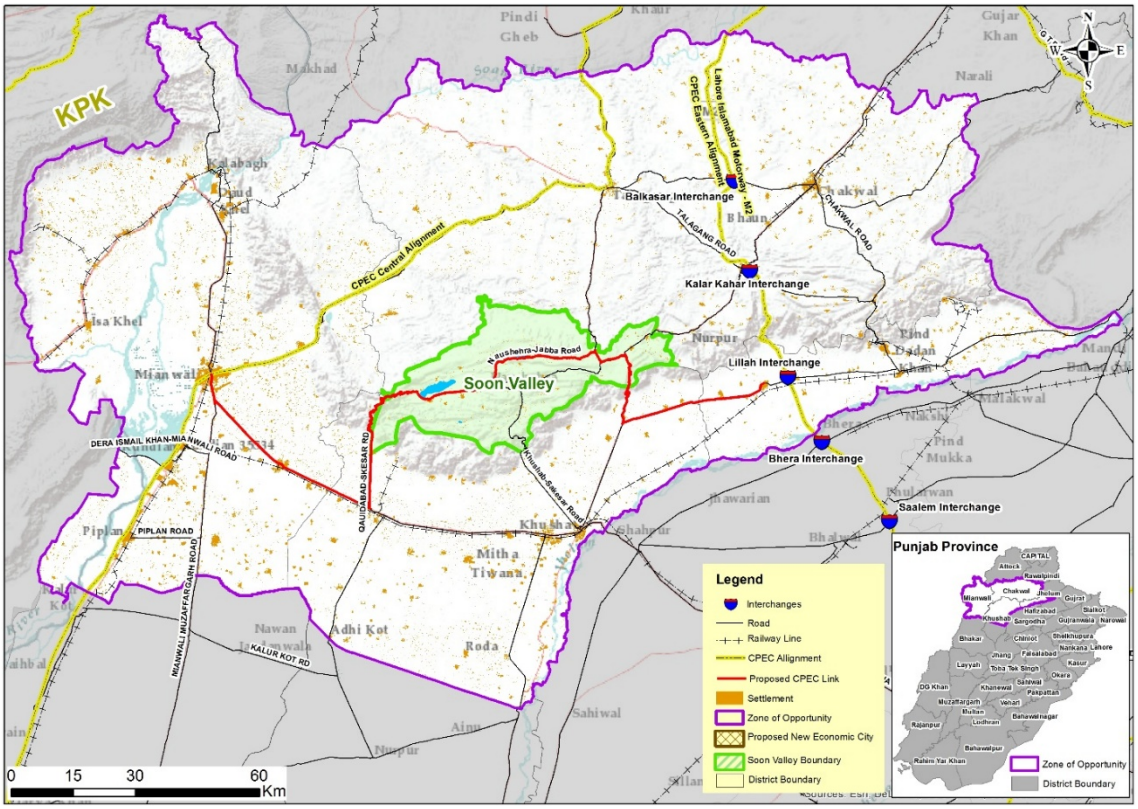


Figure 9: Soon Valley in the Context of China Pakistan Economic Corridor

- **Bus transport services is proposed to cover the following**
  - i) Rationalize bus routes.
  - ii) Reserve high-volume routes for large buses.
  - iii) Reserve low-volume routes for mini buses and small buses.
  - iv) Provide bus stops with lay-by, transit terminals and other physical improvements. Proposed location of bus stops and bus terminals is given in the map below
  - v) Replace existing bus stock with environment friendly fleet.
  - vi) Rationalize fare structure.
- **Para transit**

- *Impact of CPEC alignment near Soon Valley regarding increasing tourism in Valley*
- *Replacement of existing bus stock with environment friendly buses to conserve the beauty of Valley*

administrative functions to facilitate minibus, taxi and rickshaw services and provide parking and garage facilities so that they continue to provide a valuable service to the public while reducing overall congestion. Coordination with buses at transfer points would be useful.

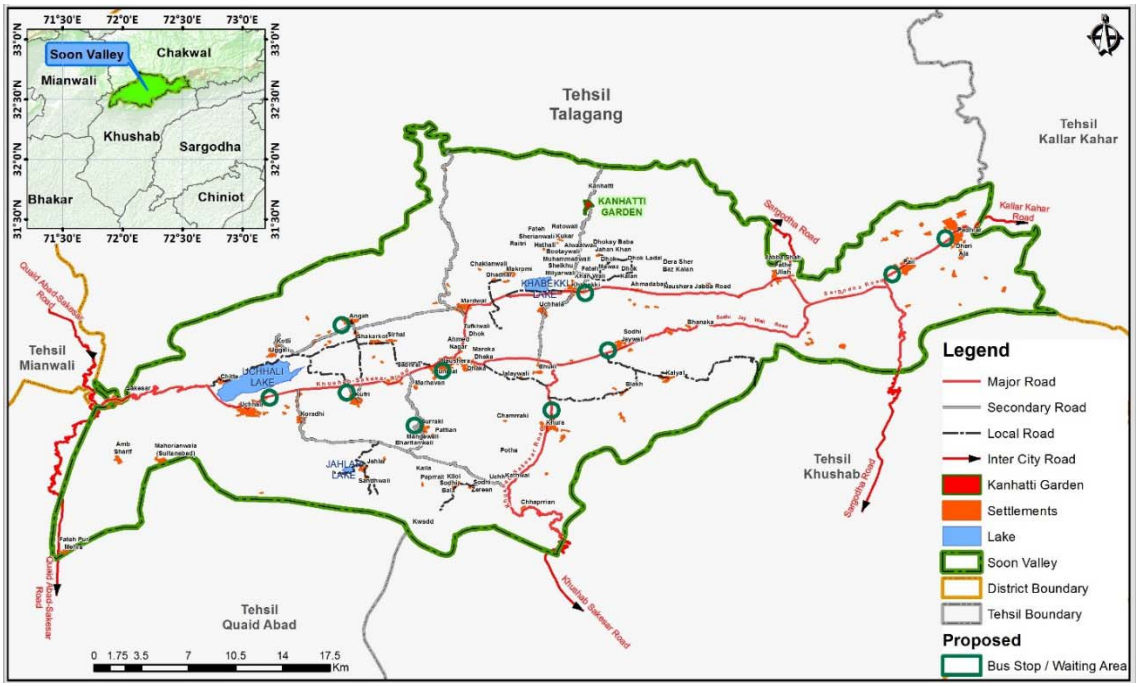
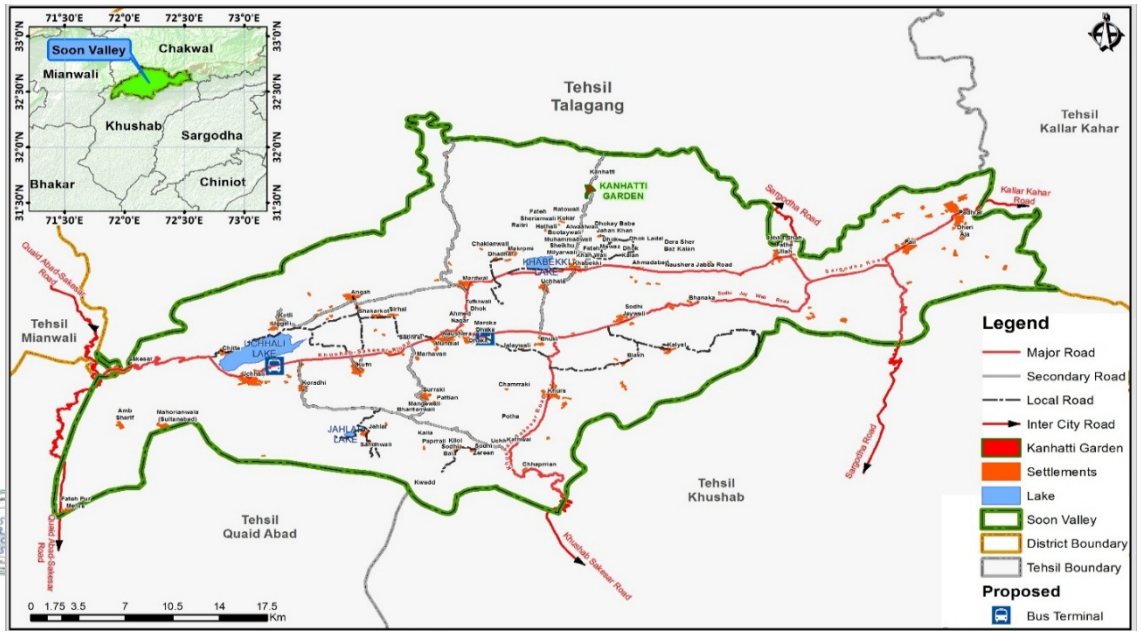


Figure 7: Proposed Location of Bus Stops Waiting Area



3.1.4 Proposals for Public Parking

With the increase in transportation, the demand for parking space is also increased but unfortunately, there is no proper parking space allocated along major roads and at important public sites due to which traffic congestion are experienced. Parking facilities in Soon Valley were also absent along all lakes like Uchhali and Khabekki Lake and also at public sites and commercial centers. In the above context following steps would be necessary:

- All existing areas of business / commercial activities, where the absence of adequate parking and congestion is visible, should be identified and listed, and based on studies of vehicle volumes specific projects for multi-level parking, using the latest available technologies should be formulated and implemented in a time-bound manner.
- Major corridors along which commercial activity has grown over the years by way of mixed land use with / without authorization should be identified and taken up for redevelopment with a major objective being the identification and development of open areas for parking, green development and pedestrianization.
- The development of multi-level parking facilities may be taken up, wherever, feasible in a public-private partnership framework, with private sector investment and involvement, for which incentives may be provided by way of land use and FAR etc.
- The use of basement wherever necessary is to be provided for parking, and must be strictly adhered to.
- Stringent provisions by way of fine and other penal actions need to be provided for violation of parking rules.
- A graded parking fee structure should be evolved as a measure of parking demand management, and encouraging use of public transport.
- Serious consideration should be given to evolve a policy addressing registration of new vehicles to the availability

- *Identification of new locations for bus stops/ waiting areas in whole Valley*
- *Proposals for bus terminal in Uchhali & Naushera etc*

- *Proposals for parking Sites near Uchhali Lake, Khabbeki Lake & Kanhatti Garden*
- *Potential to increase commercial activities along major corridors by redevelopment of that area*

of owner parking facilities.

- All encroachments on land designated for public parking should be removed.
- Wherever feasible, space on roofs, under stilts and basements should be brought to use to reserve maximum area for parking.
- New parking stand and parking plazas should be built at important tourist sites and at commercial activity sites like Bazars etc.

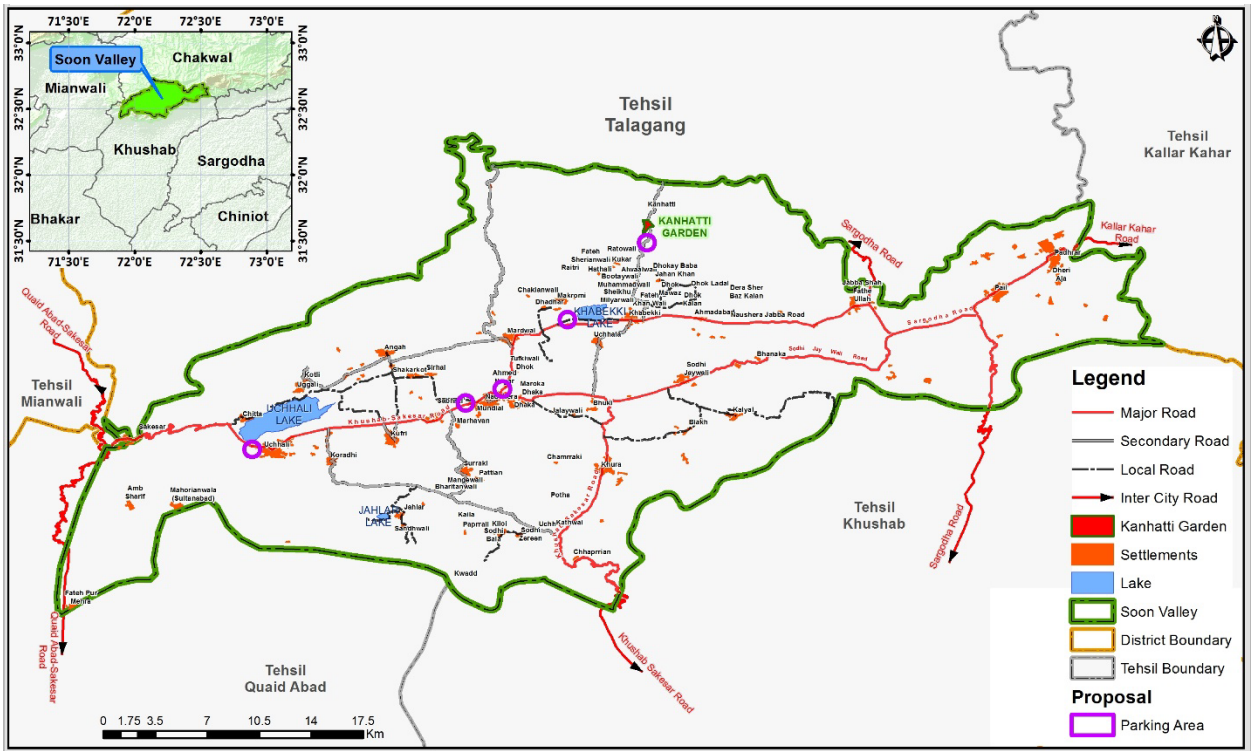


Figure 10: Proposed Parking Locations

CHAPTER 4

Economy & Livelihood



Chapter 4: Economy and Livelihood

4.1.Rationale

- *Having a high potential for tourism, the Soon Valley can offer diversified opportunities of livelihood, especially for the local community.*
- *The dominant source of income within the Soon Valley is agriculture*

- Economy and livelihood are the two development terms, which go simultaneously; harnessing good livelihood is a means of thriving economy. The prospects of livelihood are located in the economy, political and social structures and efficient planning plays a lead role in ascertaining this. Different sectors provide different opportunities for income generation and uplifting the economy.
- Tourism is one big industry that holds immense significance in terms of this subject. Having a high potential for tourism, the Soon Valley can offer diversified opportunities of livelihood, especially for the local community. Assessing the current human, natural, financial and physical capital of the region reveals that there is a need to diversify livelihood opportunities for the people for a rising economy.
- In the light of the Soon Valley Eco-Tourism Master Plan 2040, the idea is to ascertain the livelihood enhancement opportunities, which will be brought in the wake of the Eco-Tourism Development of the area. Tourism contribution to livelihood can be enhanced by adjusting decisions on what is developed and how in ways that reflect peoples' livelihood priorities. Thus, the provision of sustained livelihood opportunities must be formulated in a manner that reflect the needs of the local community.
- It has been studied that the dominant source of income within the Soon Valley is agriculture. The percentage of those employed in the commercial and industrial sector is less as compared to agriculture sector. Thus, there is a need for offering a multiplicity of activities for the people focusing the tourism sector in particular. In view of this, the Soon Valley Eco-Tourism Master Plan aims at providing improved livelihood on the basis of a proposed Sustainable Livelihood Framework for a sustained local

economy.

- This framework proposes strategies in the light of the existing situation that has been assessed with respect to increasing the living condition of the people. Moreover, the framework also ensures that planning process (both government and private) are participatory and responsive to the local needs.
- Before we look through the comprehensive structuring basis of this livelihood framework, it is important to have in mind the existing livelihood analysis, which has been summarized in the next section.

4.1.1. Assessing the Current Livelihood Condition

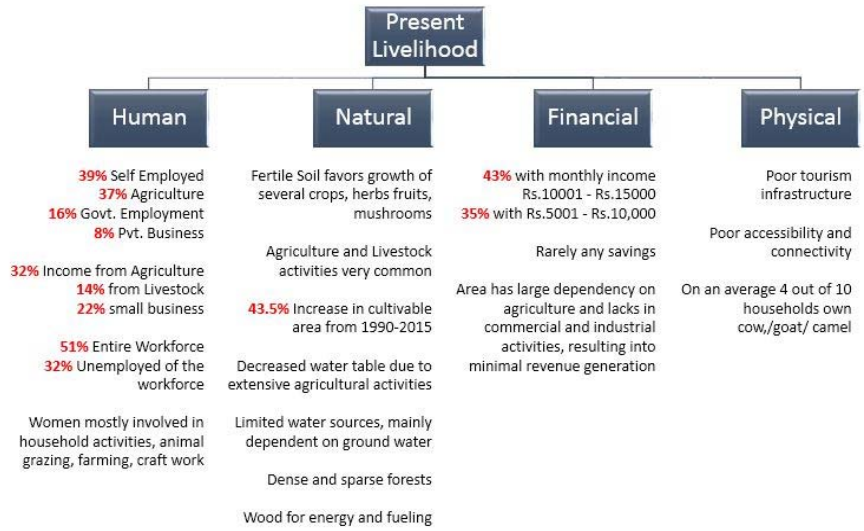
- It is important to view the current livelihood structure that has been assessed previously as part of the existing situation. This assessment has been made by evaluating the human, natural, physical and financial capital that highlights the available resources and on-going livelihood practices.
- The analysis revealed that because of fertile soil the dominant type of activity is agriculture, however a significant number of people are also found self-employed. These are either in one way or the other associated with the agricultural activities. An increase of 43.5% in cultivable area is observed from the year 1990-2015 that clearly depicts to what extent agricultural practices are taken up in the Soon Valley. Moreover, many are found having animals and depend on livestock as a means of their livelihood. The entire workforce constitutes 51% of the population, and the average monthly income ranges from Rs. 10,000 to Rs. 15,000. This amount is such that does not fully cater the needs of the people, and there is a need to diversify opportunities which would add up to the peoples' improved living.

An increase of 43.5% in cultivable area is observed from the year 1990-2015 that clearly depicts to what extent agricultural practices are taken up in the Soon Valley.

The entire workforce constitutes 51% of the population, and the average monthly income ranges from Rs. 10,000 to Rs. 15,000.

The following figure summarizes the aforementioned analysis details.

Figure 11: Existing Livelihood Analysis



4.1.2.Key Challenges

- Majority (39%) of the people are self-employed while another major chunk i.e. 37% are associated with agricultural & livestock activities. In-addition, 16% and 8% of the respondents are involved in government employment and private business respectively.
- Majority of their income is coming from agriculture sector while 32% of income is associated with other activities including daily wages/laboring. Livestock and small business support 14% and 22% of the residents' income respectively.
- It is interesting to see that the younger age group (18-45) is 40%, while middle age population (45-60) shares 11% of the population. These two groups combined to constitute the entire workforce of the valley at 51% while 49% of the total population is dependent on the breadwinner. Among these, 32% of the workforce is unemployed that reveals that the labor force is readily available.
- The households having a monthly income ranging from

Rs. 10,001 to Rs. 15,000 account 43% of total population. While, 20% of the households have monthly income ranging from Rs. 5,001 to Rs. 10,000. The least income i.e. less than Rs. 5000 is earned by almost 15% of the population. 9% have income between Rs. 15,001 to Rs. 20,000, only 4% earn between Rs. 20,000 to Rs. 25000 while 9% are those earning greater than this. Thus, it reveals that the majority of the households do not have sufficient resources and are only able to meet their daily needs.

- The area lacks industrial and commercial activities. Thus, there is a huge dependency on agriculture, which yields less revenue to the people. As a result, the economic condition of the overall valley is not so strong.
- The land cover change analysis reveals that the agricultural area has increased from 176 sq.km in 1990 to 253 sq.km in 2015. Such phenomenon is posing serious threats to the environmental quality of the region i.e. extensive water use due to the emerging agricultural activities have resulted in the decline of the water table by 20-70 meter since 2005.
- Water resources are very limited as people are mainly dependent on ground water supply via municipal water tanks, personal water borings, hand pumps and streams.



Unemployment

Industrial and Commercial prospects

Agricultural Degradation & Deforestation

Economic Disparity

- As a result of the decline in water quality from the municipal water supply, the emerging trend in usage of personal boring water is observed which have further reduced the water table drastically.
- Soon Valley is enriched with dense and sparse forests which provide a soothing environment to the region. The lack of availability of energy or fueling sources has resulted in deforestation i.e. wood is primarily used for the fueling purposes, thus posing serious threats to the region.
- The major chunk of the population is associated with the daily waging (laborers) and commute to nearby towns and cities (Naushera, Khushab, Jauhrabad, Pail, etc.) to carry out such purposes. However, due to poor infrastructure, especially the quality of network and availability of public transport, the commuters face serious mobility issues. Ultimately, this poor connectivity is directly affecting their employment and livelihood activities.
- As livestock activities produce income for 14% of the total population, so they hold assets such as cow, goat, camel, etc. It is observed that on the average, 4 out of 10 households carry out these assets. Ultimately, the overgrazing reduces plant leaf areas, which reduces interception of sunlight and plant growth.

Soon Valley is enriched with dense and sparse forests which provide a soothing environment to the region.

The major chunk of the population is associated with the daily waging (laborers) and commute to nearby towns and cities (Naushera, Khushab, Jauhrabad, Pail, etc.) to carry out such

4.1.3.Sustainable Livelihood Framework

- In the light of the existing analysis, a Sustainable Livelihood Framework has been proposed that follows a holistic approach of providing sustainable livelihood opportunities for the local community in the wake of the Tourism development. The framework encompasses the following key objective:

  "Enhancing the livelihood impacts of tourism does not mean simply maximizing the number of tourism developments, or maximizing wage income but having a good understanding

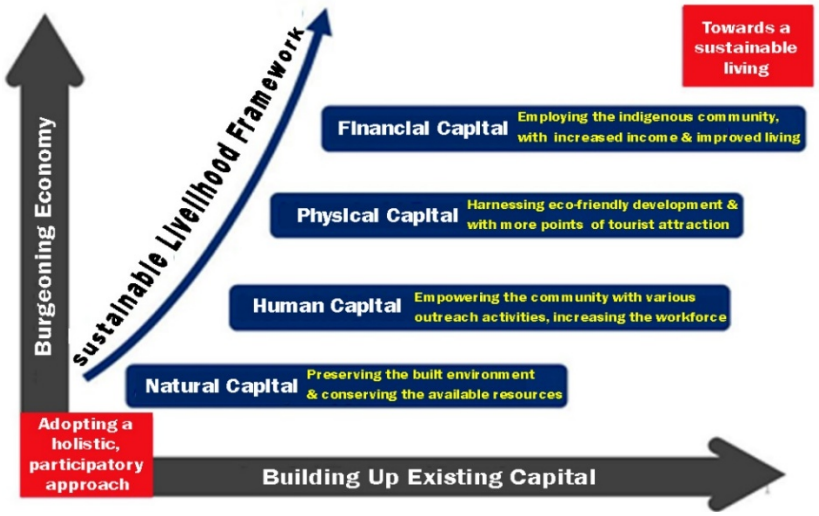
of

what people most need and want; by careful planning and design, making best use of the existing capital"

- The framework has been devised in view of the existing capital resources and aims at developing these by providing sustainable livelihood opportunities for the people. The following up of such a framework will not only bring up more income for the families but also enhanced local economy and quality living.
- The following diagram shows the proposed Sustainable Livelihood Framework, ascertaining more developed capital for a burgeoning economy. Figure 2 Sustainable Livelihood Framework

The framework encompasses the following key objective:

- *"Enhancing the livelihood impacts of tourism does not mean simply maximizing the number of tourism developments, or maximizing wage income but having a good understanding of what people most need and want; by careful planning and design, making best use of the existing capital"*



- The framework depicts that there is a need first to conserve the natural capital that also comprise of the available resources. Doing that needs more human capital which is built up by education and empowering the locals. Increasing the human capital would help add up to the existing workforce catering towards improved livelihood. This human capital is thus involved in multiple tourism development activities which favor a multiplicity of job and income generating opportunities for the local community. Creating diversity in physical capital uplifts

the financial capital, employing more and more from the indigenous community, boosting up the overall economy.

- Thus, the Sustainable Livelihood Framework is an effective means of adopting a holistic approach when it comes to improving the livelihood and local economy of the Soon Valley in the long run.

4.1.4.Key Approach

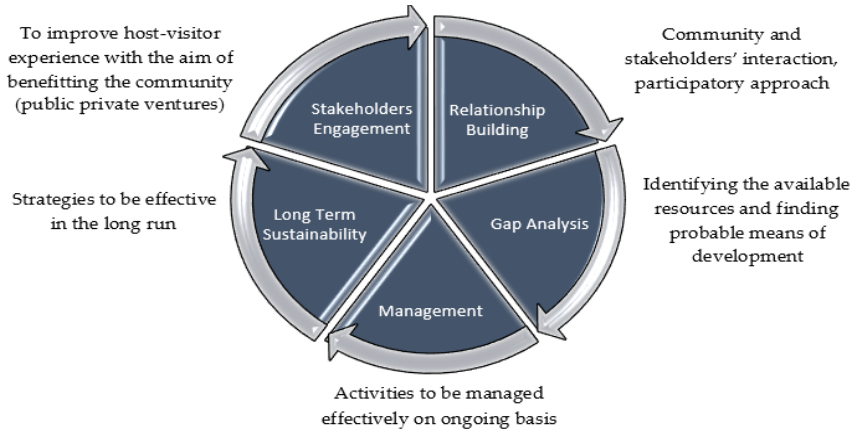
Key Approach: Harnessing Participation for Sustained Development

- *Relationship Building*
- *Gap Analysis*
- *Management*
- *Long Term Sustainability*
- *Stakeholders Engagement*

The effective implementation of the proposed Sustainable Livelihood Framework asks for adopting a strengthened approach via which it can be well taken up. There is a need to have a strong participatory approach bringing all the key stakeholders on board for bringing consistency and productivity in the framework's implementation. The approach is devised in a manner that aims at identifying the income generating eco-tourism related activities in the area, seeing the potential in available resources as a means of ascertaining more local benefits. Moreover, bringing more community participation with involvement from the female workforce and empowering them.

- The following diagram gives an over view of the approach that is to be followed when implementing the Sustainable Livelihood Framework.

Figure 3: Key Approach: Harnessing Participation for Sustained Development



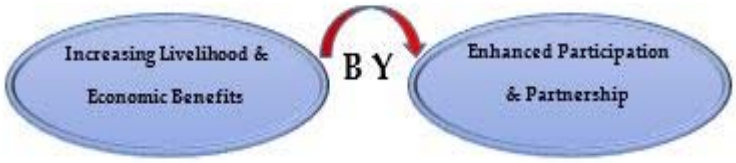
- Thus, the approach adopted brings forth the concerned

- stakeholders for improving the host-visitor experience and promoting public-private ventures. Also,the relationship building is important for harnessing a participatory approach that involves community and development is thus catered as per the needs of the people. Besides, it is also important to identify the gaps and deficiencies, which prevail in examining the potential of the area, with managing all proposed activities in a manner, which provide long-term livelihood sustainability.

4.1.5.Capital Building

In view of the assessed existing capital, the proposed livelihood framework and key approach, the main idea is to build the area's capital by strategizing ways that improves the livelihood and economy in the Soon Valley. The broader idea encompasses the following two fundamentals, considering which the natural, human, physical and financial capital has been proposed to be built:

Figure 12: Fundamental Aspects: Basis to the Proposed Framework



The aspects constituting the above two fundamentals are given in the table below. Seeing this the capital building has been proposed.

Table 2: Key Strategic Aspects

Increasing Livelihood Economic Benefits	Enhancing Participation & Partnership

Expand local employment, wages, commitment to local jobs, and training of local people *Expand local enterprise opportunities including those that provide services to tourism operations (food suppliers, etc.) and those that sell to tourists (craft producers, guides, etc.)* *Develop tourism facilities and services which offer people with employment (e.g.: guides, hotel management services etc.), mitigating detrimental environmental practices* *Capacity building and training*	*Create a more supportive policy/planning framework that enables participation by the poor* *Increase participation of the locals in decision-making by government and the private sector* *Build pro-poor partnerships with the private sector* *Increase flow of information and communication between stakeholders to lay the foundation for future dialogue*

4.1.6. Building the Existing Capital

Considering the aforementioned key fundamentals, sustainable livelihood framework there is a need to devise

fruitful means which can play an integral role in uplifting the status of community's living. A number of tourism development options play an integral role in harnessing the proposed approach. Good strategic options that focus on developing the existing capital for the area are needed to be adopted for an enhanced living and improved economy. The capital building has been proposed in the four areas which have been assessed as part of the existing livelihood condition i.e. Natural, Human, Physical and Financial. All these have been explained in sections ahead.

4.1.7.Natural Capital

Preserving the natural environment and conserving the available resources is very much needed by the area. Soon Valley is known for its scenic beauty and attractive places which divert a number of tourist to the area. However, because of poor management and monitoring, the built environment is being adversely effected by detrimental practices both by the locals and visitors. The cause of all this in one way or the other can be attributed to the poor livelihood status of the people who are then bound to depend on such sources. Excessive wood cutting as a means of earning a livelihood is one most prominent effect of this aspect. Thus, there is a need to build up this by making management bodies, devising rules that would not only help in looking after these but would also cater in employing the local community. Following are few of the proposed means of developing the natural capital:

- *Soon Valley is known for its scenic beauty and attractive places which divert a number of tourist to the area.*
- *There is a need to doing Ecological zoning for wetlands, which provides for strict conservation areas, ecological restoration areas, and areas for and passive recreation, hiring locals for the designated purpose*

a. Ecological zoning for wetlands, which provides for strict conservation areas, ecological restoration areas, and areas for and passive recreation, hiring locals for the designated purpose
b. Special monitoring set-up that protects & conserves from the harmful activities of human harnessing more workforce aiding to the existing livelihood
c. Protecting the tourism sites from excessive impacts from

tourism, the regulations should be formulated that can set a limit of certain visitors per day – this should be based on a carrying capacity assessment on a particular site. This also aims at involving more people from the local community who would get deployed and earn a living under such a tasks

4.1.8. Human Capital

Human Capital plays an incumbent role in the progress of any area. Adequate human capital and workforce help improve livelihood and lead towards a flourished economy. Seeing the existing workforce dynamics of the Soon Valley, it is known that 51% that comprises the overall workforce lacks exposure and information for stepping into a multiple range of income generating activities. Women ability to work is also at a decline, and there are less earning opportunities for the people that result in a poor living condition. The development of physical capital is also based on human capital, as with no limited workforce, it becomes difficult to take up development practices. Seeing this, the foremost factor that plays a key role in developing this capital is education. Providing the locals with adequate information and imparting knowledge regarding different work opportunities is essential for providing them with improved livelihood and economy. Keeping in view tourism the push factor, it is necessary to impart them with skills that are needed for flourishing the tourism industry. Henceforth, the following proposals have been devised for developing human capital in the area:

a. Holding of bi-monthly community workshops which strengthen abilities of the locals and equip them with additional ones
b. Raising awareness campaigns every month which inculcates in the minds of the locals the need for an improved living
c. Educating the community by providing high schooling and imparting the skills of tourism management and related tasks

- *Human Capital plays an incumbent role in the progress of any area.*
- *Adequate human capital and workforce help improve livelihood and lead towards a flourished economy.*
- *Educating the community by providing high schooling and imparting the skills of tourism management and related tasks*

d. Outreach Activities for the Locals which are not accessible to the community. These include media sourcing etc.

e. Organizing Tailor Made Trainings for every three months in which training courses are given to the local community which caters the needs of every client/tourist. This could include documentaries, case studies practical working

f. Empowering the Women Craftsmanship is also important. By acknowledging the skills they have and making room for their development is needed for increased livelihood. Setting up of small scale industries where women could work and learn together the craftsmanship they possess

4.1.9. Physical Capital

- *Physical capital is what should be developed in a sustainable manner*
- *There is need to Establishing more accessible Visitor Service Centers which would employ locals providing information to the visitors*

Physical capital is what should be developed in a sustainable manner. Presently, poor tourist infrastructure prevails in the Soon Valley that results into inadequate opportunities of livelihood for the people. There is a need to build this physical capital to offer a multiplicity of job opportunities to the local people for furnishing a good economy. It is necessary that any kind of tourism development that is being carried out is as per the needs of the people and that which does not degrade the environment. Following are few of the key proposals formulated which focus on developing the physical capital in the Soon Valley:

a. Establishing more accessible Visitor Service Centers which would employ locals providing information to the visitors

b. Setting up Eco-Stores having souvenirs, brochures and other related items on purchase giving information about the area, important tourist sites and local species

c. Extensive signage and interpretation for the tourist sites are also likely to generate income with the deployment

of key staff for guiding the tourists

d. Provision of Tourist Service Providers and

Accommodation Services for the visitors would result into deploying of more of the local people as service managers and pertinent facilities

e. Presently, there is no concept of Travel Agents & Online Booking in the context of Soon Valley. Building up such a service for the area would generate more employment for the locals and ease for the visitors, and ultimately lifting up the economy

f. Proper zonation to protect the native wildlife and fragile habitats should be practiced and for which again local hiring is to be done for increased income and overall economy

g. A Management Plan having Guidelines for the Visitors is to be prepared to hire individuals for assistance and proper check

h. Developing local restaurants & cafes near wetlands selling produce,

i. Communication, snack items, etc. The sale would also include the agriculture and livestock produce by the local community.

Presently, there is no concept of Travel Agents & Online Booking in the context of Soon Valley

Proper zonation to protect the native wildlife and fragile habitats should be practiced and for which again local hiring is to be done for increased income and overall economy

Developing local restaurants & cafes near wetlands selling produce,

4.1.10. Financial Capital

Building up natural, human and physical capital all ultimately lead towards developing the financial capital in the area that results into improved livelihood and economy in the Soon Valley. A number of income generating opportunities are to be provided to the local people for increasing their monthly income and generating more revenue. With more finances, a good living style is assured leading towards a sustained environment. Following are the key proposal for developing financial capital in the Soon Valley:

- Local Tour Operators & Trained Guides are needed to be hired for seasonal and off seasonal tourism services
- TDCP to initiate an Ecological Bus, offering Low Priced Guided Tours could be made operational in the area for not only generating employment but raised finances for the people

- *Local Tour Operators & Trained Guides are needed to be hired for seasonal and off seasonal tourism services*
- *Wetland & Environmental Management Authorities should be established which hire Locals for effective and regular monitoring*
- *Waste Management Body to be established that again hires local staff members responsible for keeping the area and environment clean*

- Organizing Open Days for Local People to Sell Agriculture & other Produce. Women can also take part selling their handicrafts and home-made items that would generate more income
- Wetland & Environmental Management Authorities should be established which hire Locals for effective and regular monitoring
- Hiring Local Security Rangers for wetland management and at places where tourist inflow is expected
- Provision of leisure activities e.g. birds watching staff at the wetland, trekking and boating at lakes to be looked after by the employed local community
- Waste Management Body to be established that again hires local staff members responsible for keeping the area and environment clean

4.1.11. Conclusion

Tourism being one of the most rapidly growing industries in the world has a great impact on the overall economy and livelihood generation of the area. In the case of Soon Valley that has great tourism potential, the development taken up in this context can offer multiple means of generating employment for the indigenous community. The need of the hour is to adopt the proposed Sustainable Livelihood Framework in the wake of a holistic approach that brings forth the participation from different stakeholders and participation of the community. At the same time to keep devised proposals in working, consistent efforts are required by the authorities for revitalizing the not only the tourism industry but livelihood of the people in the long run.

CHAPTER 5

Environmental Management Planning



5.1. Environmental Management Planning

Long-term sustainable growth of the tourism cannot be achieved without proper management of natural resources. Tourism, if carefully managed, can become a tool for environmental protection and for financing conservation. The long-term financial sustainability of protected areas would be ensured by a combination of income from ecotourism with the revenue from capital investment. Policies that discriminate tourism development (e.g. visa regime, air transport monopoly) would also affect the program negatively because ecotourism is a major potential source of income from protected areas. This creates incentives for the local people to protect both the habitat and the wildlife and can create a disincentive for deforestation.

- *The long-term financial sustainability of protected areas would be ensured by a combination of income from ecotourism with the revenue from capital investment.*
- *The economic viability and competitiveness of this local tourism industry can only be sustained if the quality of these resources is restored and maintained.*

Soon Valley's natural environment is recognized as a very special and unique asset. The future of the tourism in this Valley is inextricably linked with the quality of its inherent environment which includes; scenic landscape, forests, biodiversity and historical heritage. Such environmental characteristics can serve as a bedrock upon which local tourism can be built and promoted. The economic viability and competitiveness of this local tourism industry can only be sustained if the quality of these resources is restored and maintained.

As a common property resource, the environment is vulnerable to damage and exploitation because people can benefit from it without any sense of payment to any other owner (tragedy of commons principle). This misuse and overexploitation of resources result in conflicts and environmental disasters which have to be avoided and resolved through a variety of policy interventions including laws, regulations, agreements, charges, and right allocation and other such measures. Even though the tourist volume in this Valley is not so inspiring at the moment, but the future tourism interventions are likely to attract tourist from different parts of the country. Ultimately, the increased

demand for its

use by recreational activities would create capacity and quality issues. Hence, Soon Valley's tourism potential and its survival rely on strong and appropriate environmental urban policies.

5.1.1. Key Findings

- The pH of Uchhali and Khabekki lake water samples lie between 8.7-9.7 and 8.75-9.1 respectively. It reveals that pH is not as high that it becomes lethal to aquatic/water biodiversity. That's why both lakes support few fish species like Talabia, Sundali, Rahu, etc.
- The obtained results of TDS values of the surface water of lakes are high as compared to PAK-EPA permissible limits (i.e. 3500mg/L for TDS and 200mg/L for TSS).
- The obtained results of BOD and COD are also high as compared to NEQs permissible limits (i.e. 80mg/l for BOD and 150mg/l for COD) due to the presence of high algal growth.
- The salts such as; Calcium, Magnesium, Potassium, Sodium, Sulphates, Carbonates, Bicarbonates and Chlorides are present in high concentration in the Lakes. It is primarily due to fertile soil erosion, agricultural runoff, the geological basin of the area, dilutions due to precipitation.
- The majority of selected project sites are free from noise pollution, and the measured parameters are in permissible limits of Pak-NEQs.
- The physicochemical parameters (i.e. CO, NO, NO2, SOx, H2S, PM) measured at project sites are in permissible limits of WHO and Pak-NEQs, and the air quality of the villages and the adjacent sides of lakes were observed healthy.
- Similarly, soil analysis carried out at eight different sites within the project area reveals that the physicochemical parameters (i.e. pH, Texture, Organic matter, saturation, potassium, phosphorous, CaCO3, Sodium, Ca + Mg, Electrical conductivity) are in permissible limits of WHO and Pak-NEQs.

- *The pH of Uchhali and Khabekki lake water samples lie between 8.7-9.7 and 8.75-9.1 respectively.*
- *TDS values of the surface water of lakes are high as compared to PAK-EPA permissible limits*
- *Salt concentration is high in lakes*
- *The majority of selected project sites are free from noise pollution*

-

Environmental sensitivity analysis reveals that there are five protected areas within the project area i.e. four Wildlife Sanctuaries and one Game Reserve. In total, there are three lakes and 44 water ponds in the entire Soon Valley.

- The wildlife sanctuaries, Uchhali and Khabekki Lakes provide a core habitat to several endemic species such as Punjab Urial.
- The spatio-temporal analysis carried out for Jahlar, Khabekki and Uchhali Lakes reveals that the size of lakes has experienced huge variations during the year 1971 to 2015 i.e. areas of all these lakes decreased to an alarming point in the year 2005 but afterwards increased to a comparative size up to the year 2015. This primarily owes to less precipitation due to global climate change phenomenon.
- Deforestation is a common phenomenon observed within this area. There are many factors including illegal wood cutting for the tobacco companies, fuel source, etc., contributing to large-scale deforestation.
- The primary cause of forest destruction is the frequent forest fires. In the summer of 1994, there were 27 incidents of forest fires in just 45 days. Most of the fires were deliberately ignited by the local herdsmen to produce more fodder for the cattle and sheep of the local people after the rains. Normally such fires are self-extinguished, after a day or two. Kao tree contains an oily substance, which is highly inflammable. Hence, it burns like a torch and is reduced to ashes in a matter of minutes. In this respect, the Kao tree is unlike other same altitude trees as in them the fire only destroys the dead cells forming the bark, and the living cells remain unscathed.
- Wood cutting for fuel is a dilemma of developing countries. Poverty stricken people are dependent on forest for their livelihood and fuel/energy requirements. Each day wood weighing tons, is collected from the forest

- *The wildlife sanctuaries, provide a core habitat to several endemic species such as Punjab Urial.*
- *Deforestation is a common phenomenon in the Valley*
- *The primary cause of forest destruction is the frequent forest fires*

area of the Valley.

- Cutting of Kao branches for making walking sticks. Kao branches are quite in demand in the local markets. These branches are treated and finished into fancy walking sticks, which are sold in big cities.
- The most important factor that causes deforestation is excessive illegal logging, trade and extensive agricultural activities by clearing the private forest lands.
- Changes in forest cover are often the result of anthropogenic pressure (e.g. population growth) and natural factors such as variability in climate. Forests are regarded as a national treasure in Soon Valley and in addition to timber; these forests provide such resources as grazing land for animals, wildlife habitat, water resources, tourism and outdoor recreation areas. They are also important for preserving biodiversity, as they provide a habitat for certain specialized forest-related species.
- The untreated mixing of liquid waste with the lake (especially at Khabbeki & Uchhali Lake) water is destroying the environmental beauty of these Lakes.
- Lack of effective policies and inadequate management; weak law enforcement; lack of field equipment and technical skills of the relevant authorities & field staff, further deteriorates the environment.
- Shortage of comprehensive and scientific studies and literature about various aspects of the environment and resources of this area.
- The management authorities such as Punjab Wildlife Department lacks financial resources to manage the protected sites in the project area
- Pollution due to organic and inorganic pollutants and unsustainable use of wetlands, e.g. extraction of more water than their refilling capacity.
- Discharge of untreated domestic effluents and solid waste into fields and open areas

5.1.2. Environmental Challenges

- *Excessive illegal logging, trade and extensive agricultural activities are the main causes of deforestation*
- *The untreated mixing of liquid waste water is destroying the environmental beauty of the Lakes*
- *The management authorities lacks financial resources to manage the protected sites in the project area*
- *Untreated domestic effluents and solid waste are discharge into fields and open areas*

The unregulated and unprecedented rate of development and growth over the past few years has brought many benefits to the local economy, especially within the Naushera Town. However, this tourism magnification is proximately linked with environmental degradation, often resulting into many negative impacts on the quality of tourism potential of the area. The main environmental challenges which need to be addressed to ascertain perpetuated benefits to tourism in Soon Valley include:

- Wetland loss and degradation
- Lack of effective policies and inadequate management
- Weak law enforcement
- Lack of field equipment and technical skills of the relevant authorities & field staff
- Shortage of comprehensive and scientific studies and literature about various aspects of the environment and resources of this area
- The management authorities such as Punjab Wildlife Department lacks financial resources to manage the touristic sites in the project area
- Pollution due to organic and inorganic pollutants and unsustainable use of wetlands, e.g. extraction of more water than their refilling capacity.
- Off-site activities causing physical and chemical changes in wetlands
- Discharge of untreated domestic effluents and solid waste into fields and open areas
- Deforestation and biodiversity loss.

The main environmental challenges which need to be addressed to ascertain perpetuated benefits to tourism in Soon Valley include:

- *Wetland loss and degradation*
- *Lack of effective policies and inadequate management*
- *Weak law enforcement*
- *Off-site activities causing physical and chemical changes in wetlands*
- *Deforestation and biodiversity loss*

5.1.3. Solid Waste Management

At present, one of the most significant environmental issues within the Soon Valley is improper waste management. Most inhabited settlements currently do not have proper waste management systems which ultimately affect the

environment. Waste is usually dumped openly and it is floated out during rain and overflowed drainage. These materials often end up while mixing with the lakes. They may also undertake open burning to dispose of the waste and the effects of the smoke, in some cases, can be felt in neighboring settlements of lakes. The current waste management challenges are generally attributed to the lack of established local municipal services, the limited capacity of municipal staff and lack of awareness and finance. This has also led to significant aesthetic issues and to physical loss of marine life in lakes and other water bodies. The lack of sewage and solid waste disposal in the communities is a cause of strong environmental damage, as a result of which social conditions are likely to deteriorate sharply.

5.1.3.1 Policy Recommendations

Achieving 'perfect' solid waste management is a challenging goal, and it involves the collection, storage, transportation, processing, treatment, recycling and final disposal of waste. The strategy should be simple, affordable, sustainable, (financially, environmentally and socially) and should be equitable, providing collection service to poor as well as wealthy households. SWM should aim to improve the environment, provide direct health benefits, support economic productivity, and provide safe, dignified and secure employment. The major policy recommendations include

- Continued review of the requirements and options for the provision of new infrastructure for the community and local business with the ability to:
    a. Maximize recycling and minimize waste
    b. Dispose of hazardous materials appropriately
    c. Provide waste and recycling services
    d. Recycle e-waste and other bulk materials that become a potential problem for the environment.
- Restricting open dumping of domestic and commercial waste and provision of adequate facilities (bins, biodegradable plastic bags) for temporary storage of waste

Major policy recommendations are

- *Maximize the recycling of container glass and continue to source new markets for recycled container glass*
- *Establishment of bulk storage depots for temporary storage of waste*
- *Development of a proper facility for treatment and disposal of waste*

Maximize the recycling of container glass and continue to source new markets for recycled container glass.

- Gradual segregation of recyclable and non-recyclable waste at source
- Use of standard methods for storage and disposal of hospital/clinical waste
- Placement of litter bins at public places and along roads to curb public littering
- Introduction of appropriate system of waste collection ensuring collection of waste from doorstep and community bins on regular basis
- Increase the recovery rate of the bulk hard waste collection.
- Synchronization of waste collection system with storage/segregation system
- Improving current sweeping of roads/commercial areas by providing extra-manpower, improving management and mechanical sweeping
- Establishment of bulk storage depots for temporary storage of waste collected from neighboring areas
- Pursue all means to reduce illegal dumping including improved enforcement of regulations.
- Regular transport of waste from temporary depots to disposal site
- Phased replacement of manual loading/handling of waste by mechanical handling to avoid spillage of waste
- Development of a proper facility for treatment and disposal of waste
- The gradual introduction of Three R's System of resource management (reduce, recycle, reuse), (public education and awareness campaigns should be launched to adopt three R's system of urban resource management).
- Develop systems for collecting and recycling bulk hard waste that is safer, more efficient, encourage high

recycling rates

- The introduction of a system of taxes/fines to sustain financially, waste management system and discouraging unhealthy habits such as open littering, dumping of waste, etc.
- Improving the organization of solid waste management; by induction of professionals (environmental engineers), training of workers/supervisors and purchase of new vehicles (dumpers, pickups, mechanical sweepers) within the administration of CO Unit Naushera.
- Information, education and propagation activities to create awareness and educate public about healthy civic activities through special awareness campaigns/programs, putting up hoardings and other publicity methods
- Develop guidance and internal processes for public events to offer efficient recycling and waste services.
- Engage and educate staff on waste minimization and recycling.
- Engage and educate the residents and the business community on waste minimization and recycling and why it is needed and beneficial to the community.
- Engage and educate the residents and the business community on how to correctly use the waste and recycling services available.
- Identify opportunities and develop partnerships for resource recovery in the business community.

5.1.3.2. Technological Interventions

Collection of waste

- An immediate measure to revamp the existing inefficient collection service is to provide community waste bins conveniently placed for the people to deposit waste especially at tourist spots such as Khabekki, Uchhali and Jahlar Lake. These waste bins should be placed on easily visible/accessible places and be painted with bright colors to attract visitors to use these bins.

- *Develop guidance and internal processes for public events to offer efficient recycling and waste services*
- *Training of staff on waste minimization and recycling*
- *Raising awareness of residents and the business community on waste minimization and recycling*
- *Resource recovery in the business community through opportunities and Partnerships*

In residential areas, two types of bins may be introduced gradually to the segregation of biodegradable and non-biodegradable waste at source.

- In vegetable/fruit market located at Naushera, the traders should be advised to keep large metallic containers with lids for the storage of waste
- All the business centers and hotels (primarily located in Naushera) may be charged according to Polluter Pays Principle for their waste collection and transport.
- Sweeping of roads and streets by human labor or mechanical sweepers should be arranged by CO Unit Naushera on daily basis

Transportation of Waste

- Improvement of waste transport facilities at CO Unit Naushera; as the current setup at TMA Khushab for transport of collected solid waste in Soon Valley is insufficient to cater to the needs of the proper solid waste transport.
- Transportation schedule of solid waste should be divided into different wards.
- Provision of at least 5-10 covered, waste transporting vehicles to CO Unit Naushera to collect waste from local containers and transport it to temporary storage within the major settlements of Soon Valley.
- With the passage of time, small motorized vehicles should be introduced for transport of waste from small and narrow streets.
- The private sector can be involved in the transport of solid waste to temporary depots.

Transportation schedule of solid waste should be divided into different wards.

The private sector can be involved in the transport of solid waste to temporary depots.

Treatment and Disposal

- At least one temporary depots/transfer stations (in Naushera for temporary storage of collected solid waste) should be designated and developed for temporary storage of waste.

At the places where temporary storage depots cannot be established, covered, metallic containers (4-5 Cubic m) may be placed at regular distances. These containers should be placed at different spots within Naushera Town, and in major villages/settlements within Soon Valley.

- Since organic materials constitute the major component of municipal waste, composting / bio-methanation may be adopted as a sustainable solid waste management option to use solid waste as a resource.

The proposed locations of these interventions are shown in the map given below.

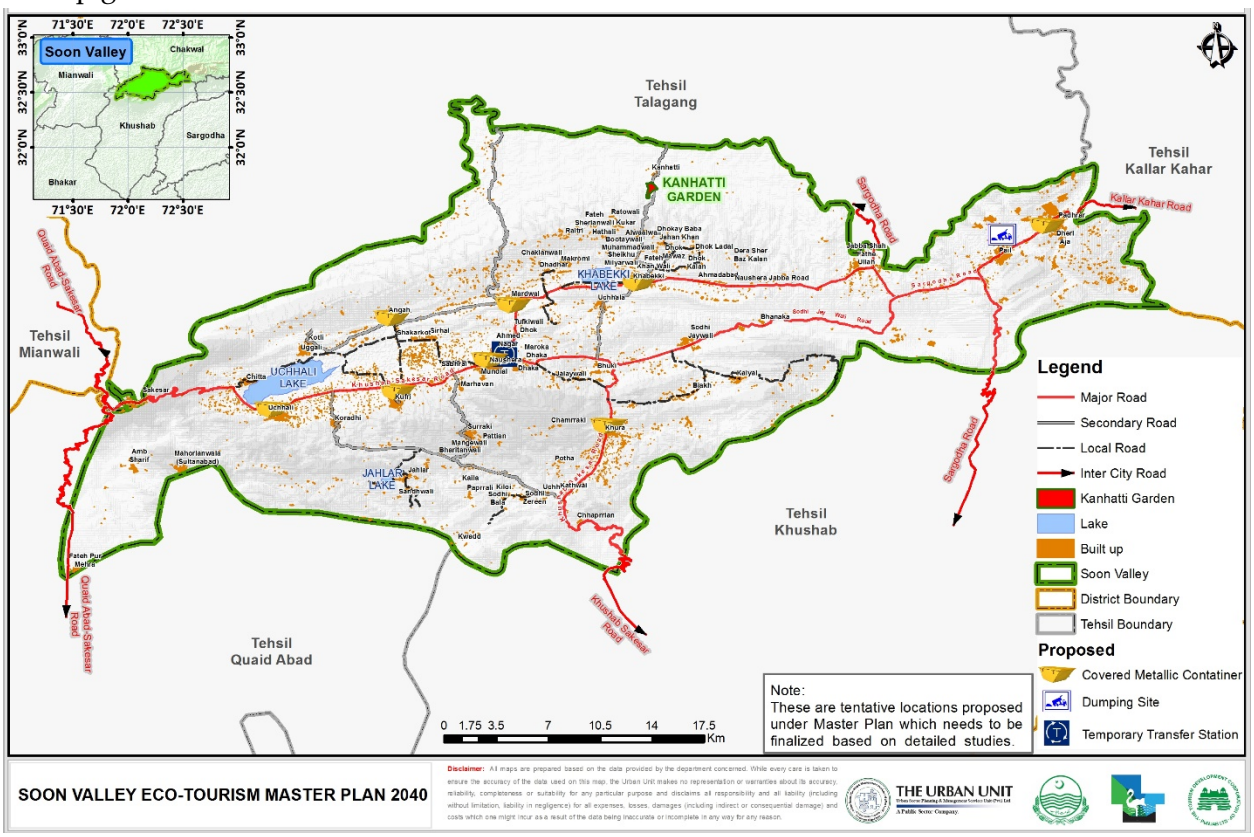


Figure 13: Proposed Locations for Interventions in Solid Waste Management of Soon Valley

5.1.3.3. Key Projects for Solid Waste Management

Short Term Projects

- *Banning of open dumping of waste in Soon Valley*
- *Purchase of pickups (with covering facilities of waste) for improving waste-collecting capacity of CO Unit Naushera*
- *Purchase of 2-3 waste collecting/transporting trucks*
- *Purchase of vehicles for supervisory staff*

Short Term Projects

- Banning of open dumping of waste in Soon Valley
- Provision of littering bins for all homes and commercial areas such as shops and offices etc.;
- Pursuing hotels/shop owners to have separate waste collecting bins/bags for recyclable (paper, glass, etc.) and non-recyclable waste;
- Purchase of pickups (with covering facilities of waste) for improving waste-collecting capacity of CO Unit Naushera
- Increase in daily sweeping of main roads, lanes, markets by recruiting extra sweepers with gradual shift to mechanical sweeping
- Provision of covered, metallic containers (4 cum3) for areas without temporary storage facilities at a regular distance along main roads.
- Purchase of 2-3 waste collecting/transporting trucks
- Purchase of vehicles for supervisory staff

Medium and Long Term Projects

- Gradual imposition of fines/administrative charges against public littering and open dumping of waste
- Purchase of a long boom drains cleaning machine for mechanical cleaning of drains.
- Imposition of waste collection fees/taxes on major uses (primarily located in Naushera) such as building contractors, hotels and homes to meet financial requirements of an appropriate solid waste management system
- Gradual introduction of 'Polluter Pays Principle' in solid waste management
- Phase-wise implementation of 5R hierarchy of waste management; Reduce, Reuse, Recycle, Recover and

- Residual management.
- Launching of a community involvement/awareness plans to increase efficiency of solid waste management programs,
- Installation of an Integrated Waste Processing Plant near Expressway. It may convert solid waste into compost, eco bricks and green pellets,
- Identification and development of a Landfill site for non-processed waste,
- Disposal of hospital waste in a scientific manner
- Involvement of private sector in solid waste management plans to decrease financial burden on government
- Establishment of a solid waste management monitoring/research cell.

5.1.4. Water Resource Management

The lack of a comprehensive water management system in Soon Valley is another major concern for the residents which has caused many adverse impacts. The area lacks a proper legal framework for regulating withdrawal of water from the ground and its ultimate disposal. The Valley experiences a lack of efficient use of water resources and frequent incidents of water shortage. Due to improper mixing of sewage and solid waste with the municipal and ground water, its quality is deteriorating continuously. Such low-quality municipal water results into increased boring of ground water. Moreover, there is a prevalence of unrealistic and unattainable plans regarding water management resulting in improper operation and maintenance activities of water schemes. The overall goal of water resource policy is to enhance and promote all local and regional efforts towards the efficient, equitable and optimum utilization of the available water resources for regular socio-economic development on a sustainable basis. The following section discusses the policy measures that can be adopted for efficient water management.

Medium and Long Term Projects

- *Gradual imposition of fines/administrative charges against public littering and open dumping of waste*
- *Gradual introduction of 'Polluter Pays Principle' in solid waste management*
- *Launching of a community involvement/awareness plans to increase efficiency of solid waste management programs*
- *Disposal of hospital waste in a scientific manner*

5.1.4.1. Policy Recommendations

- A sustainable supply of water on an equitable basis to all residents through extension in current municipal water supply schemes provided by the Government.
- Develop and adopt a 'water use' Local Planning Policy for groundwater to guide the land development process and is applicable to any future site/s that will be vested in Valleys' management. This must be devised in a manner that defines a priority for water uses, requiring the achievement of prescribed water efficiency performance targets in water and suggesting the use of recycled water hydrozoning, ecozoning, synthetics and subsurface irrigation as appropriate.
- Conserving existing water resources through:
    a. Rainwater harvesting (Soon Valley has reasonably good potential for increasing its water supply by adopting conservation measures such as rain water harvesting.
    b. Building small reservoirs in rural areas such as Sadiqabad and Kalyal, where natural water streams are available. In these areas, small dams/reservoirs may be built to store and use stream/rain water for various purposes as shown in the map given below.
    c. Protecting aquatic habitats
    d. Reducing water runoff through reforestation by increasing tree and plant cover and maintaining the present forests can help in reducing run off, increase infiltration, and reduce soil erosion.

Conserving existing water resources through

- *Rainwater harvesting*
- *Building small reservoirs in rural areas such as Sadiqabad and Kalyal,*
- *Protecting aquatic habitats*

e.

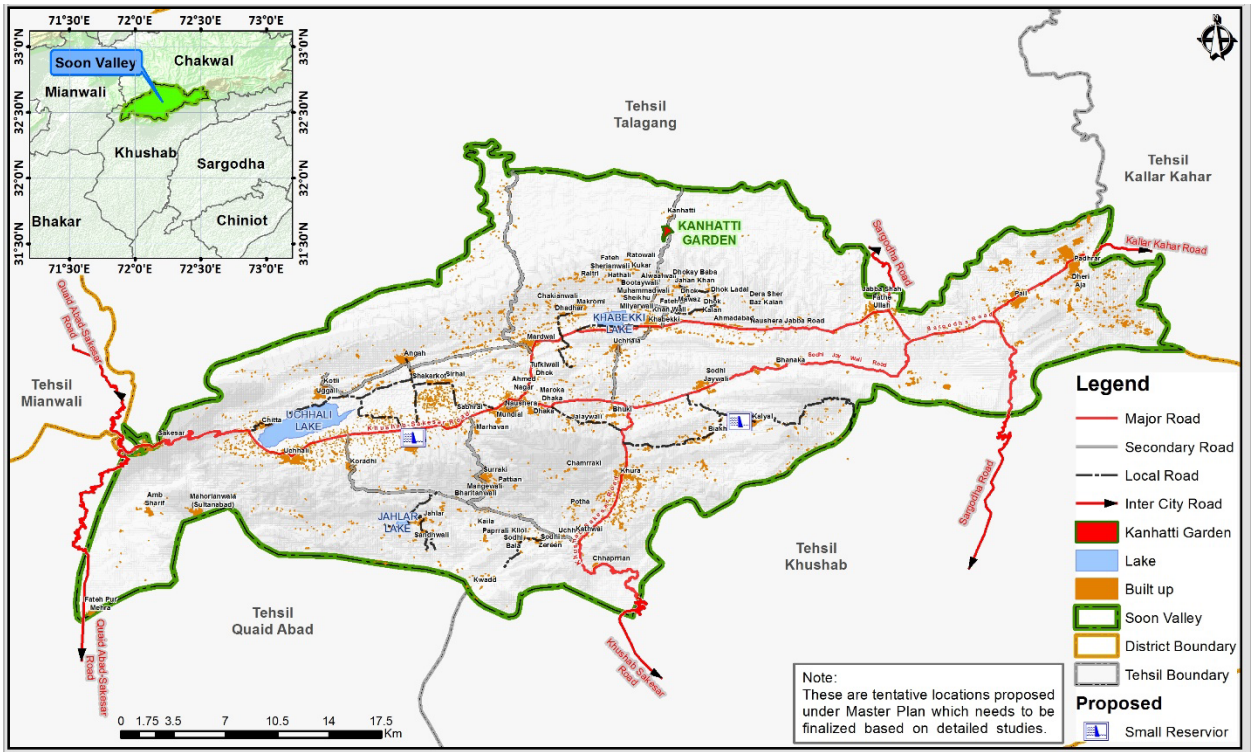


Figure 14: Proposed Locations of Reservoirs in Soon Valley

- Develop a schedule to install water conservation devices and treatments (e.g. low flow showerheads, 'smart taps', water less urinals).
- Collection and disposal of sewerage water in ahygienic manner to achieve 100% sanitation coverage to Soon Valley to minimize threats to local environment and health risks to its inhabitants and downstream areas
- Utilize a proportion of drainage levy to fund appropriate natural drainage opportunities, and developing a bio-filtration demonstration project at a suitable location.
- Phased introduction of separate networks for collation and disposal of sewerage and runoff water from rains
- Regular cleaning of waterways/drains to avoid clogging and overflow
- Seek funding and partners to develop a point source water quality testing regime in relevant communities.
- Establishment of environmentally sound waste water treatment facilities

Conserving existing water resources through

- *Development of a bio-filtration demonstration project*
- *Regular cleaning of waterways/drains to avoid clogging and overflow*
- *Seek funding and partners to develop a water quality education program in relevant communities*

- Seek funding and partners to develop a water quality education program in relevant communities
- Revision of the present governance and implementation sanitation framework to achieve sustainable sanitation services and attain financial and operational sustainability
- Develop community awareness campaign with partners to increase knowledge and understanding of the reality of water availability amongst ratepayers and administration and encourage improved behaviors in water use.

Technological Interventions

- *Development of a road side drains for sewage collection*
- *Provision of waste water treatment facilities to avoid mixing of polluted water and solid waste with the Lakes*
- *Cleaning of drains at regularly to permit free flow of water into drains*

5.1.4.2. Technological Interventions

- Most of the sewage water from homes and commercial properties is disposed-off indiscriminately into open spaces which make its way into different channels, lakes, sub-soil and drains. To collect sewage, all the roads and residential areas should be provided with roadside drains and piped-water collection facilities in residential areas. Since it is an expensive option so it should be implemented in phases with site-based analysis of each scheme.
- Provision of properly designed and environmentally safe waste water treatment facilities to avoid mixing of polluted water and solid waste with the Lakes. So, treatment plants should be provided at different spots. At least 2 to 3 treatment plants should be installed at Khabekki and Uchhali Lakes as depicted in the map given below.
- Cleaning of drains should be carried out regularly to permit free flow of water in these drains. This is particularly necessary for drains collecting sewage and runoff water from major settlements and areas such as; Naushera, Uchhali, Khabekki, Jahlar, Anga, Kufri (Sadiqabad) and Khura.

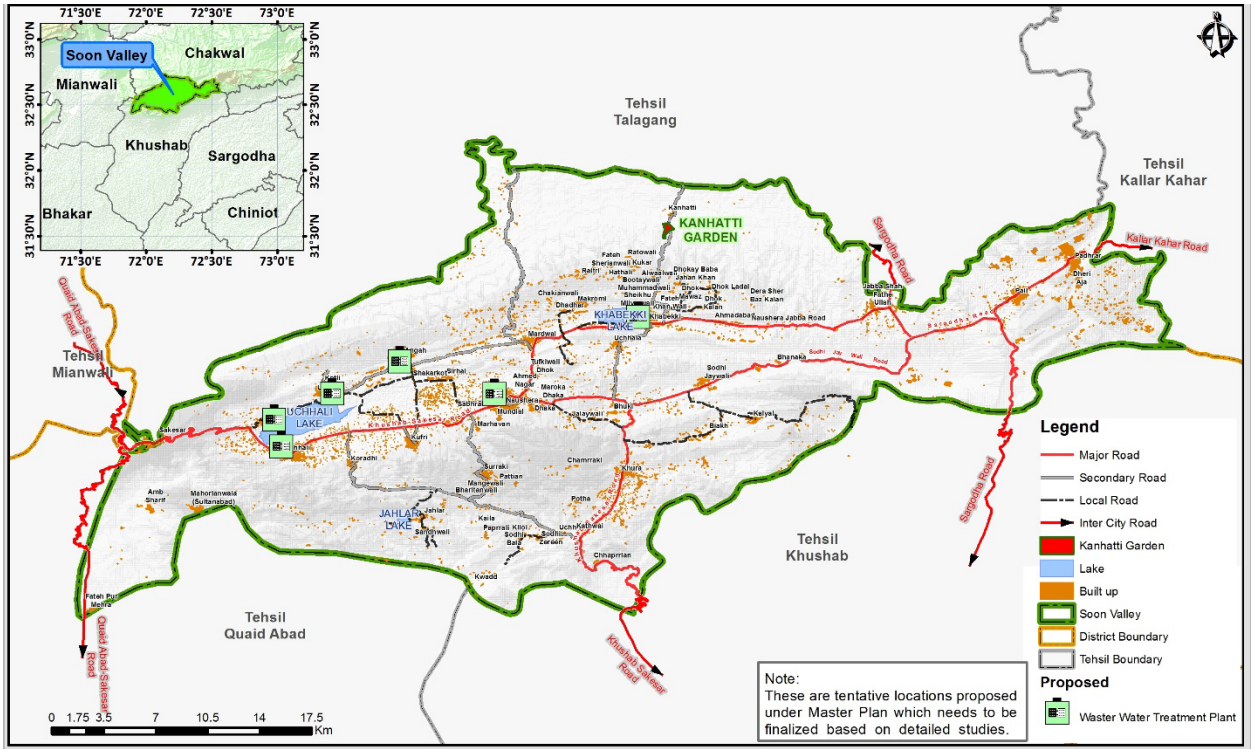


Figure 15: Proposed Locations for Waste Water Treatment Plants in Soon Valley

5.1.5. Conservation of Natural Resources / Biodiversity

One of the main attractions for tourists visiting Soon Valley is its unique landscape, flora and fauna. Due to increased dependency of residents on wood (for fueling purposes), this natural wealth, however, is under severe stress. This increased stress is due to the lack of initiatives for the protection of flora, fauna and important habitats of the area; poor implementation of forest and wildlife protection acts; inadequate participation of local inhabitants/NGOs and other organizations in various government schemes; and inadequate information base for local biodiversity.

Due to limited financial resources, however, the focus for the improvement of natural resources should not be on developing new "products" that would compete for the same

sources of funding, but on improving existing facilities and resources. Therefore, the strategic planning for this initiative identifies the following objectives:

- *Improve value-added amenities at natural resource*
- *Explore innovative means of repairing, maintaining and improving Valley's natural resources*
- *Raise awareness of all stakeholders about the responsible use of natural resources*

Improve value-added amenities at natural resource sites by:

- Implementing improvements for priority sites frequently visited by tourists which includes interpretative and directional signage, restroom and parking improvements, and other similar developments.
- Contracting private food and other concession activities to provide services at public sites.

Explore innovative means of repairing, maintaining and improving Valley's natural resources by:

- Seeking additional sources of public and private funding to maintain and improve Soon Valley's natural resources, including the control of invasive species.
- Exploring alternative funding sources such as entry and user fees (that would be used at the source from which they are generated), private donations, and leasing of more public lands to private entities at market rate.
- Exploring incentives to private landowners to provide the impetus for making private resources open and accessible to the public.

Raise awareness of all stakeholders about the responsible use of natural resources by:

- Encouraging environmental stewardship and the efficient use of resources by educating all stakeholders on water and energy conservation practices, recycling, controlling the spread of invasive species, and other prevention programs.
- Supporting efforts that encourage a sense of pride and ownership in Valley's natural resources such as providing signage that describes the natural, cultural and historic value of an area.

- Developing educational programs on proper protocol

for access to and care of certain sites.

- Providing accurate and responsible information to visitors about safety conditions of hiking trails, lakes, waterfalls and other visitor sites via public sources including websites, vacation planners, in-room videos, and warning signage to counter inaccurate information about health and safety issues in the Soon Valley.
- Providing interpretive and hospitality training for managers and staff of natural resources.

Increase collaboration among government agencies, the tourism industry and the community by:

- Encouraging public-private community programs such as volunteer programs to leverage limited resources and improve maintenance of resource sites.
- Identifying ideal visitation numbers for natural resource sites at the regional and provincial level during the preparation of the strategic tourism plans.

Raise awareness of commercial operators, information providers and others about the responsible use of natural resources by:

- Providing education and training programs that include accurate information on the natural, cultural and historic significance of various sites, and the proper protocol for access to and care of certain sites.
- Providing signage that describes the natural, cultural and historic value of an area.
- Expanding enforcement efforts to apprehend and prosecute those who do not obtain proper permits or who damage such resources.

Review and enforce rules and develop certification programs for commercial operations in natural resource areas by:

- Reviewing existing rules and developing certification programs which include requirements for adequate environmental and cultural knowledge for activity

- *Increase collaboration among government agencies, the tourism industry and the community*
- *Raise awareness of commercial operators, information providers and others about the responsible use of natural resources*

providers.

- Providing accurate information on natural resource sites.
- Protecting access to or even totally restricting access to sites that are deemed critical.

5.1.5.1.Key Projects for Natural Resources/Biodiversity Conservation

Short Term Projects

- *Change unique habitat areas into special enclosures for wildlife species*
- *Strengthen concerned departments for their capacities to conserve biodiversity*

Short Term Projects

- Change unique habitat areas (e.g.; Punjab Urial in Kalyal) into special enclosures for wildlife species with greater protection from poaching, hunting, etc.
- Strengthen concerned departments for their capacities to conserve biodiversity
- Celebrate a forest/biodiversity conservation week in Soon Valley on a yearly basis to create awareness among tourists and the general public.

Medium and Long Range Projects

- *Develop and adopt Biodiversity Action Plans for all natural areas.*
- *Protection of native plants from overharvesting and cutting*
- *Develop a restoration and management plan for prioritized biodiversity corridors*

Medium and Long Range Projects

- Establishment of a center for documentation and analysis of changes in biodiversity of the area
- Develop and adopt Biodiversity Action Plans for all natural areas.
- Protection of native plants from overharvesting and cutting
- Initiation of a research program/centre to evaluate the effects of climate change on the local environment, flora and fauna.
- Develop and adopt a landscaping local planning policy to require native tree plantings in public spaces for residential subdivisions and industrial developments.
- Creation of a Soon Valley Forest/Biodiversity Advisory Board including a representative from all stakeholder groups to advice on forest/biodiversity related issues.
- Develop a restoration and management plan for

prioritized
biodiversity
corridors.

5.1.6. Forest Conservation

Forest conservation is one of the dire need to conserve the natural environment and habitat within Soon Valley. As, the majority of the people depend on forests to fulfill their domestic needs like cooking, water boiling and space heating. Therefore, cutting of trees is a common practice adopted by the locals as there is no gas supply in the area. Moreover, forest fires have also led to deforestation in the area. Keeping in view this issue, following policies and strategies are recommended for forest conservation within the Soon Valley:

- Regenerating the forest at a rate higher than that of exploitation. In this regard, special tree-planting days and weeks should be arranged by the Forest Department to involve public in forest conservation
- Capacity building of the Forest Department personnel through extensive training to improve their knowledge and expertise to protect and develop forests of the area
- Strengthening of the Forest Department by the provision of latest equipment for fire control, monitoring and reforestation, etc.
- Encouraging agro-forestry by promoting necessary incentives and extension guidelines,
- Developing special forest conservation areas and no development should be allowed within such areas.
- Consolidating and expending the forest resources in Soon Valley for their maximum sustainable yield.
- Conserving forest by protecting other environmental resources such as soil, water and biota for effective sustained use
- Provision of fencing and other suitable protective facilities to protect high-value forest areas
- Clearing of plant-parts/pine-needles along roads/paths in dry summer months to decrease the chances of forest fires
- Creation of a Soon Valley Forest/Biodiversity Advisory

Regenerating the forest at a rate higher than that of exploitation

Capacity building of the Forest Department personnel through extensive training

Development of special forest conservation areas

Provision of fencing and other suitable protective facilities to protect high-value forest areas

Creation of a Soon Valley Forest/Biodiversity Advisory

- Board including a representative from all stakeholder groups to advise on forest/biodiversity related issues.
- To meet the future challenges of climate change, a pilot project to introduce REDD (Reducing Emission from Deforestation & forest Degradation) initiative/program for Soon Valley forests.

5.1.6.1.Key Projects for Forest Conservation

Short Term Projects

- Reforestation of deforested areas with artificial sowing and planting with suitable indigenous and exotic species,
- Provision of fencing and other suitable protective facilities to protect high-value forest areas,
- Improvement and maintenance of boundaries of forests (repair/construction of boundary pillars),
- Clearing of plant-parts/pine-needles along roads/pedestrian paths in dry summer months to decrease the chances of forest fires,
- Plantation of trees along roads/channels in settlements to create green corridors,
- Provision of training and necessary equipment to the forest department to increase its capacity for forest fire control.

Short Term Projects

- *Reforestation of deforested areas*
- *Plantation of trees along roads/channels in settlements to create green corridors*
- *Provision of training and necessary equipment to the forest department to increase its capacity for forest fire control.*

Medium and Long Range Projects

- Regular scientific studies of forests in Soon Valley to monitor any negative (disease attack, fires, illegal cutting) and positive (reforestation),
- Vacation of encroached forests and development of these vacated areas into fresh forest settlements,
- Strengthening of forest department in terms of trained staff, latest equipment and infrastructure.
- Study of possible effects of climate change on forests
- Introduction of new forest management programs such as REDD+ to conserve forests according to international standards.

Medium & Long Term Projects

- *Strengthening of forest department in terms of trained staff, latest equipment and infrastructure.*
- *Study of possible effects of climate change on forests*

5.1.6.2. Control of Soil Erosion and Land Sliding

Overgrazing is perhaps the most serious threat to a large number of plant species in the Valley, as the people in the valley are poor and mainly depend on animals for their earning. They do not have enough land for growing fodder of their animals, therefore graze their sheep, goats, cows, camels and other animals on natural vegetation causing real damage to vegetation. Such extensive grazing accompanied by aridity in the Valley have accelerated the soil erosion process. The role of indigenous soil erosion control techniques and slop stabilization have immense potential. Following soil erosion control techniques have great potential:

- Use of bio-fertilizing and cover cropping with indigenous leguminous cover crops like Mucuna spp, Cajanus cajan, Tephrosia candida, etc., heavy mulching in root crop cultivation, diversified cropping, crop rotations, relay cropping, various agroforestry farming practices, contour cropping, terracing, diversion canals, etc.
- Bio-engineering Techniques: It involves the use of wood or plant materials for slope stabilization. It may include dry seeding, hydro-seeding and the use of standard seed mixtures for freshly exposed slopes such as newly cut surfaces or freshly created roadside verges.
- Awareness building, motivation, and demonstration in the areas where soil erosion preventive measures are not undertaken by some communities due to socio-political reasons.
- The increase in forest cover is the best option to mitigate soil erosion and reducing run off losses.
- Reduce the speed of runoff water by fencing of crop fields with hedges/bushes.
- Proper control of sewage and runoff water. If rain runoff water or sewage water is spread evenly on the surface and slopes and it leaches down into lower strata on an even basis, it will have little or no disturbing effect on the

- *Use of Bio-engineering techniques for slope stabilization*
- *Awareness building and motivation of communities regarding soil erosion preventive measures*
- *Increase in forest cover in mitigating soil erosion*
- *Reduce the speed of runoff water by fencing of crop fields with hedges/bushes*

geological layers of the rocks. If however, its infiltration into the soil is uneven, and it continuously accumulates underground at certain points, it may seriously disturb the structure of underlying strata of soil leading to accelerated erosion and land sliding. It is, therefore, imperative to manage the water (rain water, domestic sewage, etc.) keeping in view its effects on the stability of soils and slopes in the area.

- Promotion of different sustainable land management practices in Soon Valley through on-farm training and implementation of different agroforestry farming practices by the local communities

Re-vegetation of certain areas in Soon Valley with suitable grass and herbaceous species,

Ban on removal of trees/plants from slopes, road verges

Establishment of hedges along crop fields/roads to control soil erosion

5.1.6.3. Key Projects for Forest Conservation

- Identification of the areas liable to greater chances of soil erosion/land sliding,
- Re-vegetation of certain areas in Soon Valley with suitable grass and herbaceous species,
- Ban on removal of trees/plants from slopes, road verges
- A pilot project to assess the suitability of bio-engineering techniques for erosion control and land sliding,
- Establishment of hedges along crop fields/roads to control soil erosion
- Terracing of crop fields

CHAPTER 6

Infrastructure Planning



6.1. Infrastructure Planning

6.1.1. Physical Infrastructure

Generally, infrastructure is known as "the substructure or underlying foundation, especially the basic installations and facilities on which the continuance and growth of a community depend." When they hear the term infrastructure, most people think of roads, sewers, utility lines, and other gray infrastructure; or hospitals, schools, and other social infrastructure. Taken together, these types of facilities are often referred to as built infrastructure.

Infrastructure can also be stated as "the physical framework of facilities through which essential municipal services like water, waste water, electricity and gas runs and provided to the public. The extent of infrastructure affects not only production and consumption directly but also will have an impact on every sector of economy as well as on environmental quality of any area".

Infrastructure plays in people's everyday lives is often taken for granted though it is one of the biggest issues that governments across the globe need to address in their public policies. Infrastructure investment in the development of communication channels, IT, roads, schools, and hospitals is important to both economic development and quality of life. Failure to invest means a failure to sustain and develop our social and economic wellbeing. The current situation in Soon Valley depicts that there is a severe shortage in terms of the availability of planned infrastructure which have resulted in number of problems and challenges. The major challenges and issues in each sector are summarized as:

- *Infrastructure can also be stated as "the physical framework of facilities through which essential municipal services like water, waste water, electricity and gas runs and provided to the public.*
- *Infrastructure investment in the development of communication channels, IT, roads, schools, and hospitals is important to both economic development and quality of*

6.1.1.1. Fresh Water

Key **Challenges**

-

The water supply is very poor with frequent incidents of shortage of water for houses and tourist related services. Another serious issue is the wasteful practices of water use in domestic and commercial enterprises sectors. During the surveys, it has been observed that water sources in Soon Valley are very limited as municipal water tanks, personal water borings, hand pumps and streams are the major sources of water

- Depth of water table in most of the areas in Soon Valley is considerable very low. Studies show that depth of water table has increased in the past few years due to regular boring of water.
- Quantity and quality of water supply schemes in the form of water tanks are not satisfying and clean drinking water is one of main priority of the residents of Soon Valley. According to Drought Mitigation & Preparedness Program Soon Valley Project, 2006-2008, drinking water usage per household was around 10 gallons, which has increased to 15 gallons per household per day. This increase is primary because more people are using boring water instead of municipal water supply, which had a limited water supply.
- At some locations, water pipelines pass through the solid waste dumps and open sewage ponds, which enhances the prevalence of mixing of sewage and drainage water with the drinking water.
- Most of the people have managed their own boring due to low quality water supply from government. Water boring is expensive as it costs Rs. 120,000 approximately. If this unchecked and uncontrolled ongoing discharge continues, it will eventually deplete the sub-soil fresh water aquifers in the long run. Quality of bored water is quite satisfactory as compared to the municipal water supply.
- People with low-income levels use communal hand pumps for their domestic usage. These hand pumps were

The water supply is very poor with frequent incidents of shortage of water for houses and tourist related services

Depth of water table in most of the areas in Soon Valley is considerable very low

Quantity and quality of water supply schemes in the form of water tanks are not satisfying and clean drinking water is one of main priority of the residents of Soon Valley.

Most of the people have managed their own boring due to low quality water supply from government.

observed in Sodhi Jay Wali, Uchhali and at some locations of Kufri Village.

- During the field studies, it was revealed by the residents that the monthly charges for these community water supply schemes are considerably very high i.e. ranging from Rs. 600 to Rs. 2,500 per month, which remains unaffordable for the residents especially those belonging to low income groups. Therefore, the majority of people are now shifting from using such a kind of water facility to personal water borings. This, eventually, threatens the sustainability of water-cycle in the Valley.
- According to EIA of Soon Valley conducted by The Urban Unit in 2015, the water in Uchhali and Khabekki Lake is alkaline in nature and slightly above the permissible limits defined as per NEQS (i.e. 6-9) due to the dissolution of various salt content (i.e. carbonates, bicarbonates etc.)

6.1.1.2. Policy Recommendations

- A fair pricing mechanism for enhancing the efficient use of supplies, speedy delivery of services and improving environmental sustainability with fewer or no negative impacts.
- Discourage inefficient use and abuse through regulatory, pricing and incentives / disincentive measures.
- Replacement of rusted municipal water supply schemes on short term basis, in areas in particular the major settlements such as Naushera, Kufri, Anga, Khabekki, Uchhali and Padhrar, to reduce functional inefficiencies.
- The administration of CO Unit Naushera should introduce measures to incorporate rain water harvesting regulation in building bye laws, and this should be adopted at each level. Every building shall have an underground water storage tank having minimum capacity of meeting all building residents water needs for 3 days. These tanks shall be connected to roof runoff drains/spouts after having met environmentally safe design guidelines/specifications.

- *A fair pricing mechanism for enhancing the efficient use of supplies, speedy delivery of services and improving environmental sustainability with fewer or no negative impacts*
- *Discourage inefficient use and abuse through regulatory, pricing and incentives / disincentive measures.*
- *Replacement of rusted municipal water supply schemes on short term basis*

-
-

TMA Khushab and CO Unit Naushera must improve the efficiency of existing supply sources of water by replacing existing water supply schemes with energy efficient system in the first phase and ultimately going for solar powered solution wherever possible.

- Periodic up gradation, cleaning and maintenance of water storage tanks at all settlements on regular basis to ensure clean supply throughout the year. This also includes disinfection procedures. Cleaning/maintenance is proposed to be done on quarterly basis.
- Most desirous goal is immediate replacement of all existing worn out exposed water supply lines. This includes burying all the water supply lines under suitable sub soil depths wherever possible, and where space/terrain does not allow, suitable burying should be made above the ground (aerial) on laying pattern arrangements conforming international standards. The design ensures safety, efficiency and aesthetics. It will also ensure safety of supply lines against physical/weathering damages and avoiding visual nuisance as well. It is also proposed that all connections should be metered and time supplied. To enhance water consumption incremental metering and rates are advised to be introduced.
- Adding water supply infrastructure especially water lines to all the areas which have been left out of service particularly in Chambal and Sodhi Wali in emergent term and extending these to proposed new development areas in medium and long terms.
- Revising tariffs, installation of water meters and adopting a fair pricing mechanism (a cost based reverse pricing on incremental basis) for water supply to reduce inadequacies between commercial abuse and residential use.

- *Periodic up gradation, cleaning and maintenance of water storage tanks at all settlements on regular basis to ensure clean supply throughout the year.*
- *Introduction of water usage guidelines to local as well as transient population to promote water usage efficiency and conservation at large.*
- *Periodic water quality tests should be conducted to ensure quality supply of water to the household thus reducing the*

- Introduction of water usage guidelines to local as well as transient population to promote water usage efficiency and conservation at large.
- Periodic water quality tests should be conducted to ensure quality supply of water to the household thus reducing the water borne disease burden.

6.1.1.3. Storm Water

- CO Unit Naushera must focus on providing sustainable green infrastructure in the Valley. To enhance efficiency through maximum exploitation of existing assets and optimal induction of additional resources, Promotion of green infrastructure is suggested as it proves a life line to the environment through which it runs, improves the quality of life of inhabitants being served and supports reuse / recycling.
- Design and construction of isolated runoff drain under walkways along all roads in Soon Valley.
- Stabilizing beds of runoff drains (these include Kalyal, Sodhi, Khabekki, Uchhali, Chambal, etc.) by adopting such techniques to facilitate discharge of excess runoff after even recharge and restricting bulk penetration of runoff water as it has been found out that bulk penetration is a prime cause of strata/slope failure.
- All the runoff drains are to be connected to primary treatment facilities (method and design of such facilities shall be done by the TMA Khushab and CO Unit Naushera). This treated runoff is further proposed to be supplied back to the inhabitants of the Valley after suitable treatment.
- Design and construction of bore wells are proposed connecting improved runoff channels alongside all the roads in major settlements of the Valley such as; Naushera, Khabekki, Uchhali, Padhrar, Anga and Kufri. These bore wells will boost an even recharge of sub

CO Unit Naushera must focus on providing sustainable green infrastructure in the Valley.

Design and construction of isolated runoff drain under walkways along all roads in Soon Valley.

Measures to expose hidden drains / runoff channels to day light and stabilization of channel surface.

Design and construct isolated rain water runoff from pavements and should not be

- surface aquifer and ultimately yielding more supply through springs.
- Measures to expose hidden drains / runoff channels to day light and stabilization of channel surface. It will enhance water quality, eradication of pathogens, increasing the action of the aerobic micro-organism to convert harmful complex organic molecules to simpler nutrients for plants and other ecology
- Design and construct isolated rain water runoff from pavements and should not be mixed to sewage.

Entire project area lacks proper sewerage and drainage system.

Due to the poor quality of water, people suffer from various water borne diseases like hepatitis, typhoid, malaria and skin infection. Among these, majority (80%) of the patients suffer from hepatitis and malaria

There is no wastewater

6.1.1.4. Waste Water

Key Challenges

- Sewage and drainage disposal is being observed as a major problem within the project area as the condition of sewerage and drainage system is poor.
- Entire project area lacks proper sewerage and drainage system. Open sewerage and drainage system is mostly found. Even the Naushera Town lacks such facilities and almost all the liquid wastes are being disposed of in the surrounding open areas, fields and even on streets causing and a major threat to the quality of life of local inhabitants.
- Due to the poor quality of water, people suffer from various water borne diseases like hepatitis, typhoid, malaria and skin infection. Among these, majority (80%) of the patients suffer from hepatitis and malaria
- There is no wastewater treatment facility in the area.

Policy Recommendations

- A comprehensive, integrated planning for the collection of sewage water should be adopted. This system must be further coupled with primary level treatment facilities proposed near the settlements/villages of Khabekki, Uchhali and Jahlar lakes. These facilities would serve a small reservoirs too and treated/filtered volume further

may be supplied to rural inhabitants down the slopes through gravity to irrigate their agriculture holdings. This is the most pressing issue as most of the un-channelized runoff / sewage bulks get it ways into sub soil strata and aggravating land sliding / slope failure issues.

- Design and construction of a comprehensive, integrated system for the collection of sewage water from every building parcel is to be initiated on top priority throughout the Soon Valley.
- Design and construction of 2-3 treatment facilities at Chitta, Khabekki, Jahlar and Uchhali villages each having capacity of 1.25 mgpd and it is expected that these facilities shall sufficiently serve up till mid-plan period and could be enhanced afterwards.
- Treated volume further may be supplied to rural inhabitants of these above-mentioned villages downstream to irrigate their agriculture holdings. This is the most pressing issue as most of the channelized runoff / sewage bulks gets its ways into sub soil strata.
- Regulatory measures should be taken on open disposal of sewerage of any form and type into the Lakes (Khabekki, Uchhali and Jahlar). The polluter should be heavily fined.
- Every household is desired to construct septic tanks if not connected to the sewerage network.
- Consideration must be paid for the future sewerage network coverage connection and future provision (plan and design) for the new proposed development zones.

6.1.1.5. Fuel for Cooking

Key Challenges

- While inquiring about the availability of gas facilities, it was found that there is no piped gas facility within this area.
- People primarily use wood, cow-dung and coal for their domestics use while the very limited use of biogas (from different biogas plants installed in the region) has been

. Design and construction of a comprehensive, integrated system for the collection of sewage water from every building parcel is to be initiated on top priority throughout the Soon Valley.

Every household is desired to construct septic tanks if not connected to the sewerage network.

No piped gas facility is available in Soon Valley

People primarily use wood, cow-dung and coal for their domestics use

Raising awareness among the natives regarding environmental conservation and deforestation.

found. In the case of commercial use, people use LPG gas cylinders to meet their needs. The cost of LPG for one cylinder and one bar of wood costs Rs. 1200 and Rs. 500 respectively. It is estimated that one bar of wood used mainly for cooking purposes lasts for two weeks, and it is around 6% of household's monthly income.

Policy Recommendations

- Raising awareness among the natives regarding environmental conservation and deforestation. TMA Khushab and CO Unit Naushera should raise awareness campaigns in this regard.
- Shifting from wood to renewable energy sources such as biogas (which is an emerging trend in Soon Valley). The policies and action plans should be prepared in this regard.

6.1.1.6. Telecommunication Services

Key Challenges

- The majority of the project area lacks communication facilities such as telegraph, telephone, mobile phone and both wired and Wi-Fi internet services. In Soon Valley, these facilities are not adequate to meet the demand of the entire population.
- PTCL is a recent intervention by the Government and has limited coverage in the project area. Currently, PTCL is only functional in Naushera and Khabekki, so people from other areas like Uchhali, Kufri, Anga, and Sodhi have to come to Naushera.
- In 2005, mobile coverage was limited to few major settlements like Naushera Town, Uchhali and Khabekki. With the recent advancement in Information Technology, the coverage of mobile services has increased and cover 80% of the project area. Signals are distorted in some of the areas like Sureki and Jahlar etc. According to the local residents, Telenor, Ufone and Mobilink are the main service providers in this area.

- *In Soon Valley, Telecommunication services are not adequate to meet the demand of the entire population*
- *PTCL is a recent intervention by the Government and has limited coverage in the project area.*
- *Internet service is only limited to Naushera and Khabekki*

- Internet service is only limited to Naushera and Khabekki

Policy Recommendations

The following interventions are suggested to improve the telecommunication services in the Valley

- Consideration must be paid for the network coverage connection and future provision (plan and design) for the new proposed development zones. Measures should be taken to enhance / improve the quality of cellular communication services in the areas such as Sureki and Jahlar.
- The communication network wires (electricity cables etc.) should be put underground in whole Soon Valley.
- PTCL should be extended to the whole Soon Valley. It can be installed in phases; initially, major settlements such as Kufri, Anga, Padhrar, Khura and Uchhali should be provided with this facility. Later on, it can be extended to whole project area.
- Measures should be taken to provide the internet facility within the whole Soon Valley.

Measures should be taken to enhance / improve the quality of cellular communication services in the areas such as Sureki and Jahlar.

The communication network wires (electricity cables etc.) should be put underground in whole Soon Valley.

6.1.1.7. Electricity

Key Challenges

Electricity is available in around 92% of the area. Average monthly bill is around Rs. 1,500 to Rs. 2,000, despite the fact that these areas face severe load shedding lasting for 15-18 hours in 24 hours. 20-30% of the income of each household is spent on electricity charges. Electricity is used mostly for pumping water, pressing clothes.

Policy Recommendations

- CO Unit Naushera in collaboration with TMA Khushab must endeavor to install pedestrian scale street lighting, road marking, guide maps, traffic signage and digital

Electricity is available in around 92% of the area

The installed FESCO aerial distribution/ electrification network is poor; it should be gradually upgraded and preferably go underground in the short term plan.

Electricity Meters should be visually protected.

information signage system on priority in the early short term. PPP model may be adopted.

- The installed FESCO aerial distribution/ electrification network is poor; it should be gradually upgraded and preferably go underground in the short term plan.
- Electricity Meters should be visually protected.
- Human scale solar powered street lamp posts should be installed in conformance with the urban design on all tourist sites (such as Khabekki Lake, Uchhali Lake, Jahlar Lake and Kanhatti Garden, etc.), public buildings (primarily in Naushera) and along major corridors in Naushera. Consideration must be paid for the network coverage connection and future provision (plan and design) for the new proposed development zones.

6.1.2. Social Infrastructure

Key Challenges

The key challenges associated with the social infrastructure are summarized in the section given below:

i) Health

- BHUs lack skilled human resource to deal with patients. In Naushera THQ, 50% of the seats are vacant, and there is no male doctor available. In Uchhali, there is no doctor available to treat patients, and people are at the mercy of quacks.
- Due to poor road infrastructure, people are not able to reach these health facilities quickly. For routine checkups, they have to cover long distances. In addition, the field analyses reveals that 58% of the residents/respondents do not have access and availability to health facilities which is quite a matter of concern.
- Local inhabitants are generally of the view that doctors being posted here do not prefer to live here because of low quality residential and other facilities.

BHUs lack skilled human resource to deal with patients.

Due to poor road infrastructure, people are not able to reach these health facilities quickly.

Buildings of health facilities are in dilapidated condition

- Buildings of health facilities are in dilapidated condition.

- These BHUs do not even have the minimum medical equipment required like X -ray machines or other equipment prescribed in their own policies. They do not even have ambulance facilities to take patients requiring emergency treatment to a hospital.
- Non-availability of medical advice and medicines to the poor from these BHUs has led to a rise in mortality rates as well as an increase in the incidence of diseases.
- In Naushera Tehsil Headquarter Hospital, no male doctor is present except Medical Superintendent (MS), and the hospital lacks some important machinery for trauma and anesthesia patients.
- According to the Medical Superintendent (MS) of Tehsil Headquarter Hospital Naushera, 50% of the seats are vacant.
- Because of poor solid waste, sewerage and drainage system, people suffer from various waster borne diseases like typhoid, malaria, skin diseases and infection. Most of the medicals stores are located in Naushera and some dispensaries are found in small villages.
- According to the Medical Superintendent Naushera Tehsil Headquarter Hospital, there is no doctor available in both of RHCs in Padhrar and Khabekki. During pregnancy, people face many problems due to the absence of lady doctor in their vicinity and they have to move to THQ Naushera. Studies show that Infant mortality rate (per 1,000 births) is 86, which is higher than Khushab District. This rate is expected to increase, and health facilities have to be improved to avoid in the future.
- Tourist sites are not provided with infrastructure facilities like waste bins, medical facilities in case of emergency, etc.

- *Non-availability of medical advice and medicines to the poor from these BHUs has led to a rise in mortality rates as well as an increase in the incidence of diseases.*
- *According to the Medical Superintendent (MS) of Tehsil Headquarter Hospital Naushera, 50% of the seats are vacant.*
- *Because of poor solid waste, sewerage and drainage system, people suffer from various waster borne diseases like typhoid, malaria, skin diseases and infection*
- *Tourist sites are not provided with infrastructure facilities like waste bins, medical facilities in case of emergency, etc.*

ii) Education

- According to the studies conducted by The Urban Unit Team, it was revealed that literacy level of people is relatively better than other areas of Khushab, and it has improved from 55% in the year 2006 to 72% in 2016.
- Surveys reveal that 50% of the literate population is male, and 28% of the literate population is female. The rate oprimary level education is higher for females as compared to males, while in higher education the share of females is lower than their male counterparts. The overall level of educational attainment of the population living in the valley is higher than the corresponding level nationwide.
- During studies, it has been observed that educational facilities are spread unevenly in the area. Mainly, these are located along the main roads, and people coming from other parts of Union Councils face problems due to weak transportation structure. Moreover, the visit to a primary school in Khura revealed that schools are lacking required number of teacher sanctioned as per policy.
- These schools are also lacking proper infrastructure like play grounds, reading rooms, chairs, etc. According to the students interviewed in Naushera, quality of education in Khabekki, Uchhali, Jabba, and Kufri, is not up to the mark, and they have to travel to Naushera for obtaining a quality education.
- Soon Valley lacks new coaching centers and vocational institutes for specialized education. Due to inadequate infrastructure facilities and deteriorating quality of education in government institutes, private institutes like Punjab College, Dar-e-Arqam have also opened.
- Lack of quality education in other settlements forcing the people to enroll their children in Naushera educational institutes thus putting a lot of burden on the infrastructure of Naushera.

Literacy level of people is improved from 55% in the year 2006 to 72% in 2016.

Surveys reveal that 50% of the literate population is male, and 28% of the literate population is female

Educational facilities are spread unevenly in the area.

Soon Valley lacks new coaching centers and vocational institutes for specialized education.

Lack of quality education in other settlements forcing the people to enroll their children in Naushera educational institutes thus putting a lot of burden on the infrastructure of Naushera.

iii) Parks, Open Spaces and Play Areas

iv)

- Despite a number of recreational and touristic sites within the project area, it was observed during the field studies that there is no proper playground in the area, where people can enjoy specific sports and recreational facilities.

v) Accessibility of Social Infrastructure

- The police station is only located in Naushera Town and people residing in other UCs, in case of crime, face difficulty accessing to this. 12% of the population lives within a range of 1-3 km from this police station whereas 42% lives at a distance of 5.1 to 10 km from this.
- As there are number of primary schools within the project area, so according to our analysis and respondents' point of view, these facilities are quite accessible for the residents. For 42.7% of the population, it is available within the distance of 3 km while for 32.7% these facilities were present within a vicinity of 3.1 to 5 km.
- The analyses reveal that the availability of basic health facilities within the project area was also found to be quite satisfactory. For 62% of the population, BHUs were present at a distance of 5 km from their residence.
- The secondary data obtained from the website of Pakistan Post reveals that one post office is available in each union council of the area. This data was verified using the primary data from the respondents, and it reveals that the majority of residence are satisfactory with the availability and locations of post offices i.e. 76% of the population has easy access to the post office.

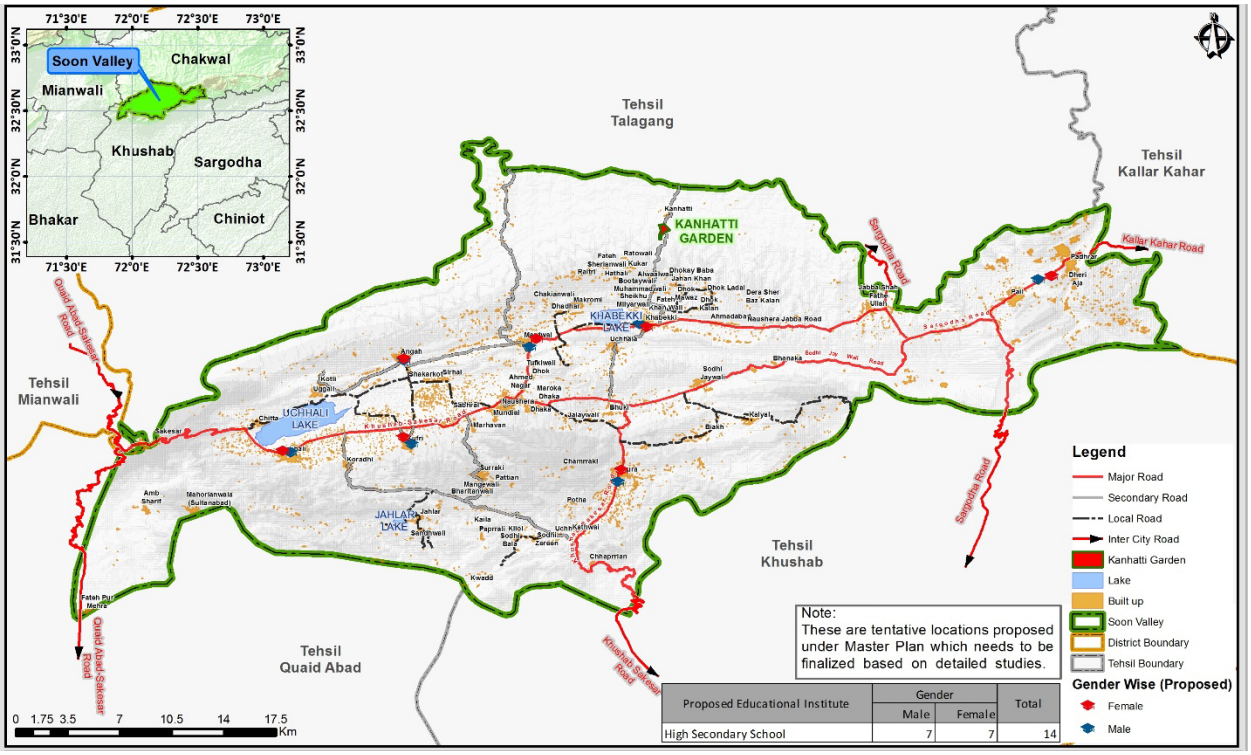
6.1.2.1. Policy Recommendations

- Provision of higher secondary school facilities in major settlements (which are lacking such facility). At least one higher secondary school (each for females and males) should be provided in Khabekki, Uchhali, Padhrar, Jahlar, Kufri, Anga and Khura.

12% of the population lives within a range of 1-3 km from this police station whereas 42% lives at a distance of 5.1 to 10 km from this.

For 62% of the population, BHUs were present at a distance of 5 km from their residence.

The secondary data obtained from the website of Pakistan Post reveals that one post office is available in each union council of the area.



Proposed Educational Institute	Gender		Total
	Male	Female	
High Secondary School	7	7	14

Figure 16: Proposed Locations of Higher Secondary Schools in Soon Valley

- *Provision of higher secondary school facilities in major settlements (which are lacking such facility).*
- *Health and safety guideline should be made an integral part of building regulations and enforced on a priority basis.*
- *Special measures and campaigns should be taken up for improving the hygiene and health condition of the Valley*

- Health and safety guideline should be made an integral part of building regulations and enforced on a priority basis.
- Measures should be taken to recruit qualified doctors in Tehsil Headquarter Hospital (THQ) Naushera. At least more male doctors are required to meet the current needs in THQ. Moreover, the proper facilities such as; Trauma Canter, Anesthesia, etc. should be provided on urgent basis.
- The existing Basis Health Units (BHUs), Rural Health Centers (RHCs) and some private clinics/hospitals (in Uchhali and Naushera) should be provided with basic maternal and child health care services. At least one lady doctor should be appointed in these health centers.

- Special measures and campaigns should be taken up for improving the hygiene and health condition of the Valley.

- Dilapidated structures should be demolished and reconstructed through special grants from concerned departments.
- All building should follow emergency safety and rescue procedures specially buildings serving public gatherings.
- All new facilities proposed in development zones should be developed considering engineering standards for hazard risk areas.
- Online banking facilities should be extended to the whole valley. At least one bank with ATM facility should be provided in each Union Council as shown in the map given below.

Dilapidated structures should be demolished and reconstructed through special grants from concerned departments.

Online banking facilities should be extended to the whole valley.

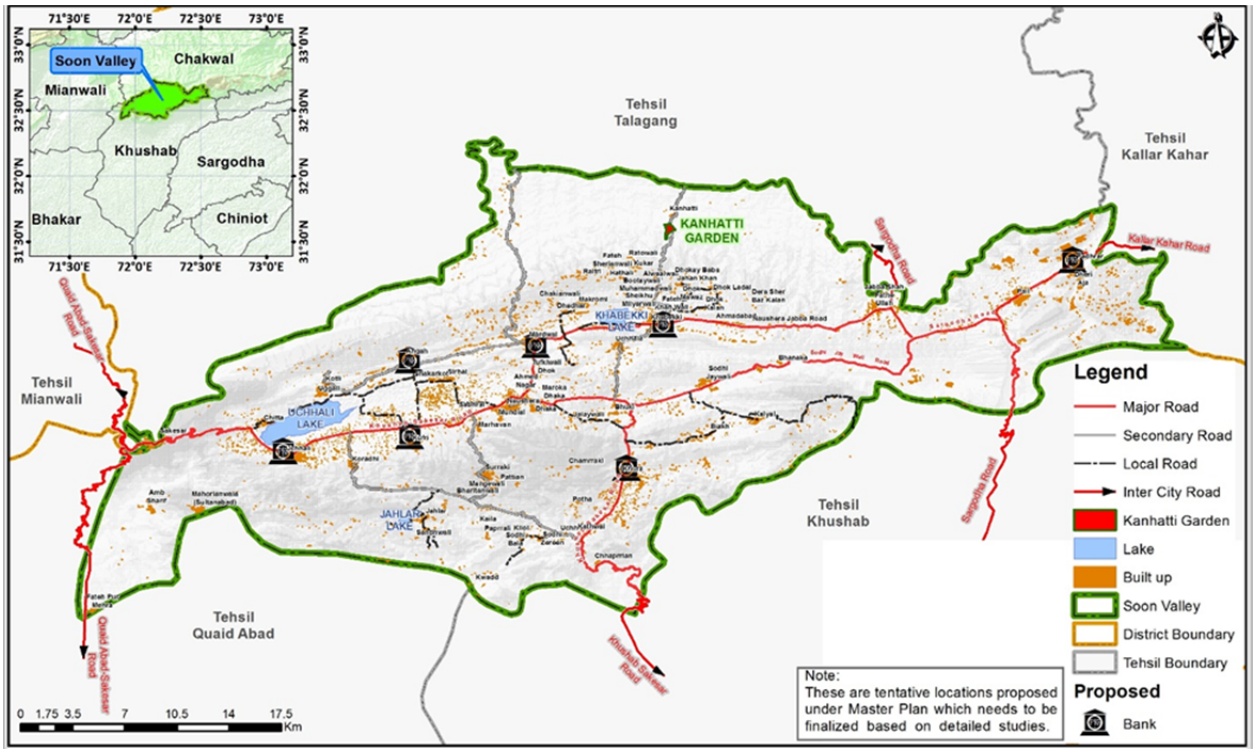


Figure 17: Proposed Locations of Banks and ATM in Soon Valley

6.1.2.2. Key Projects for Infrastructure Development

Short Term Projects

- Immediate replacement of all existing worn out exposed water and sewerage lines and burying it as per standard design parameters.
- Adding more infrastructure specially water lines to all the areas which have been left out of service area in Sodhi, Uchhala, Kalyal, Mardwal, Chambal, etc.
- Establishment of emergency rescue service 1122
- Provision of street lamps and decorative illumination.
- Design and construction of a comprehensive, integrated system for the collection of sewage water from every building parcel to be initiated as a top priority. This system must be further coupled with primary level treatment facility and treated volume further may be supplied to rural inhabitants down the slopes through gravity to irrigate their agriculture holdings.
- Proper design/construction of runoff drain systems to collect and use runoff water for recharge from different pavements without letting it go unused into sewage. Recharge soak pits/bore wells are intended to be constructed at designated intervals along the major roads on suitable places, to boost even distribution of sub-surface aquifer recharge.
- Preparation of water usage guidelines to local as well as transient population to promote water usage efficiency and conservation at large.
- Rain water harvesting techniques should be explored and made compulsory as a part of building regulations as well.
- Design and construction of small reservoirs on rain water drains especially near Kufri and Kalyal. Water volume stored in such reservoirs may be filtered/treated and further supplied to meet the irrigation needs of

Short Term Projects

- *Immediate replacement of all existing worn out exposed water and sewerage lines and burying it as per standard design parameters.*
- *Provision of street lamps and decorative illumination.*
- *Rain water harvesting techniques should be explored and made compulsory as a part of building regulations as well.*
- *Enhancing telecommunication/mobile communication infrastructure to meet the need for at least early 5 years of plan period.*

downstream rural inhabitants of Kalyal, Kufri and Anga villages.

- Enhancing telecommunication/mobile communication infrastructure to meet the need for at least early 5 years of plan period.

Medium & Long Term Projects

- Management planning of water source, supply, and distribution over plan period.
- Management planning for sewage collection, treatment and disposal system over the plan period.
- Management planning for all physical and social infrastructures such as public buildings, offices, schools, hospitals, mosques, emergency services, buried/exposed infrastructure and road network.

Medium & Long Term Projects

- *Management planning of water source, supply, and distribution over plan period.*
- *Management planning for sewage collection, treatment and disposal system over the plan period.*

CHAPTER 7

Tourism



7.1. Tourism

7.1.1. Key Findings & Challenges

- *Lesser governmental patronage in the past marginalized the valley in terms of tourist draw*
- *Community is highly under privileged, living just above the poverty line and mostly dependent on natural capital to make their livelihood.*
- *The scope of international tourism is limited as the Valley lacks air, rail connectivity and thus remains a hidden gem within competing tourist destinations in Punjab.*
- *The road condition within the Soon Valley is categorized as poor.*
- *The poor reception and network coverage of telephonic & internet services, improper refuse and*

- From an organizational, development management and funding perspective, Soon Valley has experienced a long spelled neglect and fluctuation in funding over the past several decades. The Valley badly lacks supportive touristic infrastructure in terms of both accessibility and quality of services.
- Lesser governmental patronage in the past marginalized the valley in terms of tourist draw.
- Community is highly under privileged, living just above the poverty line and mostly dependent on natural capital to make their livelihood. As a consequence, they are unable to invest in tourism sector as an active contributor and gainer.
- The scope of international tourism is limited as the Valley lacks air, rail connectivity and thus remains a hidden gem within competing tourist destinations in Punjab. Further, the Valley lacks high-end tourism with higher revenue potential; the quality of tourism infrastructure and tourism activities of international quality are non-existent.
- Except road connectivity from M2 Motorway Kallar Kahar Interchange, the Valley is deprived of rail network. Thus, lack of connectivity is a major hindrance for promoting tourism.
- The road condition within the Soon Valley is categorized as poor.
- The inadequate parking and water supply are major constraints faced by the tourism service providers in attracting tourists
- The poor reception and network coverage of telephonic & internet services, improper refuse and solid waste disposal along lakes, pose a bad experience

- The Valley also lacks hospitality infrastructure that also puts its tourism potential at a position that is more disadvantageous.
- Besides the physical infrastructure, the Valley seriously lacks tourism infrastructure including canteens, restaurants, lodging facilities including rest houses and hotels, proper sitting places (benches) on touristic sites, children play areas and proper signage and sign posts at various places for proper guidance and accessibility of tourists to different tourist spots within the Valley.
- Soon Valley acts as a weekend tourist destination with bag packers adding stress to existing strained infrastructure without contributing much to the economy. The Travel Information Survey conducted by the Consultants indicates that 33% tourist originate from neighboring city Khushab, 20% Lahore, 16% Islamabad, 9% Sargodha, 7% Jhelum, 6% Chakwal, 5% Mianwali, 2% Faisalabad and 2% from other cities.
- Presently, the duration of stay is very low as compared to other tourist destinations in Pakistan. Most of the tourists are day-trippers (52%) followed by 35% of visitors who wish to stay for 01-02 days in the Valley if there were adequate lodging facilities. This is due to the lack of enough tourism activities/options for tourists as well as accessibility problems within the Valley.
- 88% of the tourists use personal vehicles including bikes and cars and encounter hardships in finding directions, drinking water, public toilets and parking facilities.
- Camping, one of the tourist activities is also not a secured one in the valley. . For-example, only Kanhatti Garden is safe for overnight camping as the site is within a walled-boundary and being guarded by too. Whereas, the scope of camping is a limited one at other sites, unless an enabling environment is provided by the government or tour operators.

The Valley also lacks hospitality infrastructure that also puts its tourism potential at a position that is more disadvantageous.

Soon Valley acts as a weekend tourist destination with bag packers adding stress to existing strained infrastructure without contributing much to the economy.

88% of the tourists use personal vehicles including bikes and cars and encounter hardships in finding directions, drinking water, public toilets and parking facilities.

- The results of field surveys depict that 81% of tourists visit Soon Valley on recommendation of a friend/acquaintance, 4% on the recommendation of travel agents, and 14% were inspired by the photographic/visual materials available online; whereas 1% of tourists were actually inspired by the marketing and promotion campaigns run by the Tourism Development Corporation of Punjab.
- The nearest Tourism Information Center of the TDCP is located at Kallar Kahar about 59 km away from the Soon Valley. Thus the tourists experience inconvenience in accessing the site, for seeking direction and knowing exactly what to do and where to go when they enter the Valley.
- The Valley has no proper trained guides who can promote history, culture, heritage and touristic value of the Valley. Consequently, as the tourists arrive at such a place there is hardly anyone to satisfy the inquisitiveness of the tourists. Lack of trained tourist guides in the area also makes Soon Valley a less tourist attraction destination.
- During the field studies, it was found that majority of the tourists were dissatisfied with the availability and quality of tourist services. Hence, the visitors have to face a lot of difficulties in enjoying the touristic spots. These facilities are only available in Naushera town.
- The recent bilateral agreement of Pakistan with China on the development of China Pakistan Economic Corridor (CPEC) offers high opportunities for tourism sector as well.
- Inadequate and poor quality accommodation facilities within the valley, makes it difficult for overnight-tourists to enjoy a quality stay. These facilities are only available in Naushera town.

- *81% of tourists visit Soon Valley on recommendation of a friend/acquaintance*
- *The Valley has no proper trained guides who can promote history, culture, heritage and touristic value of the Valley.*
- *The recent bilateral agreement of Pakistan with China on the development of China Pakistan Economic Corridor (CPEC) offers high opportunities for tourism sector as well.*

- The survey results show that the local population is mostly engaged in agriculture sector (37%), whereas 39% of population is self-employed, 16% is engaged in government employment and 8% are engaged in private sector jobs. Approximately, 1% of self-employed population is involved in tourism sector services.
- Currently, the tourism economy in the Valley is highly characterized as a seasonal, fragmented, multi-faceted service industry. Where most of the labor in tourism employment is associated within the transport, food and beverage, and accommodation sectors. However, their skill-set puts a question on quality and level of service which is currently found poor.
- During the field visits, it was observed that the tourists are insensitive towards the environment of the Soon Valley as a result of which environmental degradation takes place and low quality of tourism services exist. The general practice of throwing rubbish irresponsibly, vandalism of public and touristic infrastructure – all contribute to the unsustainable tourism practices. Concentrated efforts are required to enhance and preserve the natural and cultural heritage of the Soon Valley that in return shall improve the quality of life and tourism development within the project area.
- Soon Valley acts as a growth led center in terms of tourism development. There are marvelous chances that the Soon Valley could act as the shortest route to link the two alignments (Eastern and Central) of CPEC.
- Currently, no tourism master plan exists concerning the tourism sector
- No guidance available for tourists
- Inadequate and quality-compromised tourist accommodation
- Inadequate tourist infrastructure
- Inadequate and quality eating areas in the Soon Valley

- *37% local population is mostly engaged in agriculture sector*
- *Soon Valley acts as a growth led center in terms of tourism development.*
- *Currently, no tourism master plan exists concerning the tourism sector*
- *No guidance available for tourists*
- *Inadequate and quality-compromised tourist accommodation*

- Less diversification of tourism activities
- Human-induced tourism exploitation of environment
- Improper signage and tourist facilities
- Unavailability of guided tours
- Wetland degradation
- Less governmental patronage
- Inadequate tourism infrastructure
- Connectivity and accessibility issues
- Under-developed human capital
- Unsustainable tourism practices
- No emergency response system

Wetland degradation

Less governmental patronage

Inadequate tourism infrastructure

Connectivity and accessibility issues

Under-developed human capital

7.1.2. Recommendations

- Eco-tourism Master Plan 2040, for the Soon Valley to act as a guiding tool for tourism sector development in the Soon Valley
- Enhancement of conservation practices for Kanhatti Garden, Jahlar Lake, Uchhali Lake and Khabekki Lake are recommended which will increase the recreational values of these spots.
- The Master Plan to be implemented in full letter and spirit
- Quality and adequacy of tourist accommodation to be ensured
- Tourism Information Center to be established at Pail and Naushera Town
- Tourism Information Counters to be established at all Tourist Points such as Khabekki Lake, Uchhali Lake, Jahlar Lake, Kanhatti Garden, etc.
- Tourism Destination Maps to be placed in several locations of the Soon Valley especially on Quality Tourist infrastructure to be provided at all the tourist spots which includes seating for tourist, rain shelters, parking spaces, lighting and safety arrangements etc.

Eco-tourism Master Plan 2040, for the Soon Valley to act as a guiding tool for tourism sector development in the Soon Valley

The Master Plan to be implemented in full letter and spirit

Quality and adequacy of tourist accommodation to be ensured

Tourism Information Center to be established at Pail and Naushera Town

- The private sector is encouraged to open restaurants and cafés in the Soon Valley.
- Diversification of tourism activities should be ensured. This includes mountain-biking experience, adventure tourism, eco-tourism, medical tourism, etc.
- Eco-tourism activities including guided tours, camping, bird-watching, trailing and trekking to be introduced.
- Signage for tourists and tourism facilities to be installed at various locations of the Soon Valley.
- A tourism website for the Soon Valley should be launched by the TDCP, which provides guidance, booking, travel information and tourism services within the Soon Valley.
- Travel agents & online booking is encouraged. This will enhance the visitation to Soon Valley.
- The private sector & TDCP is encouraged to operate tour service from various places of Punjab and Islamabad.
- Diversification of tourism products is recommended in the areas of eco-tourism, agriculture tourism, and cultural tourism.
- Promote integration of tourism and infrastructure provision through integrated planning and interdepartmental coordination.
- A buffer of 300 and 200 meter as suggested in the master plan around Uchhali, Khabekki and Jahlar lakes.
- Tourists should be discouraged for taking vehicles on bed of lake i.e. Uchhali lake and Khabekki lake.

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Signage for tourists and tourism facilities to be installed at various locations of the Soon Valley.

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Tourists should be discouraged for taking vehicles on bed of lake i.e. Uchhali lake and Khabekki

7.1.3. Thematic Proposals for Lakes

Tourism facilities are an important factor in shaping tourism, as it gives easiness, comfort, cleanliness, safety and security to tourists. The basic goal was to provide all facilities to the tourist, while protecting and preserving the biodiversity of the area. The designs follow the principles of:

Engaging communities actively in promotion of tourism activities.

- Providing a positive contribution to the economic development of the Soon Valley and the region

a) Khabekki Lake

A design master plan for Khabekki Lake is prepared which capitalizes on the existing potential of the site. The salient features of this design include the following:

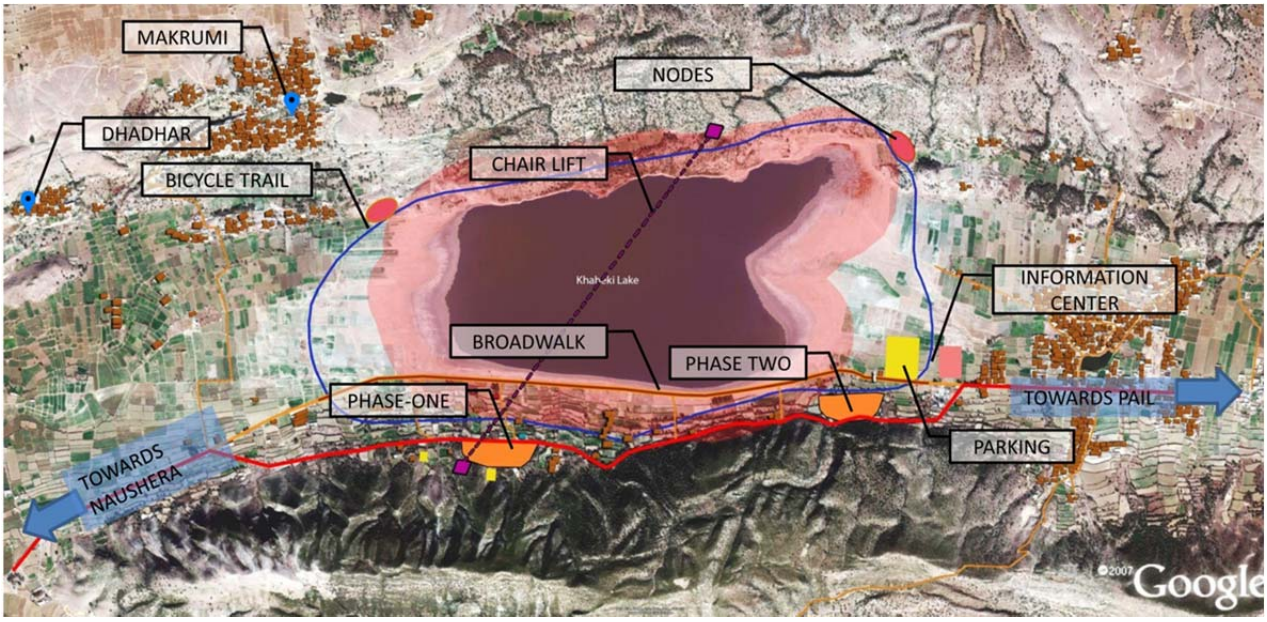
i. The existing interaction of humans with the water is reduced by applying a buffer of 500m around the perimeter of the Lake.
ii. No development activity is proposed within this buffer.
iii. Pedestrian and bicycle paths are proposed around the Lake.
iv. Chalets are proposed at the hills in South of the Lake
v. A chairlift is proposed connecting proposed chalets and the hills on the north side.
vi. A restaurant is proposed on the southern side of the hills near the chairlift station which will provide scenic views of the Lake and surrounding areas.
vii. A boardwalk is proposed on the southern bank of the Lake.
viii. A covered parking and viewing deck is proposed on the south-eastern side.

No development activity is proposed within this buffer.

Pedestrian and bicycle paths are proposed around the Lake.

A boardwalk is proposed on the southern bank of the Lake.

A covered parking and viewing deck is proposed on the south-eastern side.



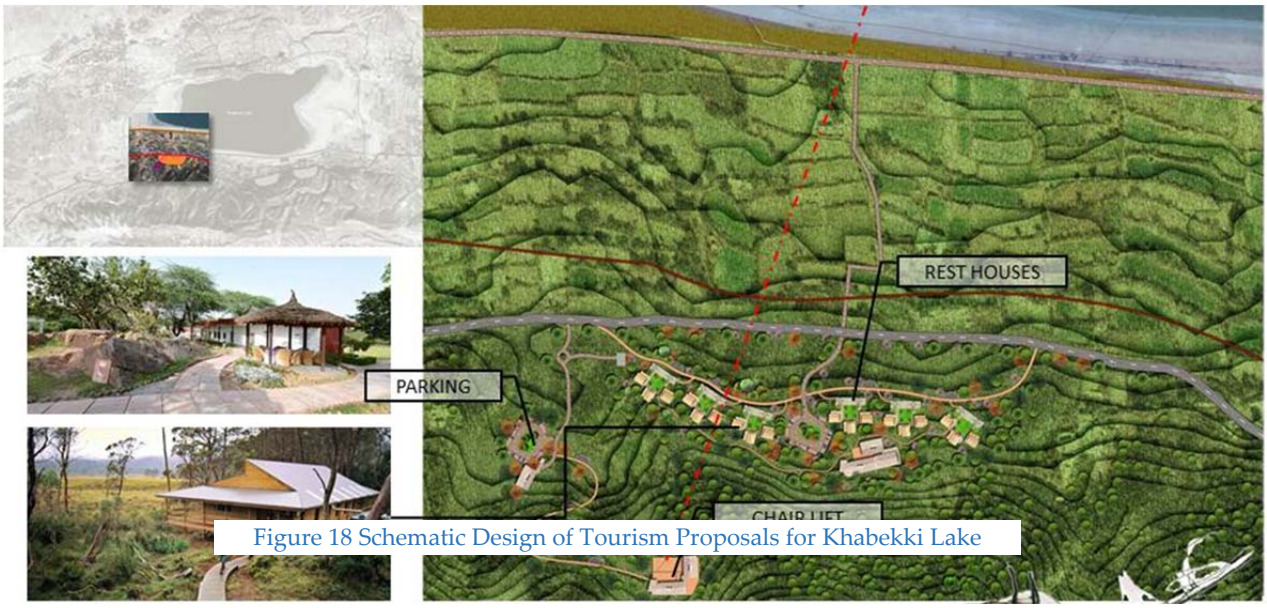


Figure 18 Schematic Design of Tourism Proposals for Khabekki Lake

Figure 19 Schematic Design of Tourism Proposals for Khabekki Lake

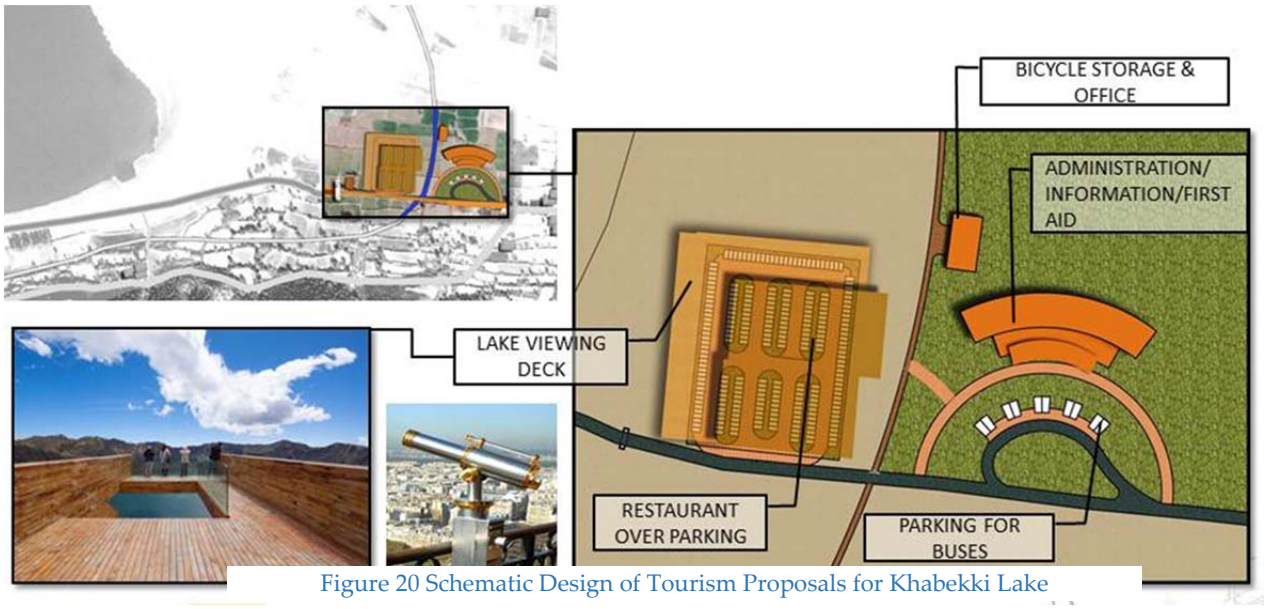


Figure 20 Schematic Design of Tourism Proposals for Khabekki Lake

b) Uchhali Lake Master Plan

The salient features of Uchhali Lake Master Plan include the following:

i. Provision of a board walkway that gives access to the lake in the form of pedestrian dock or boat ramp, and panoramic telescopes.

ii. A bicycle trail that traverses the town, and encourages the trail users to stop and tour the town

iii. An area for community gardens if desired by members of the local community.

iv. Providing recreational facilities such as primitive camping, hiking, walking, bicycling, horseback, etc.

v. Facilities designed for specific recreational purposes, such as human-made pools for swimming

vi. Lake access – viewing and boating.

vii. Environmental education/interpretation

viii. Bird watching, butterfly gardens

ix. Restaurant and chalets on hill providing a

- *Provision of a board walkway that gives access to the lake in the form of pedestrian dock or boat ramp, and panoramic telescopes.*
- *Environmental education/interpretation*
- *Bird watching, butterfly gardens*
- *Restaurant and chalets on hill providing a stunning view of lake*

stunning view of lake

c) Jahlar Lake, Master Plan

Jahlar Lake is one of the most spectacular, picturesque and beautiful lakes in the Soon Valley, due to lack of facilities for tourist, it is losing its value. Keeping in view the falling tourist draw to this location, the Jahlar Lake Master Plan has the following features:

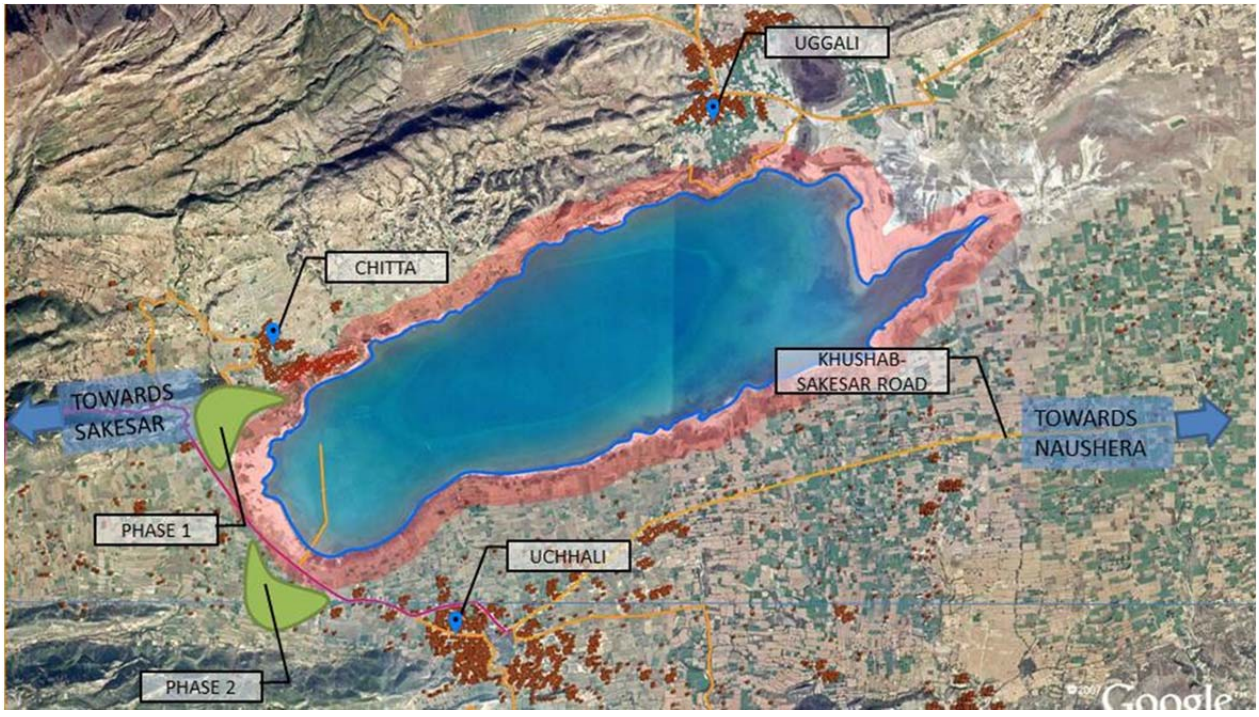
i. Restaurant and chalets at an elevation of 150 feet from lake level with a breathtaking view of the whole valley.

   Park with all facilities, playing areas for children, BBQ areas, camping area, bird watching towers, etc.

ii. Protecting the landscape that is used for tourism activities.

iii. Bicycle trail loops around the lake with views changing with the terrain.

- *Restaurant and chalets at an elevation of 150 feet from lake level with a breathtaking view of the whole valley.*
- *Protecting the landscape that is used for tourism activities.*
- *Bicycle trail loops around the lake with views changing with the terrain.*



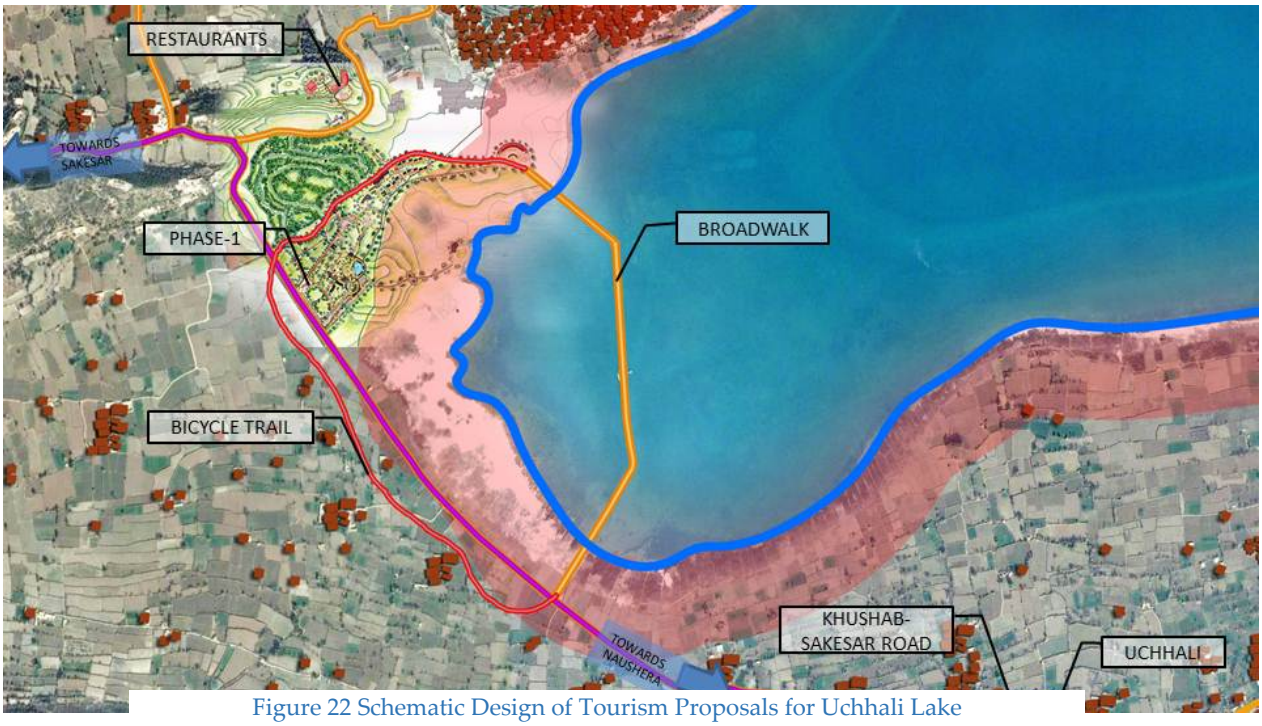


Figure 22 Schematic Design of Tourism Proposals for Uchhali Lake



Figure 24 Schematic Design of Tourism Proposals for Uchhali Lake

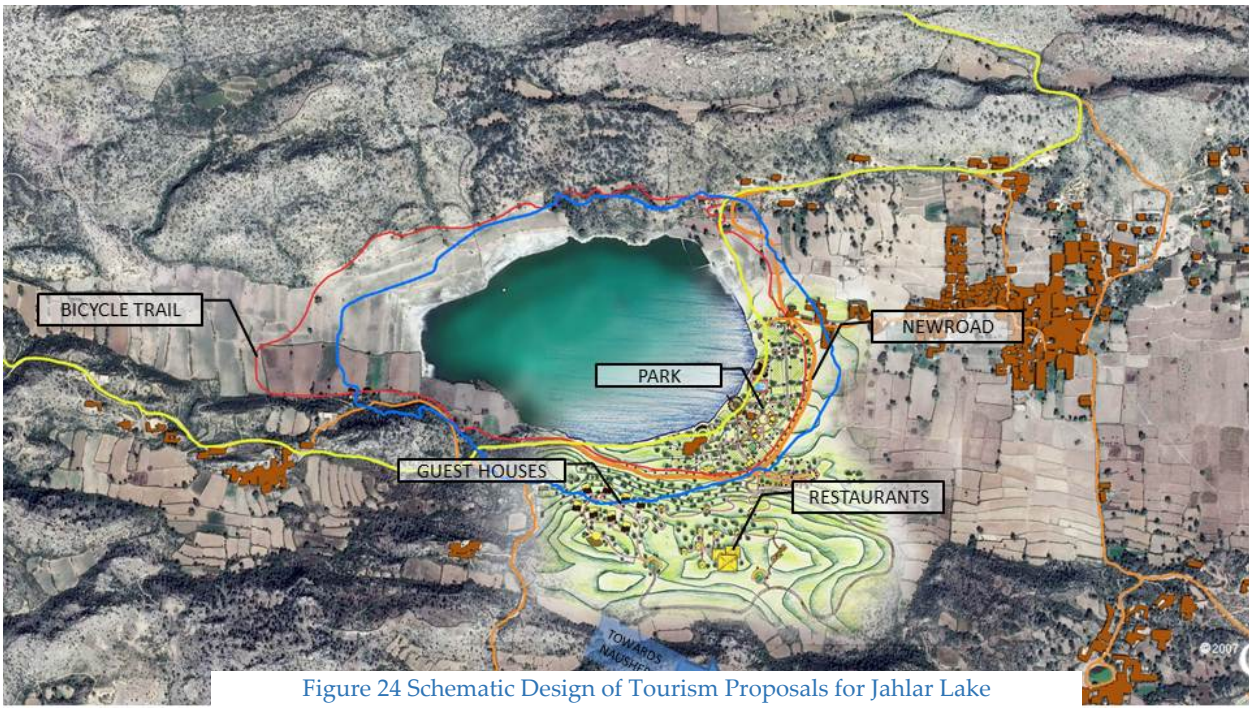


Figure 24 Schematic Design of Tourism Proposals for Jahlar Lake

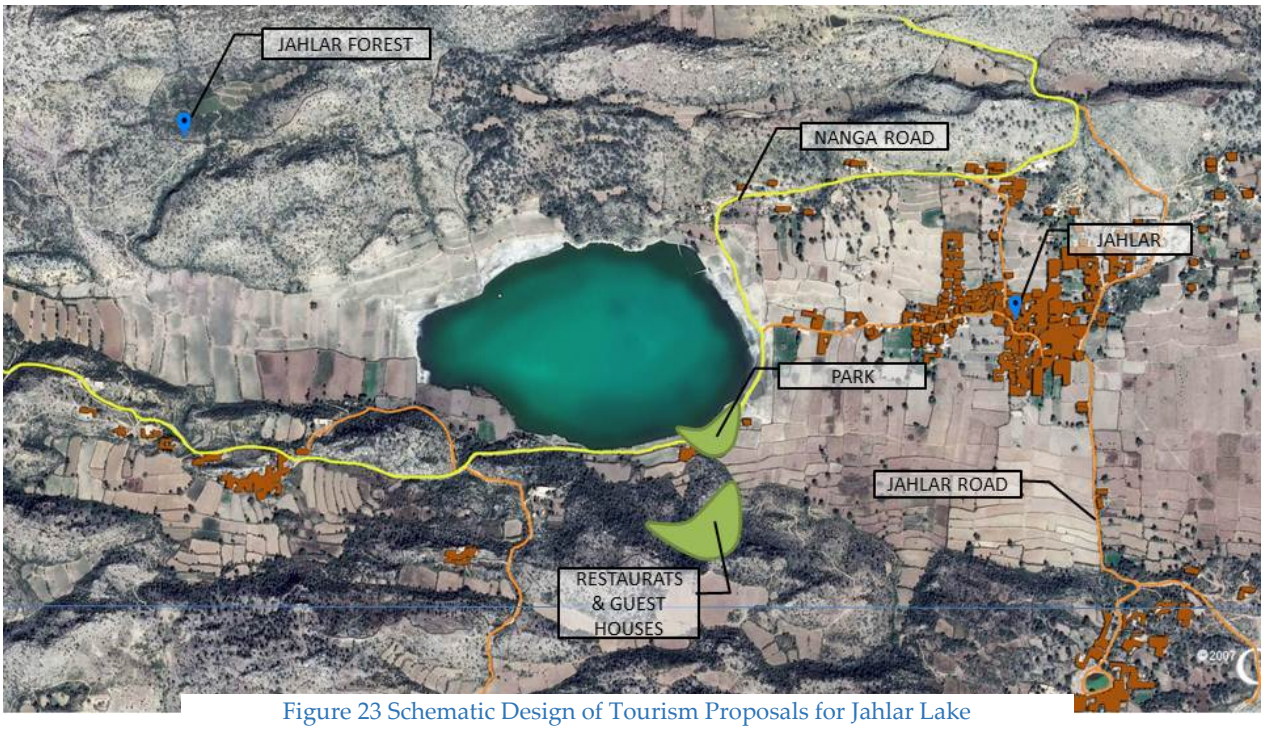


Figure 23 Schematic Design of Tourism Proposals for Jahlar Lake

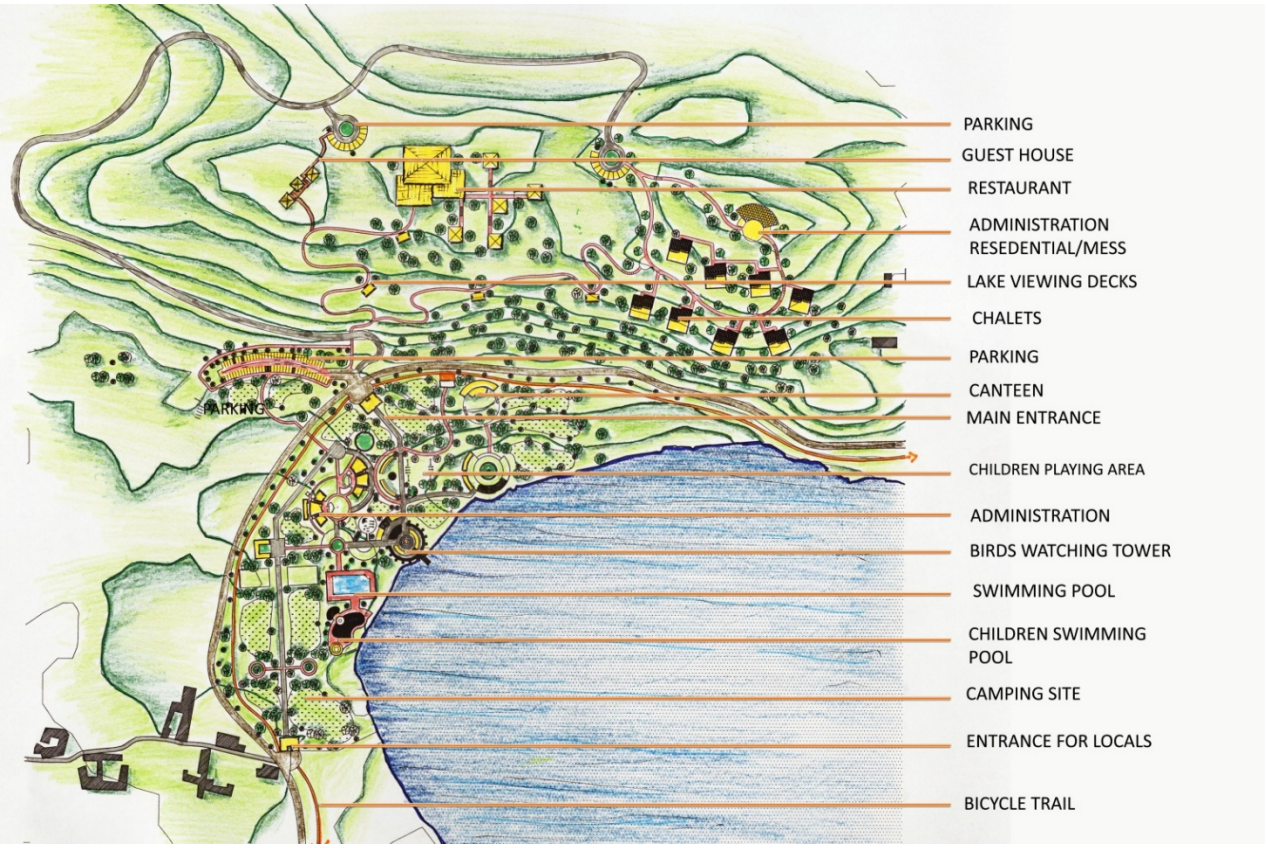
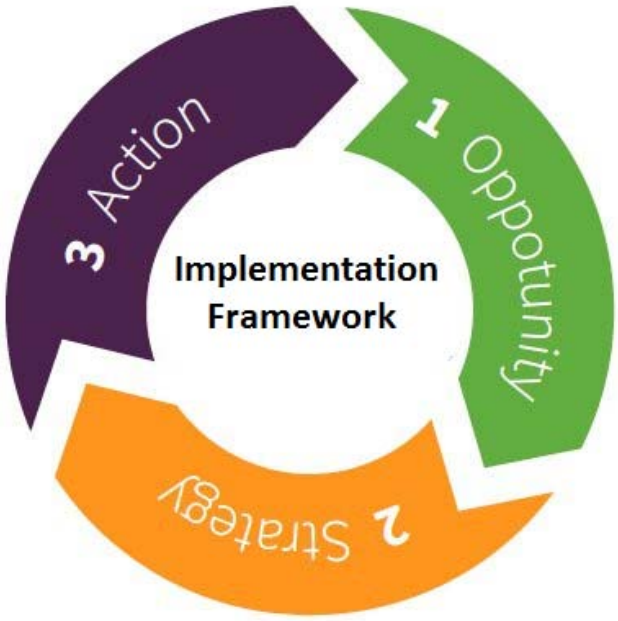


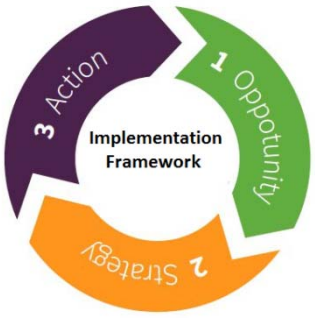
Figure 25 Schematic Design of Tourism Proposals for Jahlar Lake

CHAPTER 8

IMPLEMENTATION FRAMEWORK



8 Implementation Framework



8.1. Key Findings

- The master plans are prepared to guide urban development in most cities. Since, the Soon Valley lies within the administrative boundary of TMA Khushab; the TMA is responsible for any planned effort which results in land use planning, development and control. Whereas, tourism, being, an overlapping sector is, however, the responsibility of Tourism Development Corporation of Punjab. The TDCP is mainly responsible for facilitating tourism planning activities in the Punjab province, and is aimed at:
  i) Promoting and undertaking publicity of tourism products
  ii) Development and management of the tourism industry in the province, and
  iii) Overall development of tourism sector policies, strategies, plans and their implementation in the Punjab.

TDCP aims at:

- *Promoting and undertaking publicity of tourism products*
- *Development and management of the tourism industry in the province, and*
- *Overall development of tourism sector policies, strategies, plans and their implementation in the Punjab.*

- Since, there has not been any planning effort which focuses tourism planning or growth management of land use and environment for Soon Valley; the very sector of tourism, environment and development has largely been neglected. For the current planning exercise which embeds tourism sector development along with the aspirations to preserve the environment and maintaining a sustainable balance between the physical developments of the area is a unique exercise. For the Soon Valley Eco-Tourism Master Plan 2040, the current setup of planning, management and monitoring is incapable, and their progress is unsatisfactory. The relevant departments in the Punjab Province, which may have influence on the tourism, environment and urban development, are:
  i) The Finance Department
  ii) The Local Government and Community Development

iii) Tourism Development Corporation of Punjab (TDCP)
iv) Provincial Highway Department
v) Environmental Protection Department
vi) Housing, Urban Development and Public Health Engineering
vii) Department of Agriculture
viii) Board of Revenue
ix) Communications and Works Department
x) Excise and Taxation Department
xi) Forestry, Wildlife and Fisheries Department
xii) Department of Health
xiii) Industries, Commerce and Investment
xiv) Information and Culture Department
xv) Livestock and Dairy Development
xvi) Mines and Minerals Department
xvii) Planning and Development Department
xviii) Transport Department
xix) Youth Affairs, Sports, Archeology & Tourism Department

- Key entities with a current or potential impact on tourism in the province are as follows:
  i) Eco-Tourism Society of Pakistan
  ii) IUCN Pakistan
  iii) WWF Pakistan
  iv) NRSP
  v) PRSP and
  vi) Several other Community-Based Organizations and NGOs.
- At local government level, the main responsibility of tourism development lies with the Office of the Regional Manager TDCP, Khushab. The Regional Manager is responsible for coordination of various activities including

Key entities with a current or potential impact on tourism in the province are as follows:

- *Eco-Tourism Society of Pakistan*
- *IUCN Pakistan*
- *WWF Pakistan*
- *NRSP*
- *PRSP and*
- *Several other Community-Based Organizations and NGOs.*



project preparation, monitoring and implementation of various tourism related services concerning Soon Valley. He is also responsible for liaison with the various departments of Government of the Punjab.

- The District Government Khushab, Tehsil Municipal Administration Khushab and Chief Officer Unit, Naushera are responsible for planning and development control in the Soon Valley.
- Much of the involvement by the private sector and local communities in the tourism sector takes place at local government level rather than at provincial level
- The role of the above mentioned key stakeholders at various levels of the government is important. However, the role of private sector in driving tourism in the province in general and Soon Valley in specific is also imperative. While communities are also critical to growing tourism potential of Soon Valley and its management at the local level.

8.2. Eco-Tourism Master Plan Implementation Framework

The Soon Valley Eco-Tourism Master Plan will be implemented primarily through activities at the District Government Khushab level and by the support of local communities. The supporting actions are required to be done by various stakeholders within the public and private sector as well by encouraging the community to take an active role in maintaining and sustaining the local environment and tourism. Since at this stage, the development activities are being performed by the District Government Khushab; the TDCP is responsible for the tourism development projects. However, integration is required for this area.

The proposed implementation framework considers provision for the establishment of a Special Master Plan Implementation Unit, which acts as a decision-making authority (administrative component) and a core technical

The Soon Valley Eco-Tourism Master Plan will be implemented primarily through activities at the District Government Khushab level and by the support of local communities.

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The TDCP is responsible for the tourism development projects

However, integration is

team. In the

process, an opportunity is created for the democratization of the traditional institutions of authority and effective environmental management, taking into account local perceptions. It implies that a deliberate effort is made to build up from existing institutions and practices to support a locally appropriate, equitable, and sustainable community-based natural resource management approach, which is supported by a technical cadre.

Table 3: Technical and Administrative Resources to be hired

Designation	Proposed Role
Administration	
DCO Khushab	Chairman
Assistant Commissioner Naushera	Project Director of the Unit
Regional Manager TDCP	Convener/Secretary
District Officer (Finance and Planning)	Member
Chief Officer (CO Unit Naushera)	Member
Elected Representative (MPA)	Member
Elected Chairman of the MC Naushera	Member

Hence, the Consultants propose the following implementation framework:

a) **Creation of a Special Master Plan Implementation Unit:**

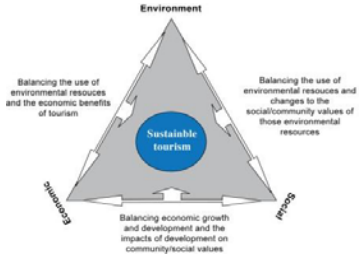
It is proposed to establish a special Master Plan Implementation Unit for the effective implementation of Soon Valley Eco-Tourism Master Plan. The Unit is to be established in the Soon Valley, which is headed by the DCO Khushab.

b) **Constitution of the Master Plan Implementation Unit:**

As the current capacity of the CO Unit Naushera, TMA Khushab and District Government Khushab is very low. It is, therefore, proposed that the constitution of Master Plan Implementation Unit should comprise of the following technical and administrative resources which must be hired for this Unit.

The proposed implementation framework comprises of the following steps:

- *Creation of a spevial master plan implementation unit*
- *Constitution of the master plan implementation unit*



- *It is proposed to establish a special Master Plan Implementation Unit for the effective implementation of Soon Valley Eco-Tourism Master Plan.*
- *The participation of all relevant stakeholders should be promoted and facilitated at all levels of implementation.*
- *Plan at the local level should be supported and encouraged.*

The means of implementation for this Master Plan will include the provision of financial resources by the respective budgetary requirements for various projects implementation and capacity building of the TMA Khushab. The participation of all relevant stakeholders should be promoted and facilitated at all levels of implementation. Initiatives and activities of indigenous and local communities, contributing towards the implementation of eco-tourism activities under this Master Plan at the local level should be supported and encouraged.

Table 4: Technical Core for Implementation of Master Plan

Technical Core		
Designation	**No. of Post**	**Status / Remarks**
Urban Planner	02	Proposed to be hired
Transport Planner	01	Proposed to be hired
Environmental Engineer	01	Proposed to be hired
Tourism Planner	01	Proposed to be hired
Hospitality Manager	01	Proposed to be hired
Municipal Finance Expert	01	Proposed to be hired
Municipal Engineer (SWM)	01	Proposed to be hired
Infrastructure Engineer	01	Proposed to be hired
Disaster Risk Management Expert	01	Proposed to be hired
Social Mobilization Expert	02	Proposed to be hired
Capacity Development Expert	01	Proposed to be hired
GIS Expert	01	Proposed to be hired
GIS Technicians	02	Proposed to be hired
Support Staff	04	Proposed to be hired



Collaborative Effort Towards Strategic Planning

Annexures

Action Plan Matrix

The Action Plan Matrix provides a detailed list of the actions needed to be implemented as part of the Plan. The matrix indicates the type of actions that will be required to implement the policies, and the priority of the actions to be initiated. Officials will need to update this matrix on an annual basis, or as necessary, to keep the responsibilities and actions current.

Sector	Projects	Implementation Period	
		Short Term	Medium and Long Term
Land Use	▪ Encroachment Removal and recovery of right of ways around Takbeer Chowk Naushera, Main Bazar Naushera, Sodhi etc.	√	
	▪ Design and construction of walkways along important roads like Naushera Jabba Road, Sodhi Rod and Sureki Road.	√	
	▪ Incorporation of disaster resilient regulation into building bye laws while promoting sustainable in the light of proposals given engaging Punjab Urban Unit, NDMA, PDMA and / or any other technical assistance from UN agencies.	√	
	▪ Construction of new RESCUE 1122 centers, Model Police Station, Fire Service, Municipal Services Center, and Tourist Information Center in Municipal Complex and a Trauma Center in THQ Naushera.	√	
	▪ Installation of security surveillance network	√	
	▪ Development of Project Area Entrance Points	√	
	▪ Delineating, declaring and conserving Urban Forests as suggested in land use proposals and initiating projects to promote nature lodging and trekking in these precincts		√
	▪ Declaration and Rehabilitation of heritage sites mentioned above to promote heritage tourism.		√
	▪ Standardization for hospitality design at every level from kiosks to hotels and lodges.		√
	▪ Campaigns to attract investments in Tourism support infrastructure		√
	▪ Construction of state-of-the-art hospital to promote medical tourism.		√
	▪ Land Use Plan of Naushera		√

Sector	Projects	Implementation Period	
		Short Term	Medium and Long Term
	▪ Regenerating inner areas of Naushera, Khabekki and Uchhali		√
Transport	▪ Construction of bus stops	√	
	▪ Construction of bus terminal	√	
	▪ Rationalize bus routes in Soon Valley	√	
	▪ Usage of print & electronic media to promote walkability and sustainability agendas	√	
	▪ Regular maintenance of all primary, secondary and tertiary road network as proposed.	√	
	▪ Traffic signs improvement and installation of traffic mirrors on Khushab-Sakesar Roads	√	
	▪ Installation of safety fence/grills on slope of every road	√	
	▪ Improvement of tourist sites leading to Chanbal Mandir, Jahlar Lake and Ambh Sharif etc.	√	
	▪ Resurfacing of the following roads vi) Sodhi to Naushera Road vii) Naushera to Khushab Road viii) Naushera to Sakesar Road ix) Naushera to Jahlar Road		√
	▪ Soil stabilization along all right of ways to prevent slope failures i. Using proposed bio-engineering techniques on priority basis.		√
	▪ Enhancement of administrative capacity of DO Roads		√
	▪ Introducing regulation like traffic laws, community / traffic policing, fines, flow regulations and management practices through geometry.		√
	▪ Preparation of Pedestrianization plan of main bazar road Naushera		√
	▪ Introducing Tourist Bus to be operated in the entire valley (M&L)		√
	▪ Provision of Shuttle Service from Kalar kahar to Naushera		√
r o n	▪ Banning of open dumping of waste in Soon Valley	√	

Sector	Projects	Implementation Period	
		Short Term	Medium and Long Term
	▪ Provision of littering bins for all homes and commercial areas such as shops and offices etc.;	√	
	▪ Pursuing hotels/shop owners to have separate waste collecting bins/bags for recyclable (paper, glass etc.) and non-recyclable waste;	√	
	▪ Purchase of pickups (with covering facilities of waste) for improving waste-collecting capacity of CO Unit Naushera	√	
	▪ Increase in daily sweeping of main roads, lanes, markets by recruiting extra sweepers with gradual shift to mechanical sweeping	√	
	▪ Provision of covered, metallic containers (4 cum3) for areas without temporary storage facilities at regular distance along main roads.	√	
	▪ Purchase of 2-3 5 cum waste collecting/transporting trucks	√	
	▪ Purchase of vehicles for supervisory staff	√	
	▪ Gradual imposition of fines/administrative charges against public littering and open dumping of waste		√
	▪ Purchase of a long boom drain cleaning machine for mechanical cleaning of drains.		√
	▪ Imposition of waste collection fees/taxes on major uses (primarily located in Naushera) such as: building contractors, hotels and homes to meet financial requirements of an appropriate solid waste management system		√
	▪ Gradual introduction of 'Polluter Pays Principle' in solid waste management		√
	▪ Phase-wise implementation of 5R hierarchy of waste management; Reduce, Reuse, Recycle, Recover and Residual management.		√
	▪ Launching of a community involvement/awareness plan to increase efficiency of solid waste management programs,		√
	▪ Installation of an Integrated Waste Processing Plant near Expressway. It may convert solid waste into compost, eco bricks and green pellets,		√

Sector	Projects	Implementation Period	
		Short Term	Medium and Long Term
	▪ Identification and development of a landfill site for non-processed waste,		√
	▪ Disposal of hospital waste in a scientific manner		√
	▪ Involvement of private sector in solid waste management plans to decrease financial burden on the government		√
	▪ Establishment of a solid waste management monitoring/research cell.		√
	▪ Change unique habitat areas (e.g; Punjab Urial in Kalyal) into special enclosures for wildlife species with greater protection from poaching, hunting etc.	√	
	▪ Strengthen concerned departments for their capacities to conserve biodiversity	√	
	▪ Celebrate a forest/biodiversity conservation week in Soon Valley on yearly basis to create awareness among tourists and general public.	√	
	▪ Establishment of a center for documentation and analysis of changes in biodiversity of the area		√
	▪ Develop and adopt Biodiversity Action Plans for all natural areas.		√
	▪ Protection of native plants from overharvesting and cutting		√
	▪ Initiation of a research program/centre to evaluate the effects of climate change on local environment, flora and fauna.		√
	▪ Develop and adopt a landscaping Local Planning Policy to require native tree plantings in public spaces for residential subdivisions and industrial developments.		√
	▪ Creation of a Soon Valley Forest/Biodiversity Advisory Board including representative from all stakeholder groups to advice on forest/biodiversity related issues.		√
	▪ Develop a restoration and management plan for priority biodiversity corridors.		√
	▪ Afforestation of badly deforested areas with artificial sowing and planting with suitable indigenous and exotic species	√	

Sector	Projects	Implementation Period	
		Short Term	Medium and Long Term
	▪ Provision of fencing and other suitable protective facilities to protect high-value forest areas,	√	
	▪ Improvement and maintenance of boundaries of forests (repair/construction of boundary pillars),	√	
	▪ Clearing of plant-parts/pine-needles along roads/pedestrian paths in dry summer months to decrease the chances of forest fires,	√	
	▪ Plantation of trees along roads/channels in settlements to create green corridors,	√	
	▪ Provision of training and necessary equipment to the forest department to increase its capacity for forest fire control.	√	
	▪ Regular scientific studies of forests in Soon Valley to monitor any negative (disease attack, fires, illegal cutting) and positive (reforestation),		√
	▪ Vacation of encroached forests and development of these vacated areas into fresh forest settlements,		√
	▪ Strengthening of forest department in terms of trained staff, latest equipment and infrastructure.		√
	▪ Study of possible effects of climate change on forests		√
	▪ Introduction of new forest management programs such as REDD+ to conserve forests as per the international standards.		√
	▪ Identification of the areas prone to greater chances of soil erosion/land sliding,		√
	▪ Re-vegetation of certain areas in Soon Valley with suitable grass and herbaceous species,		√

Sector	Projects	Implementation Period	
		Short Term	Medium and Long Term
	▪ Ban on removal of trees/plants from slopes, road verges		√
	▪ A pilot project to assess the suitability of bio-engineering techniques for erosion control and land sliding,		√
	▪ Establishment of hedges along crop fields/roads to control soil erosion		√
	▪ Terracing of crop fields		√
Infrastructure	▪ Immediate replacement of all existing worn out exposed water and sewerage lines and burying it as per standard design parameters.	√	
	▪ Adding more infrastructure specially water lines to all the areas which have been left out of service area in Sodhi, Uchhala, Kalyal, Mardwal, Chambal, etc.	√	
	▪ Provision of street lamps and decorative illumination.	√	
	▪ Design and construction of a comprehensive integrated system for the collection of sewage water from every building parcel is to be initiated on top priority. This system must be further coupled with primary level treatment facility and treated volume further may be supplied to rural inhabitants down the slopes through gravity to irrigate their agriculture holdings.	√	
	▪ Proper design/construction of runoff drain systems to collect and use runoff water for recharge from different pavements without letting it go unused into sewage. Recharge soak pits/bore wells intended to be constructed at designated intervals along major roads on suitable places to boost evenly	√	

Sector	Projects	Implementation Period	
		Short Term	Medium and Long Term
	distributed sub-surface aquifer recharge.		
	▪ Preparation of water usage guidelines to local as well as transient population to promote water usage efficiency and conservation at large.	√	
	▪ Rain water harvesting techniques should be explored and made compulsory as a part of building regulations as well.	√	
	▪ Design and construction of small reservoirs on rain water drains especially near Kufri and Kalyal. Water volume stored in such reservoirs may be filtered/treated and further supplied to meet the irrigation needs of downstream rural inhabitants of Kalyal Sharif, Kufri and Angah villages.	√	
	▪ Enhancing telecommunication/mobile communication infrastructure to meet the need for at least early 5 years of plan period.	√	
	▪ Management & planning of water source, supply, and distribution over plan period.		√
	▪ Management & planning for sewage collection, treatment and disposal system over plan period.		√
	▪ Management & planning for all physical and social infrastructures such as: public buildings, offices, schools, hospitals, mosques, emergency services, buried/exposed infrastructure and road network.		√
Tourism	▪ Dedicated website regarding tourism	√	
	▪ Development of pedestrian and bicycle paths at Khabekki Lake, Uchhali and Jahlar	√	
	▪ Development of Chalets in the south of Khabekki lake	√	

Sector	Projects	Implementation Period	
		Short Term	Medium and Long Term
	▪ Construction of chairlift connecting proposed Chalets and the hills on the north side of Khabekki lake	√	
	▪ Tourism Information Center to be established at Pail and Naushera Town	√	
	▪ Installation of tourism signage at various points of Soon Valley	√	
	▪ Development of (board walk?? Is it broad walkway?)on the southern bank of the Khabekki lake, Uchhali and Jahlar Lake	√	
	▪ Development of restaurant in the southern side of the hills near the chairlift station of Khabekki Lake and Uchhali Lake.		√
	▪ Construction of parking on the south-eastern side of Khabekki Lake and Uchhali Lake as proposed in schematic designs.		√
	▪ Tourism information counters to be established at all tourist points such as Khabekki Lake, Uchhali Lake, Jahlar Lake, Kanhatti Garden etc.		√
	▪ Rehabilitation of important tourist sites like Ambh Sharif, Sodhi Rest House and Deep Sharif etc.		√

Proposed Land use Control Matrix

Land use Category	Type of Development / Land Use Class	Compliance																	
		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
Residential/Lodging & Ancillary Use	Exclusive self-owned or self-used residential houses & lodges	√			√			√			√		√	√					√	√
	Residential houses & lodges rental	√			√	√		√			√		√	√					√	√

Land use Category	Type of Development / Land Use Class	Compliance																	
		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Exclusive self-owned or self used residential apartment buildings	√			√	√			√		√		√	√			√	√	√	√
	Rental residential apartment buildings	√				√			√		√		√	√					√	√

Land use Category	Type of Development / Land Use Class	Compliance																	
		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Houses schemes/land subdivisions (public/private sector with standardized facilities	√			√		√		√		√		√		√	√	√	√	√	√
	Mixed use commercial cum residential	√				√			√				√	√		√	√	√	√	√
	Guest Houses etc.	√			√	√		√		√		√	√		√	√	√		√	√

Land use Category	Type of Development / Land Use Class	Compliance																	
		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Pharmacy & drug store	√		√		√		√		√			√	√						√
	Day care center	√			√	√		√		√		√	√	√						√
	Preschool uses (kindergarten & nurseries	√			√		√		√		√		√	√			√			√
Hospitality	Hotel	√			√	√		√			√		√		√		√	√		√
	Motels	√			√	√		√			√		√	√		√	√	√	√	√
	Inns	√			√	√		√			√		√	√		√	√	√	√	√
	Resorts or Tourist Homes	√			√	√		√		√			√	√		√	√		√	√

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		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Cafés & Bars	√		√		√		√		√			√	√		√	√	√	√	√
	Restaurants	√		√						√				√		√	√		√	√
Community Facilities	Nursing Homes	√			√	√			√		√		√	√		√	√	√	√	√
	Private Hospitals	√			√	√			√		√		√	√		√	√	√	√	√
	Government Hospital		√	√		√		√			√		√	√		√	√	√	√	√
	Health Clinics (Government)	√		√		√		√			√		√	√		√	√	√	√	√
	Health Clinics (Private)	√		√		√		√			√		√	√		√	√	√	√	√

Land use Category	Type of Development / Land Use Class	Compliance																	
		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Emergency Response Centers	√		√		√		√			√		√	√		√	√	√	√	√
	Masjid	√		√		√			√		√		√	√		√	√		√	√
	Religious Institute (Madrissa)	√		√		√			√		√		√	√		√	√	√	√	√
	Church	√		√		√			√		√		√	√		√	√	√	√	√
	Other places of worship	√		√		√			√		√		√	√		√	√	√	√	√
	Government Offices		√		√	√			√		√		√	√		√	√	√	√	√
	Multiuse Sports Hall		√		√	√		√			√		√	√		√	√	√	√	√

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		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Multiuse Community Hall	√			√	√			√		√		√	√		√	√	√	√	√
	Boarding Houses		√		√	√			√		√		√		√	√	√	√	√	√
	Museum / Art Gallery etc.		√		√	√			√		√		√		√	√	√	√	√	√
	Library		√		√	√			√		√		√		√	√	√	√	√	√
	Tourist Information Center		√		√	√		√			√	√			√	√	√		√	√

Land use Category	Type of Development / Land Use Class	Compliance																		
		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Public Toilets & Drinking Water Points		√		√	√		√			√		√	√				√		√
	Police Station	√			√	√			√		√		√	√		√	√	√	√	√
	Rescue & Fire Station	√		√		√		√			√	√		√		√	√	√	√	√
	Private Offices		√		√	√			√		√		√		√	√	√	√	√	√
	Post Office		√		√	√			√		√		√		√	√	√	√	√	√
	Court / Tribunal		√		√	√			√		√		√		√	√	√	√	√	
	Health Club / Gymnasium		√		√	√			√		√		√		√	√	√	√	√	√

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		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Social & Community Club	√			√		√		√		√		√	√		√	√	√	√	√
	Graveyards & Burial Grounds		√		√	√			√		√		√	√		√	√	√	√	√
Commercial & Retail	Mohallah Level Retail Shops	√			√		√		√		√		√		√	√	√		√	√
	Commercial cum Residential	√			√	√			√		√		√		√	√	√	√	√	√

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		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Service Shops	√		√		√		√			√	√				√	√	√	√	√
	Bakery / Confectionary	√			√	√			√		√		√		√	√	√		√	√
	Private Offices & Business Facilities		√	√		√			√		√		√		√	√	√	√	√	√
	Financial Institutions		√		√	√			√		√		√		√	√	√	√	√	√
	Fashion & Clothing Stores	√			√	√			√		√		√		√	√	√	√	√	√

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		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Fast Food Outlets & Eateries	√			√	√			√		√		√		√	√	√		√	√
	Building Material & Hardware Stores	√		√			√		√		√		√		√	√	√		√	√
Parks and recreational	Neighborhood level parks and playgrounds	√			√	√			√		√		√	√		√	√	√	√	√
	Hiking trek and trails		√		√		√	√		√			√		√	√	√	√	√	√

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		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Camping grounds		√		√		√	√		√			√		√	√	√	√	√	√
	Tourist parks		√		√		√	√		√			√		√	√	√		√	√
	Pocket parks		√		√		√	√		√			√		√	√	√		√	√
	Parks and opens spaces	√			√	√		√		√			√	√		√	√		√	√
	Local recreational uses	√			√	√		√		√			√	√		√	√	√	√	√
	Zoo or wildlife park		√		√		√	√		√			√		√	√	√		√	√
	Indoor games	√			√	√		√		√	√		√	√		√	√	√	√	√

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		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Cinema theatres		√		√	√			√		√		√		√	√	√	√	√	√
	Hotels, motels and similar lodging		√		√	√			√		√		√		√	√	√	√	√	√
educational	Govt. schools	√			√		√		√		√		√	√		√	√	√	√	√
	Private schools	√			√		√		√		√		√	√		√	√	√	√	√
	College and higher degree institutes	√			√		√		√		√		√	√		√	√	√	√	√

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		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
Transportation	Intercity bus terminal		√		√	√			√		√		√		√	√	√	√	√	√
	Local transit station		√	√		√			√		√		√		√	√		√	√	√
	Freight terminal		√	√		√			√		√		√		√	√	√	√	√	√
	Taxi stand		√	√		√		√			√		√		√	√		√	√	√
	Surface parking		√	√		√		√		√			√		√	√	√	√	√	√
Infrastructure	Solid Waste Transfer Station		√	√			√		√		√		√	√		√	√	√	√	√

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		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Sewerage Treatment Plant		√	√			√		√		√		√		√	√	√	√	√	√
	Water Treatment Reservoir	√		√			√		√		√		√		√	√	√	√	√	√
	Electricity grid station		√		√		√		√		√		√		√	√	√	√	√	√
	Electricity substation		√		√		√		√		√		√		√	√	√	√	√	√
	Communication towers		√		√	√			√		√		√	√		√	√	√	√	√

Land use Category	Type of Development / Land Use Class	Compliance																		
		Future Residential Zone		Light Manufacturing Zone		Commercial District		Tourism & Hospitality District		Green and Parks		Heritage		Rural/ Suburban		EIA	TIA	SIA	Energy Audit	Building Regulations
		Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited	Permitted	Prohibited					
	Cable car and ropeway system		√		√	√		√			√		√		√	√	√	√	√	√