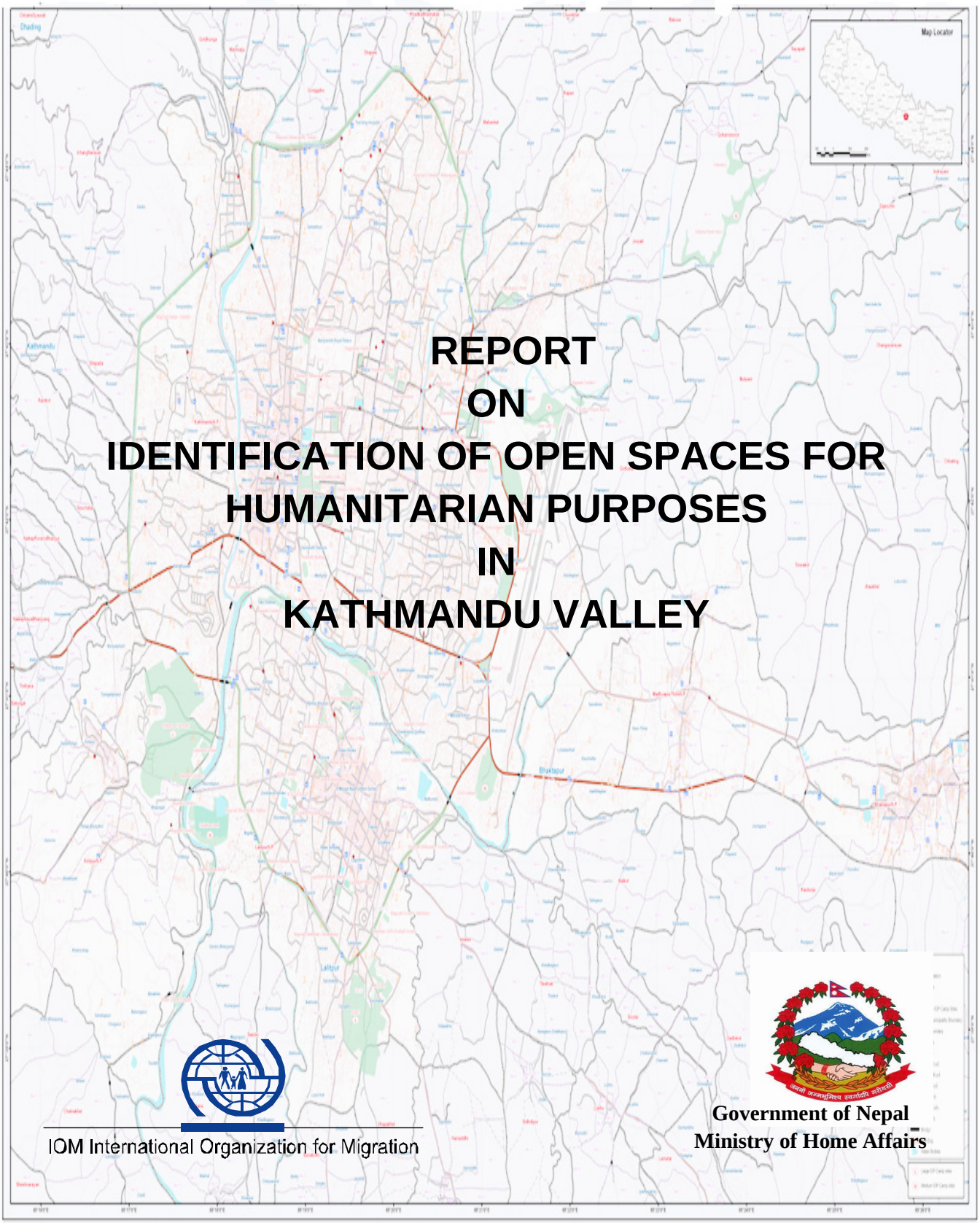


REPORT
ON
IDENTIFICATION OF OPEN SPACES FOR HUMANITARIAN PURPOSES
IN
KATHMANDU VALLEY

IOM International Organization for Migration

Government of Nepal
Ministry of Home Affairs

Executive Summary

Kathmandu is at high risk of a major earthquake. The estimated population of 3.5 million living in the confines of the Kathmandu Valley along with the high number of sub-standard buildings means that a major earthquake [9 on the Richter Scale] will have disastrous consequences for Kathmandu residents. It is expected that the earthquake could leave 40,000 dead, between 100,000 - 200,000 injured, 60% of buildings destroyed, and between 600,000 - 900,000 left homeless.

Under the overall leadership of Ministry of Home Affairs (MoHA) the International Organisation for Migration (IOM) as lead of the Camp Coordination and Camp Management (CCCM) cluster, undertook a study to identify open spaces within Kathmandu which could be used for humanitarian purposes in the event an earthquake occurred. These identified sites are yet to be assigned a humanitarian purpose following the disaster event.

The Sphere Project, led by the Red Cross / Red Crescent Society with a range of Humanitarian Non-Government Organizations (NGOs), developed a Humanitarian Charter and a set of minimum standards in disaster response. Given the large numbers of expected IDPs and scarcity of vacant land in close proximity to Kathmandu it may not be possible to establish camps which contain all the facilities ideally located within a camp site.

The study recommends that where applicable schools be used for reception centers where IDPs may assemble for the placement process to begin. Apart from registration it is recommended that the reception centers provide emergency first aid and emergency shelter. In this regard the schools could be regarded and managed as assembly centers as well as registration centers.

The location for some assembly centers have been identified, however additional assessment of the viability of these facilities needs to be conducted before they can be officially declared assembly centers able to accommodate IDPs.

Three levels of camps have been identified in, and around Kathmandu – large, medium and small. Large camps have been defined as those that could accommodate 30,000 – 90,000 in covered living accommodation. Two large areas holding up to 118,051 together have been identified as being suitable for long term camps, with provision of some of the site services provided within the camps. Medium camps have been defined as those that could accommodate 20,000 – 45,000 in covered living accommodation. Six medium camps have been identified holding up to 286,908 people. Small camps have been defined as those that could accommodate 1,000 – 20,000 in covered living accommodation. 75 small camp sites, which could hold up to 387,739 people, have been identified. The occupancy is based on the provision of covered living accommodation only but the density of the camps will mean detailed consideration will need to be given to other camp functions, particularly WASH, cooking, and security to ensure the health and safety of camp occupants.

In total it is anticipated that 792,698 IDPs can be accommodated in the vacant land in and around Kathmandu in very crowded conditions. The density of the camps may pose significant challenges for the provision of water, sanitation, and hygiene (WASH), food distribution and security. Water emerged as the most critical of the planning factors. In the event of an earthquake it is expected that 95% of water pipes could be destroyed and pumping capacity reduced by half. Using Sphere Standards of 15 liters per person per day, 13.5 million liters per day would be required for the IDPs. Additional water would be required for the rest of the population. A UNICEF project has established five deep tube wells in the Lalitpur District in preparation for a potential disaster. This study recommends that additional deep tube wells be established after appropriate technical advice is received that the wells would survive an earthquake.

In addition while the report details Sphere Standards to determine capacity, other options that may reflect a realistic first response capacity requirement has also been included.

Introduction

Nepal has a very high risk of seismic activity and is ranked as the eleventh most at risk country with Kathmandu rated as the highest at risk city in the country. The number of casualties, injured and displaced persons from an earthquake could vary considerably depending on magnitude of the earthquake. Regardless, with an estimated population of up to 3.5 million combined with poor construction standards for infrastructure means that a major earthquake [9 on the Richter Scale] would have very serious impact on the residents of the Kathmandu Valley. Studies indicate that an earthquake of this magnitude could leave 40,000 dead, between 100,000 - 200,000 injured, 60% of buildings destroyed, and between 600,000 - 900,000 homeless.

Within the framework of Inter Agency Standing Committee (IASC), IOM has assumed the responsibility of cluster lead for Camp Coordination and Camp Management (CCCM) in Nepal. The organization works closely with other cluster leads; such as the Water, Sanitation, and Hygiene (WASH) cluster, the Health Cluster, the Food Security and logistics clusters and the Emergency Shelter cluster.

In partnership with MoHA, IOM undertook this study as a preparedness initiative from the CCCM cluster for an eventual earthquake in Kathmandu. The study intends to provide necessary inputs to the Government of Nepal, other clusters leads within the IASC and the humanitarian community for planning and preparedness for mitigating an eventual disaster.

The report broadly covers GIS information on potential sites, facilities available around these sites, types of camps that can be established (from spontaneous camps, near destroyed houses to large areas that, if desired, could be used for Sphere Standard Camps) and the need for other facilities such as water, sanitation, hygiene and security concerns. It is hoped that the findings from this report would be useful for the other clusters in their planning and management.

Objective and Purpose of the Study

The primary objective of this study was to identify open areas in and around Kathmandu to be used for humanitarian purposes in case of a high magnitude earthquake. There is a need to plan for the accommodation of up to 900,000 IDPs and to highlight the main planning considerations of accommodating this number.

The purpose of the study is to enhance the preparedness of the GoN and international agencies for an earthquake and, by so doing, reduce the adverse consequences that may follow.

Methodology

The methodology consisted of two parts.

Secondary sources were used to establish a benchmark for the study. Sphere Camp standards were used as the baseline for planning. A literature review was conducted to understand the work that had already been conducted and a map reconnaissance was undertaken to identify likely areas for IDP camps.

Primary sources of information collection included visiting the locations for first hand observation, examining the available physical facilities in the area and assess potential issues that might impact the implementation. Consultations with relevant GoN agencies and humanitarian community were also undertaken to introduce the stakeholders to the study and to obtain supporting information.

In view of accommodating the potential number of IDPs (approximately 900,000) within the available space, it is assumed that a lot of compromises in terms of standards and best practices would need to be made.

Planning Parameters

Under normal circumstances, basic infrastructure facilities within Kathmandu Valley are overstretched. The situation will be exacerbated in the event of a major natural disaster such as an earthquake. The number of IDPs and the lack of available space mean that those displaced from their homes will be accommodated in camps that do not have the full range of facilities.

Expected Behavior of Internally Displaced Persons

The scene immediately after an earthquake is likely to be chaotic. People will instinctively seek assistance from the GoN and other agencies.

It is anticipated that the homeless would use the full range of shelter including repairing their own homes, creating makeshift shelters, being billeted by friends and family, creating self settled camps, moving to planned camps, or seeking shelter in planned and unplanned assembly centers[1].

Reception Centers: The identification of readily recognizable registration centers would be key element for the coordination of the recovery efforts after an earthquake. It is expected that the following functions would be conducted at the Reception Centers:

- A meeting place for family members who become separated during the emergency.
- Initial registration of essential personnel.

[1] International Organization for Migration, April 2009, Contingency Plan for Camp Coordination and Camp Management (CCCM), Annex 2, p 12.

- Immediate first aid.
- A coordination area to move people to planned camps.
- Emergency shelter provided to those who are unable to move to larger planned camps. In this regard the reception centers can be seen as camps although it is unlikely that they will have the full range of facilities and standards associated with planned camps.

Recommendation: It is recommended that (retrofitted) schools be earmarked as possible reception centers.

Unplanned Camps

Camps At or Near Homes: - Experience elsewhere suggests that people remain at, or near their homes even after the occurrence of a natural disaster such as an earthquake. Some will live in their partly damaged houses. Others will make a temporary shelter near their destroyed homes. Others will be billeted with host families (family or friends).

Spontaneous Camps: - Despite the desire to remain near their homes the magnitude of the destruction after an earthquake would mean that many IDPs would self settle into camps. It can be expected that many spontaneous camps would be established and to a large degree it would be difficult to plan to support this type of camps. However, it is possible to anticipate that open public space would be natural collection points and camp sites and it is possible to plan for IDP use of these spaces.

Planned Camps

For purposes of this study, planned camps, which will be expected to accommodate potential IDPs, have been categorized into four – collection centers, small, medium and large camps.

Collection Centers: - The study has identified 21 (pre-existing structures) envisaged to serve as potential collection centers. However, the suitability for their use post earthquake is yet to be determined. The list of potential Collection Centers is in Appendix 4.

Recommendation: The Department of Urban Planning and Building Construction assess the suitability of the potential sites, and other sites, for use as collection centers in the event of an earthquake. If suitable sites are identified then deep tube wells be established at these sites.

Small, Medium and Large Camps.

Key Elements:

- **Small Camps** - Located on smaller blocks of land. Planning is based on only providing covered living accommodation with other camp functions outside the camp site.

- **Medium Camps** - Located on larger blocks of land. Planning is based on only providing covered living accommodation with other camp functions outside the camp site. The high density of camps will put pressure on other camp functions especially the provision of water and security and on WASH and food security.
- **Large Camps** - Located on two large blocks of land at Tribhuvan University and the National Agricultural Research Center. The potential large numbers at these camps mean that some other camp functions, especially WASH functions, need to be located within the camp.

In identifying potential camps the following considerations were made:

- Only cleared areas were identified. It is assumed that built up areas will largely be unusable after an earthquake as buildings will have collapsed. The displaced persons would need to be settled outside the built up areas.
- Only areas within Government control, or controlled by institutional or commercial entities, with whom the Government could enter into an agreement were considered.
- Areas of national importance (such as the Former Palace) or those identified as critical during an emergency (Singha Durbha or Police and Army Barracks) were not considered as suitable camp locations.
- Only areas that could accommodate more than 1,000 people were considered. It is assumed that areas smaller than this would be sites for self settled camps and that camp management efforts would be better spent supporting camps of larger size.

Each site has features that impact on camp planning and these are described in the report. The aspects covered include:

- **Special Features of the site** - this describes features unique to the site which are important to camp planning. For example some camp sites are close to water or have an integral water supply.
- **Significant features near the site** - these include hospitals (provision of medical support), schools (potential registrations centers), police stations (assistance with law and order and traffic control for the camps), and nearby water.
- **Implementation Issues** - a broad assessment of the key factors of using the site as a camp.
- Ownership - the type of ownership impacts on the type of relationship the Government will have with the owner of the land.
- **Security** - security is likely to be a key issue in high density camps. Existing security features are explained as these will assist with camp management.
- **Accessibility** - accessibility is a critical factor for camp planning. Many open areas have restricted road access which impacts on the establishment of the camps, movement of IDP to the camps, and the supply of food and other camp necessities.
- **Gradient** - this section describes the gradient which impacts on the available space for covered living accommodation and its drainage capacity.
- **Soil type** - this section describes the soil type which influences the suitability of the camp, particularly in the monsoon.

- **Trees and Vegetation** - this section describes the trees and vegetation which impact on the available space for covered living accommodation.
- **WASH Facilities** - this section outlines the magnitude of the WASH facilities needed to support the expected numbers in the camps.

Camp Standards – A Realistic Approach

Sphere Standards - The Sphere Project outlined the Humanitarian Charter and set minimum standards in disaster response[2]. The standards include spaces that should be made available for camp functions such as accommodation, cooking, hygiene, agriculture and schools. The total area required for all camp functions is 45 square meters per person. While this should remain the objective for camp density, it is duo important that the humanitarian community be prepared for a higher influx of IDPs immediately following the disaster.

Available Space – Preliminary assessment of available space within or near Kathmandu indicates a deficiency in accommodating potential IDPs in conformity with sphere standards. Therefore the planning consideration used for this study is that available open space within or near Kathmandu will be used only for covered living accommodation. The Sphere standard for covered living accommodation is 3.5 square metres per person.

High Density Camps -The application of a 3.5 square meters per person standard, while necessary to accommodate the expected number of IDPs, poses significant challenges for other camp functions, especially WASH facilities and cooking, which would need to be in the areas immediately surrounding the open spaces.

Two large areas are in close proximity to Kathmandu - Tribhuvan University and the National Agriculture Research Center. Due to the size of these areas it is not realistic to have a density of 3.5 square meters per person as this would place too much pressure on other camp functions, especially WASH and cooking. For this reason a planning figure of 10 square meters per person is more realistic as it would allow space for basic hygiene and cooking functions to be conducted within the camp.

Recommendations: The following recommendations are made:

- That planning for small and medium camps be based on covered living accommodation only (a density of 3.5 square metres per person).
- That planning for large camps be based on a density of 10 square meters per person which will allow for covered living accommodation (3.5 square meters per person) and WASH and cooking facilities to be conducted within the camp.

[2] The Sphere Project Website, http://www.sphereproject.org/

Assessment and Approach

If 900,000 people were to be provided with covered living accommodation then 3,150,000 square metres of open areas would need to be identified. A map review indicated that vacant land within Kathmandu fell into three broad categories; large, medium and small.

Large Camps. (Size between 30,000 and 90,000 people (10 square metres per person)). The study has identified two locations for large camps - Tribhuvan University and the National Agricultural Research Center. Using 10m sq per person the areas could accommodate approximately 118,051 people. These sites offer the potential for long term IDPs and are in close proximity to Kathmandu. Details of these sites and recommendations are in Appendix 1.

Medium Camps. (Size between 20,000 – 45,000 people (3.5 square meters per person)). The study has identified six sites in and around Kathmandu which could be used for Medium Camps. Using 3.5 m sq per person the areas could accommodate approximately 286,908 people. Details of these sites and recommendations are in Appendix 2.

Small Camps. (Size between 1000 – 20,000 people (3.5 square meters per person)). This study identified 75 sites that could be used for Small Camps. Using 3.5 square meters per person the areas could accommodate approximately 387,739 people. Importantly it is anticipated that the camps will require water, for those accommodated in the camp and for those still living in the surrounding area. Details of the small camps are in Appendix 3.

Potential IDP camp sites have been plotted on the Kathmandu Valley map in the course of this study.

Main Planning Considerations

Water - Water will be a key consideration during the post earthquake recovery period. It is predicted the earthquake would break 95% of water pipes[3] and additional pressure would be placed on the water supply should the earthquake occur in the dry season. Using the sphere standard of 15 litres of water per person per day[4] two planning considerations are relevant. Potentially water would need to be sourced for the entire population of Kathmandu. This would be equivalent to 52.5 million litres per day (based on a population of 3.5 million). As a minimum it can be expected that those displaced by the earthquake would need access to water. Given the range of shelter options that would be adopted, water should be available in planned camps (large, medium and small sites), collection centers and at registration centers.

One potential solution for the provision of water is deep tube wells. However, initial research into this topic indicates that further work is required before deep tube wells can be offered as an effective water solution post an earthquake. UNICEF has used the Mexico City earthquake as an example where deep

[3] Nepal Red Cross Society, May 2008, Contingency Plan for a Major Earthquake in the Kathmandu Valley, p 15
[4] Norwegian Refugee Council (NRC)/The Camp Management Project (CMP), May 2008, Camp Management Toolkit, p 426

tube wells survived an earthquake. Local advice is that deep tube wells have withstood an earthquake of 5 magnitude. It is still unclear how deep tube wells would survive a 9 magnitude earthquake.

Other WASH Requirements: high population density in camps would have hygiene implications. For purposes of this study experiences learnt from the Koshi Floods are useful[5]. In this instance the following planning figures were used:

- 1 latrine for every 10 households/50 individuals
- 1 hand pump for every 20 households/100 individuals
- 1 bathing space for every 20 households/100 individuals
- 1 garbage pit for every 40 households/200 individuals

Food - high population density in camps creates a challenge to deliver the required volume of food. This challenge would be made greater since transport infrastructure is likely to be damaged during an earthquake

Security – high population density in camps would place heavy pressure on security. The control of large numbers of IDP would require intensive management and significant manpower. It can be expected that with the crowded conditions, in a situation which is uncertain and emotional, law and order issues would arise in the camps.

Recommendations

- A specialist engineer to be engaged to confirm that deep tube wells would survive a major earthquake.
- If it is confirmed that deep tube wells would survive a major earthquake it is recommended that deep tube wells be established at all planned camp sites, at collection centers and at registration centers.
- That the Water, Sanitation and Hygiene (WASH) Cluster lead (UNICEF) take into consideration and plan for the high density of IDPs.
- That the Food Security Cluster lead (WFP) take into consideration the high density and likely locations of IDPs.
- That the Emergency Shelter Cluster Lead (the Department of Urban Development and Building Construction, with the IFRC as Convener) take into consideration the high density and likely locations of IDPs[6].
- That the Ministry for Home Affairs, who is responsible for camp security, takes into consideration the high density of IDPs.

[5] Camp Coordination Camp Management – CCCM, International Organization for Migration (IOM), February 2009, Guidelines for the Provision of Facilities in Camps and Camp-Like Environments (draft) - Koshi Flooding Response, p4.

[6] Cluster leads as articulated in UNOCHA, July 2008, Nepal IASC Contingency Plan 2008, Kathmandu Nepal

Analysis and Conclusions

Analysis

Size of the problem: In light of the fact that almost all the existing infrastructure could be destroyed, the magnitude of the humanitarian efforts to support the displaced population after a natural disaster is difficult to overstate.

Coordination: There are many interested parties for disaster preparation. These include Government of Nepal, United Nations agencies, the Red Cross, and Non-Government Organizations. Detailed coordination of effort is critical to the successful rehabilitation of the city.

Camp Management: The proposal put forward in this study highlights that certain camps will be established at less than the Sphere Standards. While this approach may be required to accommodate the potential number of IDPs, the challenges facing camp management in this environment increase. Of particular concern will be hygiene and security of the camp sites and the provision of water.

Internal Migration: While this study has focused on camp sites in the immediate vicinity of Kathmandu Valley the magnitude of the problem indicates that there could well be a large number of people that might want to leave the Valley and return to their homes in the country. During major festivals between 30%-50% of Kathmandu's population leaves the city and returns to their home village. Using these figures as a parameter between 300,000 and 450,000 IDPs may want to leave the valley to be close to their family during times of crisis. This internal migration could be a significant challenge given that existing poor transport infrastructure would be damaged in the event an earthquake occurs. Strategies should be developed for managing this migration and ensuring that IDPs do not return to the stricken area in order to access humanitarian assistance.

Conclusions

Following are the conclusions of this study:

- Sites for IDP camps have been identified that could accommodate approximately 710,000 people.
- There is insufficient space close to Kathmandu to establish IDP camps at Sphere standards with all facilities to accommodate the expected population following a major earthquake.
- Authorities will need to anticipate large scale redeployment of IDPs out of the Kathmandu metropolitan area. Work should commence on the identification of these sites outside the ring road and outside the valley to accommodate large numbers of IDPs.
- The provision of water is the major planning consideration and requires further study.
- The expected high density of camps will place pressure on WASH, food and security elements of camp management.
- The Cluster Leads for Camp Coordination and Camp Management, WASH, Food, Health, Logistics and Emergency Shelter, together with the Government of Nepal will need to have a coordinated approach to managing the response to a major earthquake.

Lalitpur Sub-Metropolitan City Evacuation Sites

The TOR directs this study to review the sites outlined in the National Society for Earthquake Technology – Nepal report on Disaster Preparedness and Response Plan Framework for Safe Drinking Water in Kathmandu Valley, Lalitpur Sub-Metropolitan City. Specifically the TOR asks this study to:

- Map and report on the existing 5 Lalitpur sites, including:
  - Status.
  - Size
  - Template rendering of the site (not to scale)
  - List difficulties with each site.

All the sites identified in the National Society for Earthquake Technology – Nepal report are addressed in this report.

The report highlights nine potential evacuation sites and five recommended deep tube wells. For the purposes of this study the selected evacuation sites have been grouped into five groups and these are shown on the map below.

This study reviewed the sites identified by the National Society for Earthquake Technology and made the following observations:

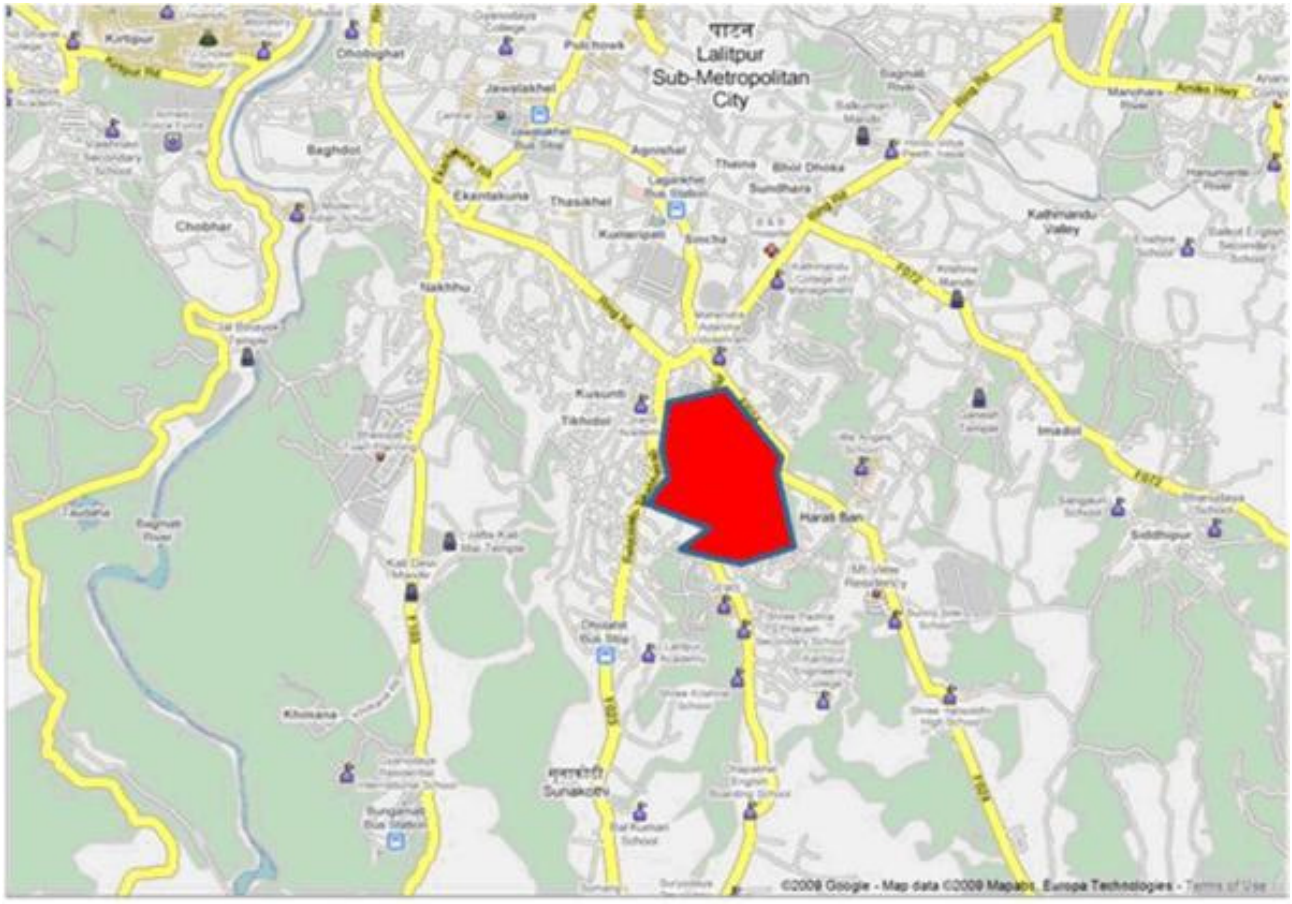
Site	Status / Description	Size	Implementation Issues
1	There are two linear sites one along the Bagmati River and one along the Ring Road. Both are clear of buildings. The linear site along the Ring Road includes a recommended deep tube well.	104,000 m2 of usable space. Holding capacity of just over 11,500.	A linear camp is more difficult to administer and arrange than more traditional shapes. The linear shape supports accommodation elements of camp layout but the establishment of other facilities such as schools to the Sphere standards would be difficult.
2	This site is based around the Engineering College. The area has extensive cleared areas and accommodation buildings which contain cooking facilities.	86,000 m2 of usable space. Holding capacity of over 9,600.	Few difficulties associated with using this site, however some organizations have found it difficult to negotiate the use of this land in a non-crisis situation.
3	This site includes a football ground and an area of cleared land which is part of an oxygenation park.	78,000 m2 of usable space. Holding capacity of over 8,600.	There are few difficulties in using these areas. The football stadium may suffer from earthquake damage lessening it facilities. The open ground is near an oxygenation park which is subject to flooding during the monsoon.
4	This site includes an industrial park and two adjacent small blocks of cleared land.	40,000 m2 of usable space. Holding capacity of over 4,500	The main part of this site is the Patan Industrial Estate. This is an area covered by one to two story buildings. If these buildings are destroyed in an earthquake the area would lose most of its facilities to be an evacuation site. This area is not recommended to be an evacuation site.
5	National Agricultural Research Centre (NARC)	201,000 m2 of usable space.	This is a very good site for an IDP camp. The area is essentially clear of buildings

		Holding capacity of over 22,000	and has scope for easy camp establishment.

Important Observation. The National Society for Earthquake Technology – Nepal report does not use Sphere Standards to calculate the holding capacity of the sites. The Sphere standard is 45 m2 for each person. The standard used in the National Society for Earthquake Technology – Nepal report is 9 m2. The assumption must be made that most of the camp facilities will be located outside the evacuation sites indicated.

Appendix 1 – Large Camp Site Descriptions

1. National Agriculture Research Centre



Item	Description
Location	The site is situated just south of the ring road on the southern edge of Kathmandu city. 27 39'11.68" N, 85 19'30.13" E
General Description	This site is flat and relatively clear of trees and buildings.
Area	305,470 square metres
Capacity	87,277 (3.5 square metres per person) Not recommended 30,547 (10 square metres per person) Accommodation and some WASH facilities 6800 (45 square metres per person) Sphere Standard
Special Features of Site	Large areas of cleared land which is suitable for the establishment of a large IDP camp.
Significant features near the site	Education. Sampurna Boarding School, Kathmandu International College of Theology, Bright Vision College, Grand Academy,

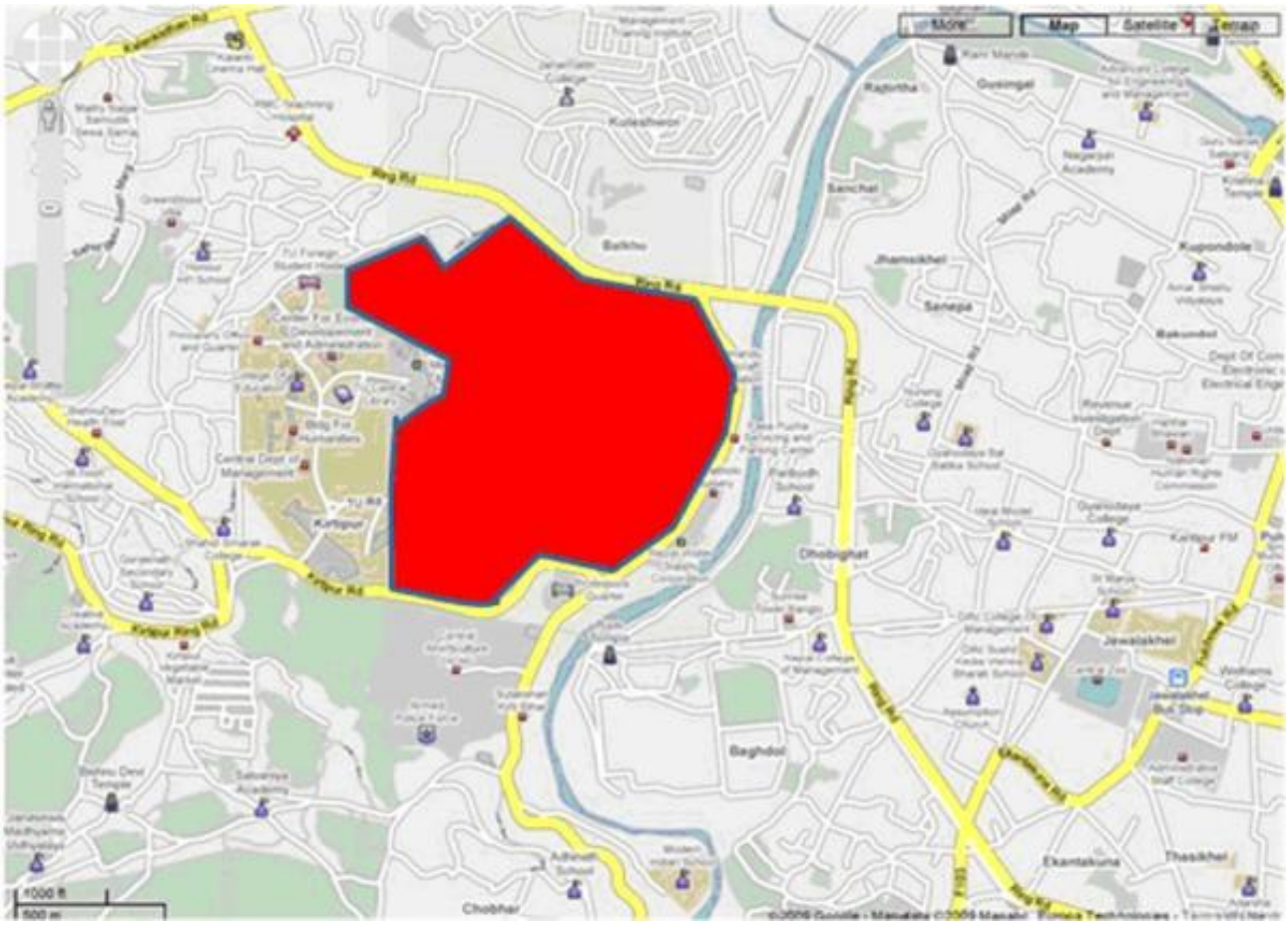
	Asian College. Police. Police Station on the Ring Road.
Implementation Issues	Provision of water for large numbers of IDP will be a challenge.
Ownership	Ministry of Agriculture and Cooperatives.
Security	No existing security features.
Access	All weather roads to the north, east and west of the site.
Gradient	0 - 2%
Soil	Sandy Loam. Well drained.
Trees and vegetation	Sparsely vegetated with large areas of open grass.
WASH Facilities (30,000 people)	Latrines. 600 Bathing spaces. 300 Garbage pits: 150

Recommendations – National Agriculture Research Center Site

It is recommended that:

- The GoN categorize the National Agriculture Research Center as a planned camp for use after an earthquake.
- That infrastructure planning is conducted to establish the NARC site as a Sphere Standard Camp.
- That deep tube wells be established to provide water for up to 60,000 people (Camp and surrounding places).

2. Tribhuvan University Site



Item	Description
General Description	The Tribhuvan University site includes the university grounds and an adjacent cleared block of land identified as an oxygenation park. The site is essentially clear of buildings and is relatively flat. The site is outside the ring road but in close proximity to the main population centre of Kathmandu.
Area	875,043 square metres
Capacity	250,012 (3.5 square metres per person) Not recommended 87,504 (10 square metres per person) Accommodation and some Wash facilities 19445 (45 square metres per person) Sphere Standard
Special Features of Site	The site has existing facilities to support university students. Buildings, water outlets and toilets, if still operational after an earthquake, could be used to supplement camp facilities.
Significant features near the site	Water. The site is adjacent to the Bagmati River. Police. There is an Armed Police Post near to the University. Medical. 4 hospitals in Balkhu and Kirtipur Areas which is near

	by TU and oxidation pond Education. Golden Rang Academy, Laboratory Ebs, Mangal Uchha Ma Vi, Annapurna Ma Vi, Nawajeevan Ma Vi, Sudesha Ma Vi. Expansion Potential. The areas around this site allow considerable flexibility for expansion. There is open space along the river banks for many kilometers extending away from Kathmandu.
Implementation Issues	An assessment of the water producing capacity of this site has not been conducted. However the site would offer little, if any, restriction to the establishment of bores.
Ownership	Tribhuvan University
Security	Partial fencing in some of the sites inside the university
Access	All season road inside the university area, feeder road inside the oxidation pond where 500 m away from the main road.
Gradient	0 – 3%
Soil	Clayey loam soil
Trees and vegetation	Partial tree plantation, grasses, cultivation of agricultural crops
WASH Facilities (87,500 people)	Latrines. 1750 Bathing spaces. 875 Garbage pits: 440

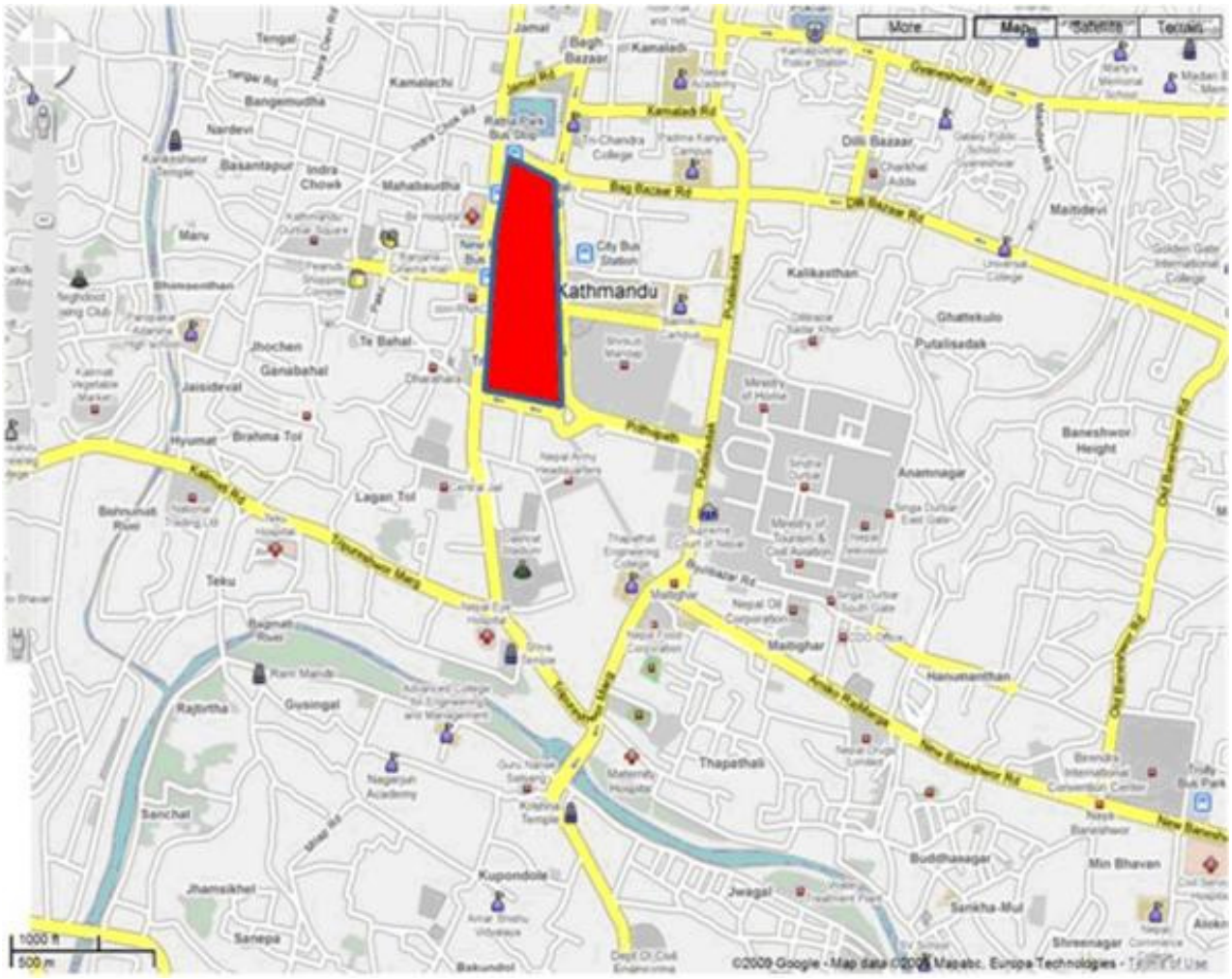
Recommendations – Tribhuvan University Site

It is recommended that:

- The GoN liaise with the University to categorize the site as a planned camp for use after an earthquake.
- That infrastructure planning is conducted to establish the University site as a Sphere Standard Camp.
- That deep tube wells be established to provide water for up to 90,000 people.

Appendix 2 – Medium Camp Site Descriptions

1. Ratna Park



Item	Description
Location	The site is located centrally in Kathmandu. 27 42'09.90" N, 85 18' 55.02 E
General Description	The site incorporates Ratna Park and Tudikhel. The land is flat, has very few trees, and apart from the Stadium Grandstand is free from buildings which might make the area unusable after an earthquake.
Area	155,400 square metres.
Capacity	44,400 (3.5 square metres per person)
Special Features of Site	Centrally located within the city and is a likely rallying point for IDP. The area has existing fencing which will aid in camp management.
Significant features near the	Water. The Bagmati river runs approximately 1 km to the south.

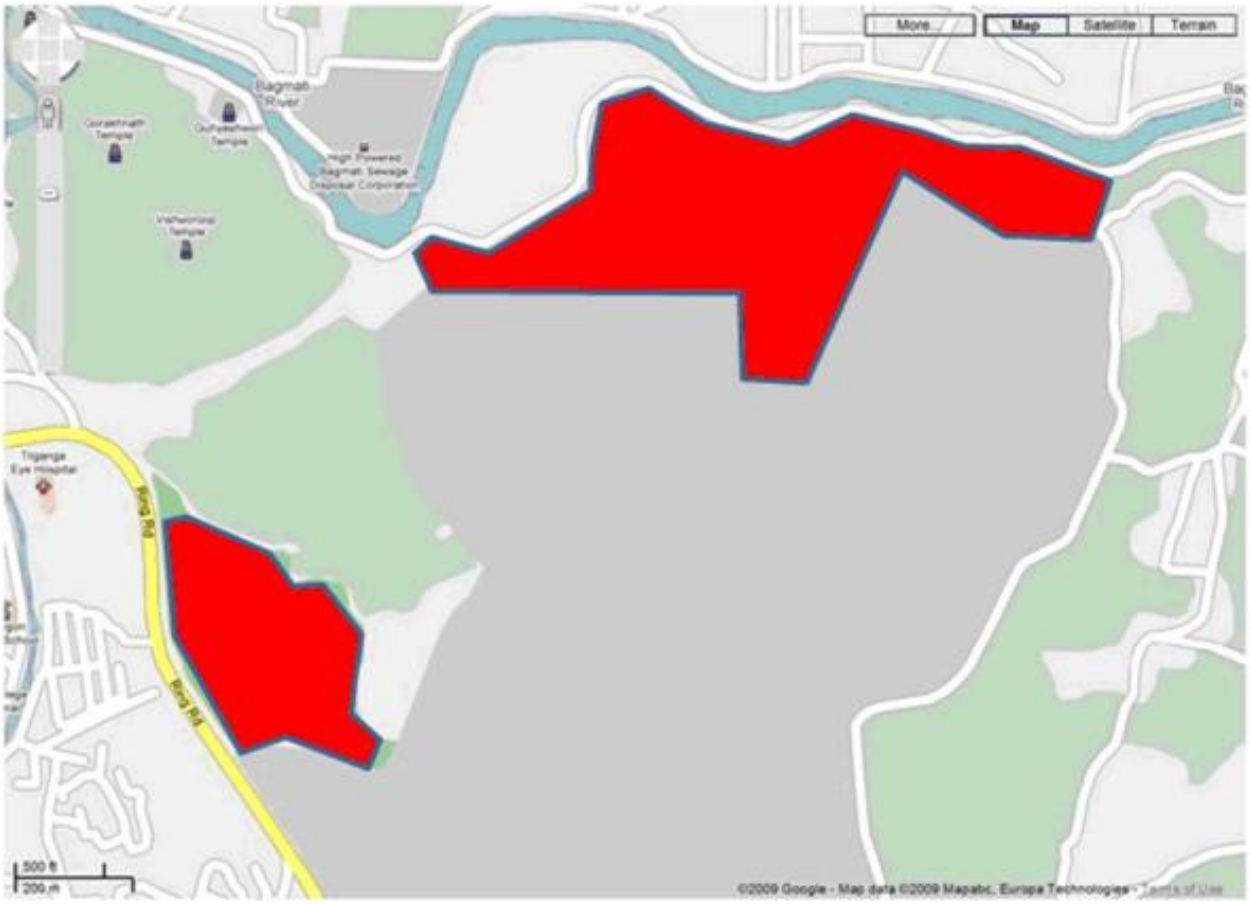
site	Medical: Bir Hospital, Annapurna Nursing Home, Miteri Hospital, Kathmandu Model Hospital, Nepal Eye Hospital, LifeCare Hospital Education: Shanker Dev Campus, PadmaKanya Campus, RR Campus, Durbar High School, Padmodaya Ma Vi, Sahid Sukra Ma Vi, Arniko Awasiya Ma Vi, BandiBikash Ni Ma Vi, Dip Ma Vi, Jaganath Ma Vi, Kanti Ishwori Sishu Vidyalaya, Vishwa Niketan Uchha Ma Vi Government. Singha Durbar.
Implementation Issues	Traffic flow in this area is poor during normal operations and it can be expected that after an earthquake vehicle movement to this site will be heavily restricted. In addition to the people that may be accommodated in this location the central site is likely to be a logical gathering point after an earthquake. Authorities will need to be prepared to manage traffic flows and to relocate IDP to other sites. The large numbers will place a heavy demand on WASH facilities which will need to be established in adjoining areas.
Ownership	Tudikhel: Nepal Army Ratna Park Garden and Khulla Manch: Kathmandu Municipality
Security	Iron pillars along with brick fencing all around the space; commercial buildings, hospitals, bus park, police station, army barrack.
Access	All season roads, main road of KMA
Gradient	Flat (0 – 1%)
Soil	Clayey loam soil
Trees and vegetation	Grasses, minimal number of trees (ornamental trees)
WASH Facilities (44,400 people)	Latrines. 900 Bathing spaces. 440 Garbage pits: 220

Recommendations – Central Site

It is recommended that:

- Ratna Park and Tudikhel be categorized by the GoN as a planned camp for use after an earthquake.
- That deep tube wells be established to provide water for up to 70,000 people (Camp and surrounding places).

2. Airport / Golf Club Site



Item	Description
Location	The site is situated adjacent to the Tribuvan International Airport. The Royal Nepal Golf Club is between the airport and the Ring Road 27 42' 09.59"N, 85 21'16.00 E. The Army Golf Club is between the airport and the Bagmati River 27 24'34.73' N, 85 21'42.01"E.
General Description	The golf clubs offer open space that is relatively flat and is well serviced with water.
Area	253327 square metres
Capacity	72,379 people (3.5 square metres per person)
Special Features of Site	The sites have plentiful water. Each golf club contains a limited catering facility which may be used to offset the catering requirements of the camp. Water supply is plentiful although the exact amount available for IDP has not been calculated.
Significant features near the site	Water. The Army Course Club is adjacent to the Bagmati River which could provide additional water for the camp if treated. Transport. The sites are adjacent to the Tribuvan International

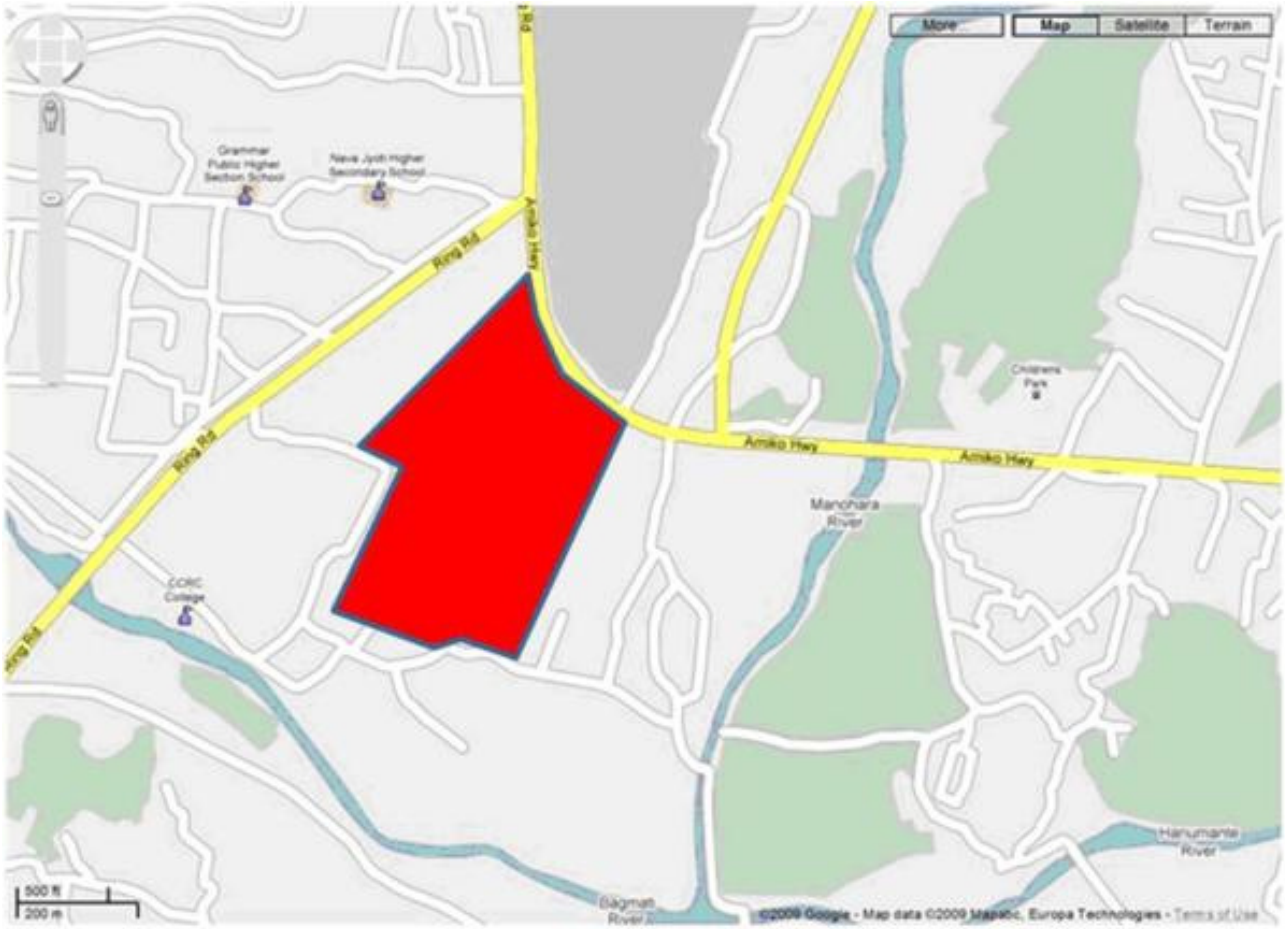
	Airport. If functional, this airport is likely to be a key hub for relief supplies. Religion. The sites are close to Pashputinath Temple, a sacred site for Hindus. This temple will be heavily utilized after an earthquake as last rites are administered to those killed. Army. The Army's 11th Brigade is located between the two sites. Medical. Tilganga Eye Hospital, Kathmandu Model Hospital Education. Sharada Ni Ma Vi, Baba Vatika Ma Vi, Nepal Ved Vidhyashram Ma Vi, Shiva Parvati Badri Narasingh Pra Vi,
Implementation Issues	While the proximity of the airport means that this site will be relatively easy to support there is a significant security issue to ensure that airport operations can continue while up to 70,000 people are accommodated nearby. Additional security measures such as fences and guards could be needed. The proximity of Pashputinath temple means that it should be expected that at least part of this site will be occupied by relatives of those killed in the earthquake.
Ownership	Pashupati Development Trust Board, Civil Aviation Department
Security	Barbed wire fencing in Nepal Golf Course along the road side, Nepal Police Station, high security alert by Nepal Army and Police of TIA
Access	All season road, main road (Ring road)
Gradient	0 – 3%
Soil	Clayey loam soil
Trees and vegetation	The identified space is covered with grasses along with dense forest adjacent to airport, gulf courses.
WASH Facilities	Latrines. 1450 Bathing spaces. 725 Garbage pits: 360

Recommendations – Airport Golf Club Site

It is recommended that:

- The GoN enter into a negotiation with the Army, Royal Nepal Golf Club and the Civil Aviation Authority to categorize the golf course as a planned camp for use after an earthquake.
- That deep tube wells be established to provide water for up to 80,000 people (Camp and surrounding places). This would include an assessment of the existing water supply used for the golf courses.

3. End of Airport Site (Civil Aviation 2)



Item	Description
Location	The site is located at the southern end of the runway of the Tribuvan International Airport. 27 40'29.42" N, 85 20'42.01 E.
General Description	At the southern approach to the Tribuvan International Airport is a cleared block of land that is currently guarded by the Army and houses a navigational beacon for the airport.
Area	146575 square metres
Capacity	41878 people (3.5 square metres per person)
Special Features of Site	The area is fenced and has established guard posts.
Significant features near the site	Transport. The site is adjacent to the Tribuvan International Airport. If functional, this airport is likely to be a key hub for relief supplies. The site is on the ring road giving good road access. Water. The area is near to a number of rivers which could be used to supplement the camps water requirements if treated.

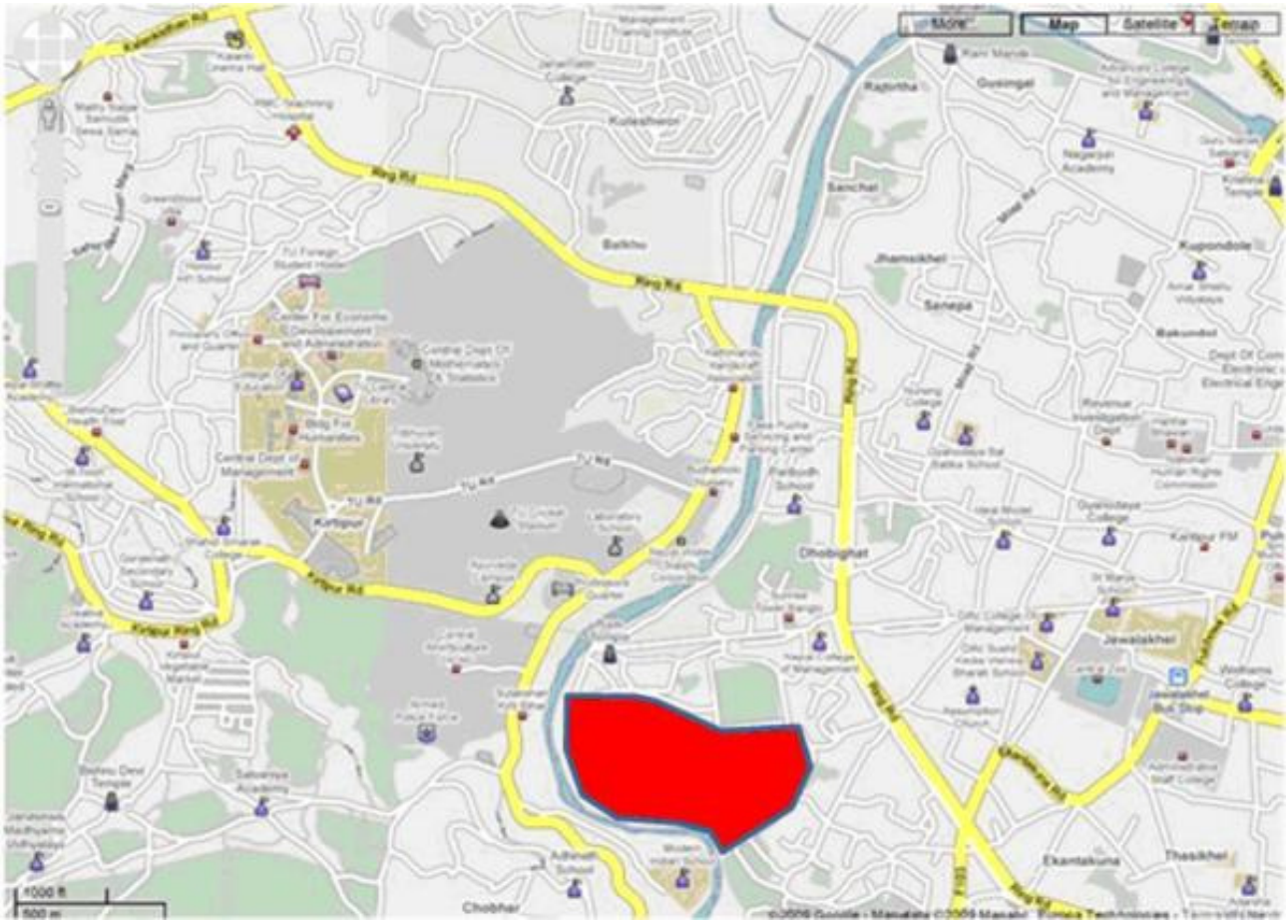
	Medical. Kathmandu Model Hospital Education. Koteshwor Saraswoti Ma Vi, Naba Jyoti Uchha Ma Vi.
Implementation Issues	While the proximity of the airport means that this site will be relatively easy to support there is a significant security issue to ensure that airport operations can continue. Additional security measures such as fences and guards will be needed, especially around the navigational aids located within the camp.
Ownership	Civil Aviation Department
Security	Steel wire fencing all around the space, guarded by army, Nepal Police Station
Access	All season road
Gradient	0 - 2%
Soil	Clayey loam soil
Trees and vegetation	Mostly covered with grasses and shrubs
WASH Facilities	Latrines. 840 Bathing spaces. 420 Garbage pits: 210

Recommendations – End of Airport Site

It is recommended that:

- The GoN enter into a negotiation with the Civil Aviation Authority to categorize the end of the runway site as a planned camp for use after an earthquake.
- That deep tube wells be established to provide water for up to 60,000 people (Camp and surrounding places).

4. Oxygenation Park



Item	Description
Location	The Oxgenation pond is located on the banks of the Bagmati River opposite the Tribhuvan University.
General Description	Despite its name the oxygenation park has a large area of cleared land which is suitable for and IDP camp.
Area	146604 square metres
Capacity	41887 people (3.5 square metres per person)
Special Features of Site	The area is partly fenced and is clear of tress.
Significant features near the site	Water. The site is adjacent to the Bagmati River. Police. There is an Armed Police Post near to the University. Medical. 4 hospitals in Balkhu and Kirtipur Areas which is near by TU and oxidation pond Education. Golden Rang Academy, Laboratory Ebs, Mangal Uchha Ma Vi, Annapurna Ma Vi, Nawajeevan Ma Vi, Sudesha Ma Vi.

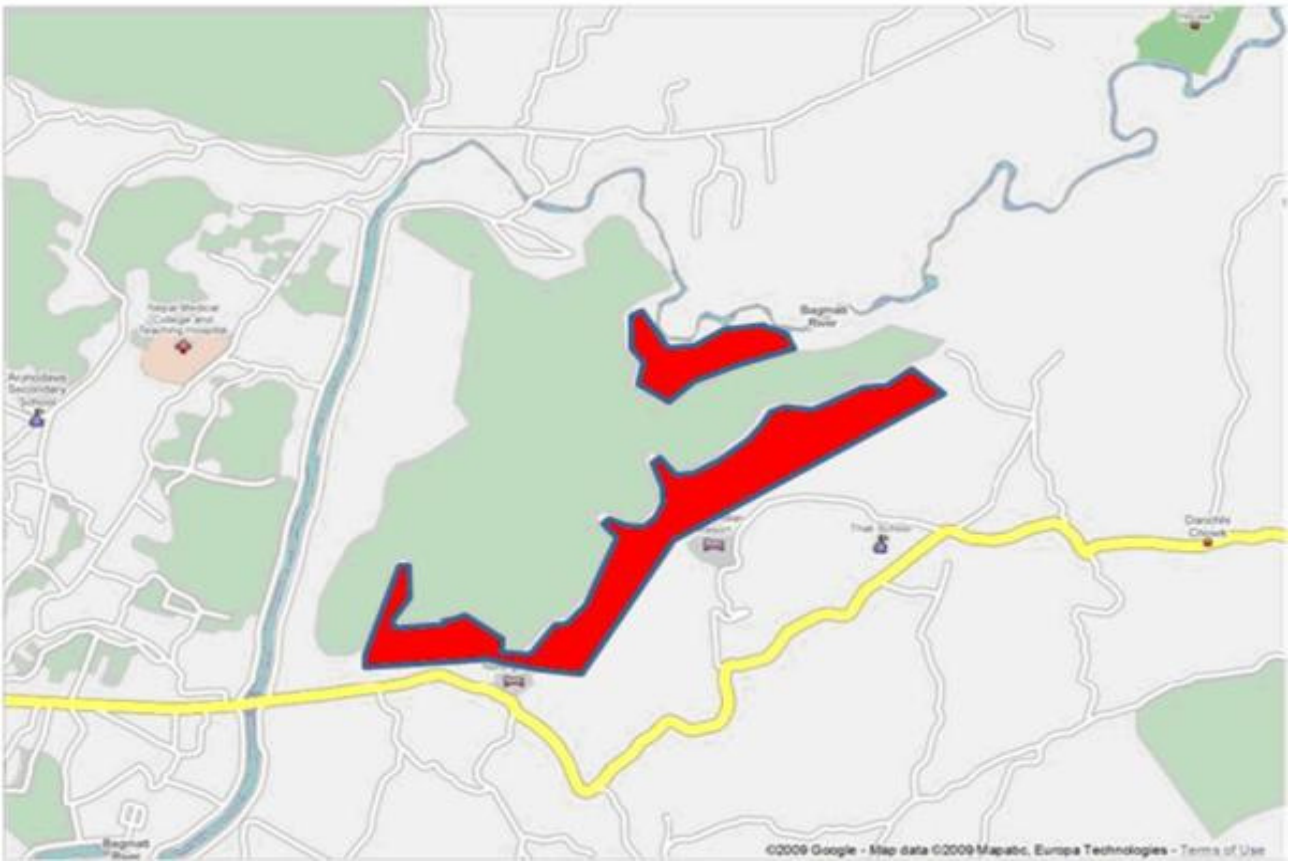
	Expansion Potential. The areas around this site allow considerable flexibility for expansion. There is open space along the river banks for many kilometers extending away from Kathmandu.
Implementation Issues	Vehicle access is restricted and could be impossible after an earthquake. The high density of IDP will place significant pressure on WASH facilities.
Ownership	Ministry of Agriculture and Cooperatives
Security	The area is partly fenced.
Access	All season road
Gradient	0 - 2%
Soil	Clayey loam soil
Trees and vegetation	Mostly covered with grasses
WASH Facilities	Latrines. 840 Bathing spaces. 420 Garbage pits: 210

Recommendations – Oxygenation Park

It is recommended that:

- The GoN liaise with the Lalitpur City Council with the aim to designate the oxygenation park as a planned camp for use after an earthquake.
- That deep tube wells be established to provide water for up to 60,000 people (Camp and surrounding places).

5. Gokarna Golf Club Site



Item	Description
Location	The Gokarna Golf Club is situated about 10 km from the centre of Kathmandu.
General Description	The course is clear of buildings and has an adequate water supply. It is situated close to the Bagmati River.
Area	178,212
Capacity	50,917 (3.5 square metres per person)
Special Features of Site	The golf club is adjacent to a former hunting reserve which offers a limited quantity of fire wood. Adequate water is available although this is not potable. The Gokarna Forest Resort is co-located with the golf course. The resort offers cooking, accommodation, and communication facilities.
Significant features near the site	Water. The golf course has ready access to the Bagmati River. Education. Gokarna Ni Ma Vi, Gokarneswor Mahadev Ma Vi, Taleju Bhawani Pra Vi,
Implementation Issues	Water used on the golf course and from the Bagmati River is not potable. The road from Kathmandu to Gokarna has a poor capacity and crosses the Bagmati River. It can be anticipated that

	IDP may need to walk to this camp.
Ownership	Department of Forest
Security	Brick wall fencing along the side of the road
Access	All season road, narrow road towards the approach
Gradient	0 – 3%
Soil	Clayey loam soil
Trees and vegetation	Open areas on the golf course surrounded by forest.
WASH Facilities	Latrines. 1020 Bathing spaces. 510 Garbage pits: 265

Recommendations – Gokarna Site

It is recommended that:

- The GoN enter into a negotiation with the owners of the Gokarna Resort for use of the golf course and categorize the Gokarna Golf Course as a planned camp for use after an earthquake.
- That deep tube wells be established to provide water for up to 70,000 people (Camp and surrounding places). This will include the consideration of the existing water supply used on the golf course.

6. Birendra Sainik School

Item	Description
General Description	This site is located along the main road leading to Bhaktapur City in Bhaktapur District.
GPS Coordinate	27°40'20.24"N/ 85°25' 03.91"E
Area	134, 564 sq. m
Capacity	38, 447 population (3.5 sq. m)
Special Features of Site	• The site incorporates football ground, pond, media facility, food storage facility and school buildings.
Significant features near the site (within 1 km)	• Fire brigade in close proximity • Siddhapokhari pond is adjacent • Another identified opoen space is near by.
Implementation Issues	
Ownership	Nepal Army/ Minitsry of Defence
Security	Round the clock guarded by NA, proper fencing in the site
Access	All season road, year- round access to the site
Trees and vegetation	Open Space includes grasses and few trees.

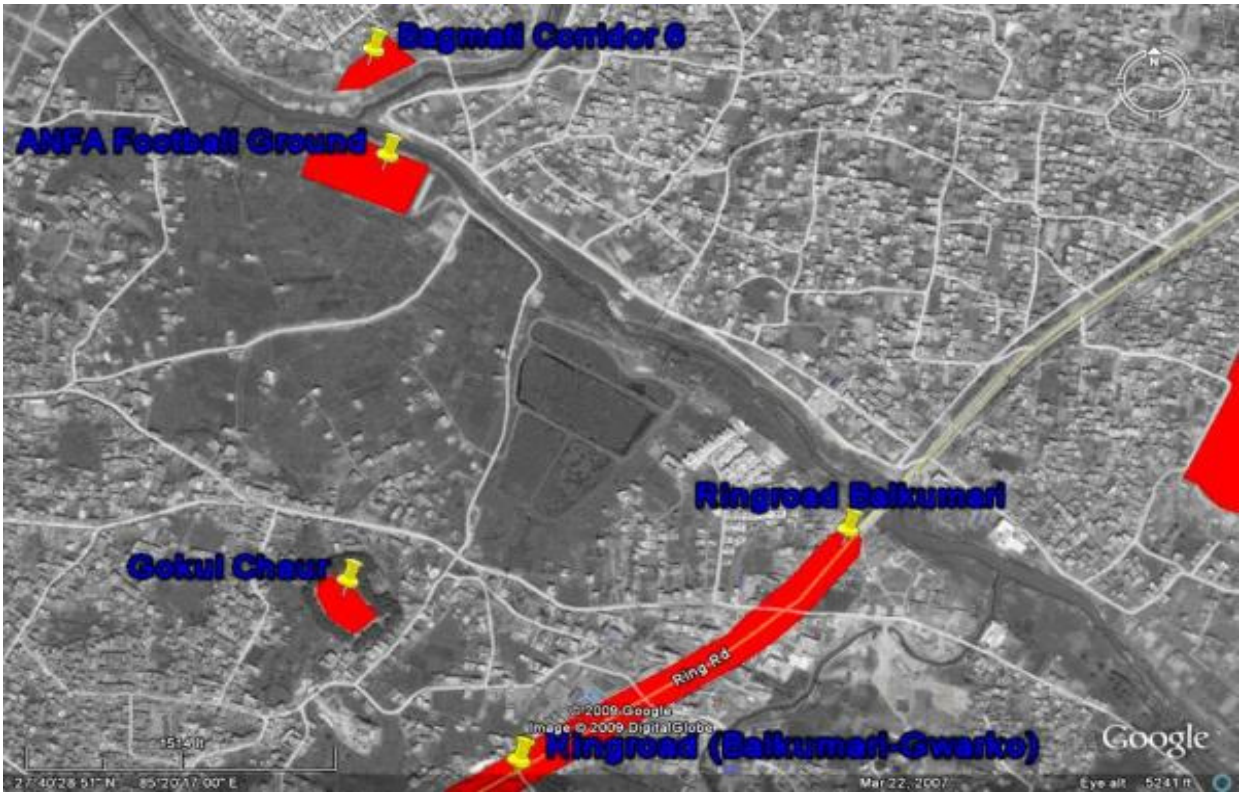
Appendix 3 – Small Camp Site Descriptions

1. Satdobato Sites

Site Details

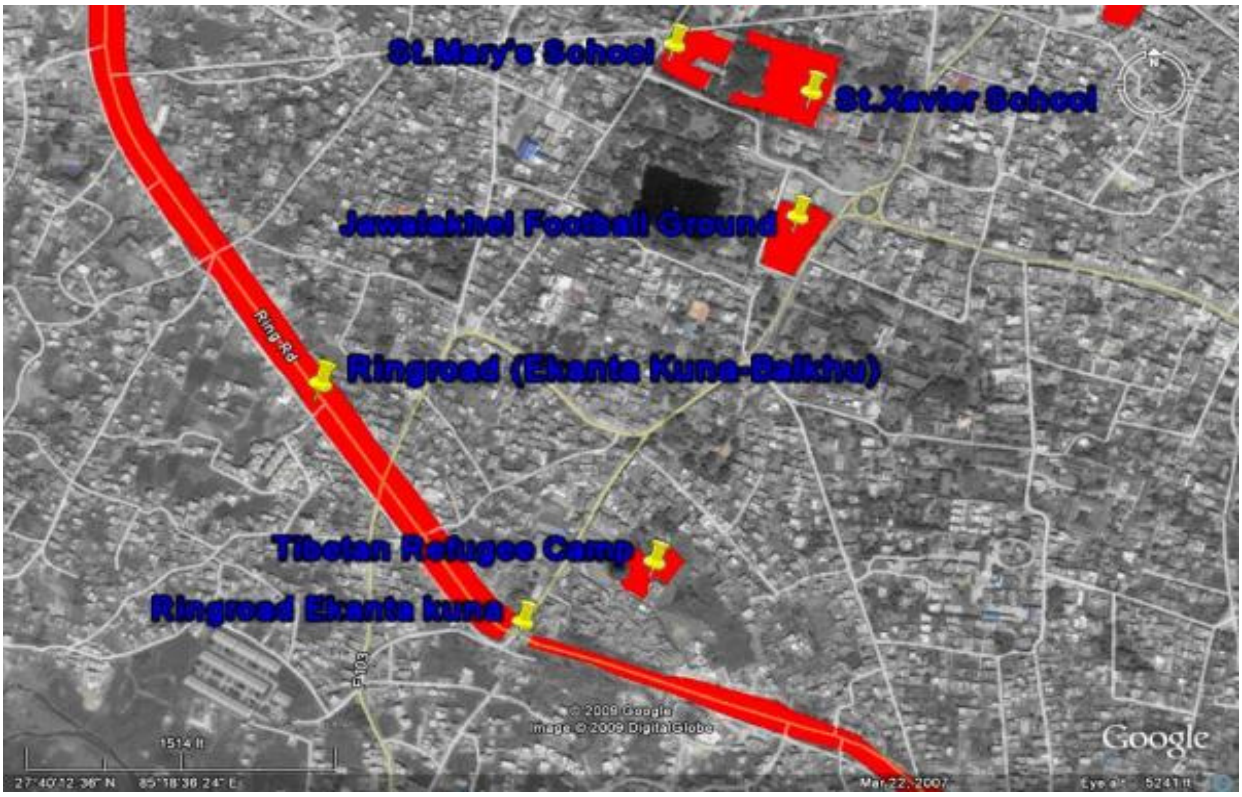
Item	Description
General Description	The sites are situated at the South East corner of Kathmandu Valley. All the sites are quite near to the ring road except RONAST which is just a kilometer away from ring road. Generally the land is relatively flat, covered with grasses and road side plantation along the ring road.
GPS Coordinates	RONAST: 27°39'23.49"N; 85°19'41.12"E ANFA Football Ground: 27°39'43.10"N; 85°19'50.50"E Ringroad (Gwarko-Satdobato): 27°39'38.00"N; 85°19'38.74"E
Area	63,077 sq.m
Capacity	18,022 population
Special Features of Site	Deep tubewell already installed at NARC by NSET/UNICEF
Significant features near the site (within 1 km)	5 hospitals; 17 education centers, and 2 police stations; NARC (potential large camp) nearby
Implementation Issues	Expect a large number of IDP from Patan and Satdobato areas. Patan is a densely populated area with old buildings which will not withstand a major earthquake. Therefore camps could be required to hold injured personnel. Management of a linear camp could be difficult Provision of adequate water
Ownership	RONAST: Ministry of Environment, Science and Technology ANFA Football Ground: National Sports Council/Ministry of Youths and Sports Ringroad (Gwarko-Satdobato): Department of Roads
Security	Fencing exists in all the sites except Ringroad Security management in RONAST and Ringroad are necessary due to large populations habitation
Access	All season road, year round access to all the sites

2. Balkumari Sites



Item	Description
General Description	The sites are located close to the Bagmati river and close to dense settlement (Patan). The land is relatively flat with some tree plantation around at Gokul Chaur and along the ring road.
GPS Coordinates	Gokul Chaur: 27°40'18.23"N; 85°20'1.80"E ANFA Football Ground: 27°40'40.20"N; 85°20'3.97"E Bagmati Corridor 6: 27°40'45.64"N; 85°20'3.19"E Ringroad (Balkumari-Gwarko): 27°40'8.87"N; 85°20'11.09"E
Area	44,877 sq.m
Capacity	12,822 population
Special Features of Site	Bagmati River in close proximity
Significant features near the site (within 1 km)	1 Hospital, 6 Education Centers, and 0 Police Stations, Tribhuwan International Airport nearby the sites
Implementation Issues	Expect a large number of IDPs from the Patan area Patan is a densely populated area with old buildings which will not withstand a major earthquake. Therefore camps could be required to hold injured personnel. Management of a linear camp could be difficult Provision of adequate water Drainage maybe an issue in the ring road site
Ownership	Gokul Chaur: Lalitpur Municipality ANFA Football Ground: National Sports Council Bagmati Corridor 6: Kathmandu Municipality Ringroad (Balkumari-Gwarko): Department of Roads
Security	Fencing exists only in ANFA Football Ground Security Management required in all the sites as no police station is nearby.
Access	All season road except ANFA Football Ground and Bagmati Corridor 6. Access to Gokul Chaur and ANFA football ground is very narrow and off-road.

3. Jawalakhel Sites



Item	Description
General Description	The sites are situated at the center of the Lalitpur district. One of the sites is situated at the Tibetan Refugee Camp. The land has a relatively gentle slope toward the ring road. Some areas at schools, along the ring road and central zoo have been planted with trees.
GPS Coordinates	St.Xavier School: 27°40'27.33"N; 85°18'46.34"E St. Mary's School: 27°40'29.77"N; 85°18'38.85"E Jawalakhel Football Ground: 27°40'20.90"N; 85°18'45.58"E Tibetan Refugee Camp: 27°40'3.05"N; 85°18'37.77"E Ringroad (Ekantakuna-Balkhu): 27°40'12.19"N; 85°18'19.51"E
Area	71,824 sq.m
Capacity	20,521 population
Special Features of Site	A large water pond is inside the central zoo and the District Police Office is close to the sites.
Significant features near the site (within 1 km)	4 Hospitals, 14 Education Centers and 2 Police Stations, Central zoo
Implementation Issues	Expect a large number of IDPs from Jawalakhel, Kumaripati, Ekantakuna, Bhanimandal, Sanepa, Balkhu and Dhobighat Areas Management of a linear camp could be difficult Provision of adequate water Drainage maybe an issue in the ring road site
Ownership	St.Xavier & St.Mary's School: Society of Jesus Jawalakhel Football Ground: Machindranath Development Trust Board Tibetean Refugee Camp: Nepal Red Cross Society (NRCS) Ringroad (Ekantakuna-Balkhu): Department of Roads
Security	Fencing exists in all the sites except ring road camp.
Access	All season road, year-round access to all the sites

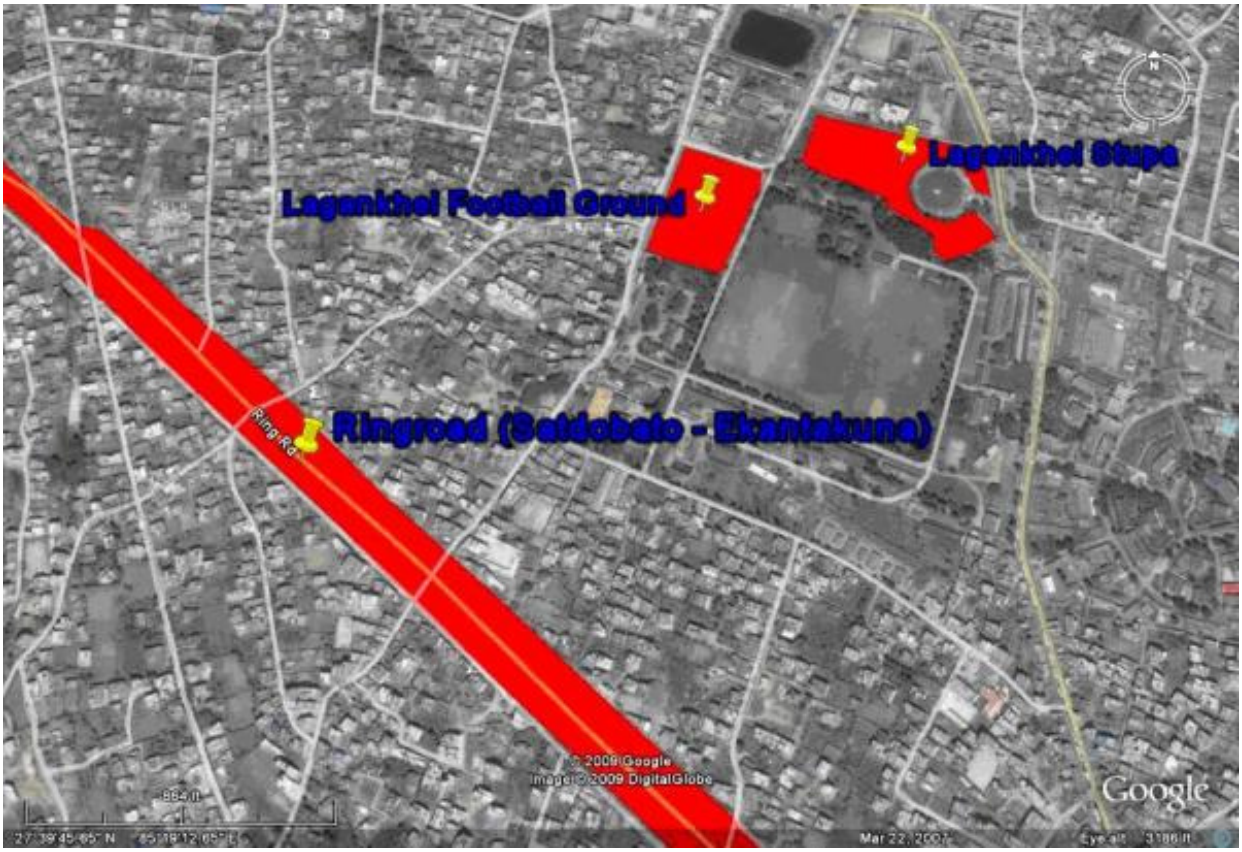
4. Pulchowk Sites

Item	Description
General Description	The sites are located near the dense settlement of the Patan Area and they are centrally located in Lalitpur district.
GPS Coordinates	Madan Smarak School: 27°40'36.02"N; 85°19'5.84"E Lalitpur Municipality Office: 27°40'33.38"N; 85°19'2.69"E
Area	11,676 sq.m
Capacity	3,336 population
Special Features of Site	The area is surrounded by densely populated urban areas.
Significant features near the site (within 1 km)	2 Hospitals, 6 Education Centers and 1 Police Station
Implementation Issues	Expect a large number of IDPs from Patan area along with Pulchowk, Hariharbhwan areas Provision of adequate water
Ownership	Madan Smarak School: District Education Office Lalitpur Municipality Office: Lalitpur Municipality
Security	Fencing exists in all the identified sites
Access	All season road, year-round access to sites

5. Pulchowk Engineering College Sites

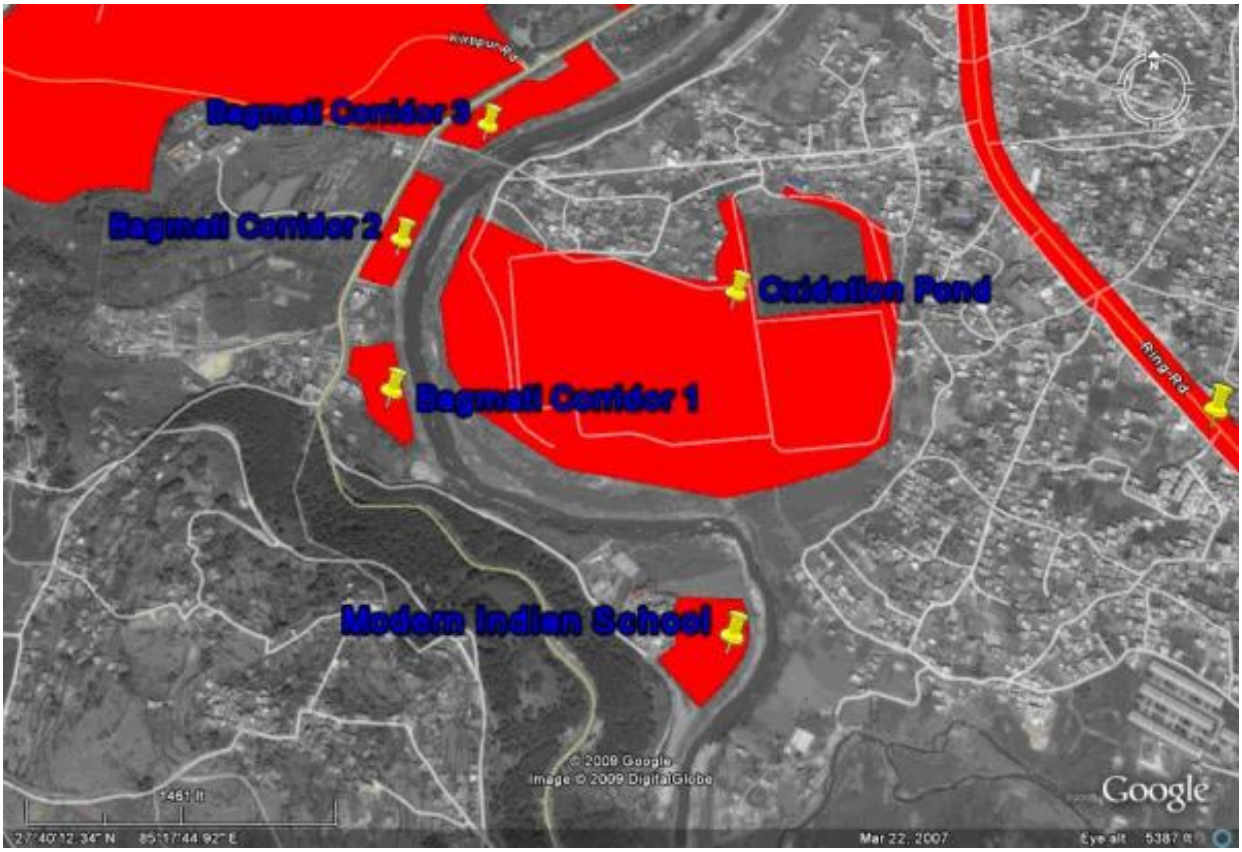
Item	Description
General Description	The sites are located near the Bagmati river and are centrally located in Lalitpur district. Pulchowk Engineering College offers additional facilities such as catering and accommodation useful for camp management.
GPS Coordinates	Pulchowk Engg. College 1: 27°40'57.35"N; 85°19'23.05"E Pulchowk Engg. College 2: 27°40'50.77"N; 85°19'4.70"E UN Park (Jwagal): 27°41'8.52"N; 85°19'32.72"E Patan College: 27°40'45.40"N; 85°19'19.16"E
Area	1,12,422 sq.m
Capacity	32,121 population
Special Features of Site	Deep tubewell installed at Pulchowk Engineering College by NSET/UNICEF and at UN Park Jwagal by Department of Drinking Water Supplies
Significant features near the site (within 1 km)	2 Hospitals, 3 Education Centers, and 1 Police Station
Implementation Issues	Water stagnant possible during monsoon at Pulchowk Engg. College 1 and UN Park Jwagal near the Bagmati river Drainage maybe an issue in some areas There is an existing water supply system installation at Patan College Expect IDPs from Patan, Chakupat, Kupondole and Shankhamul Areas possibilities Provision of adequate water
Ownership	Pulchowk Engg. College 1: Tribhuwan University Pulchowk Engg. College 2: Tribhuwan University UN Park (Jwagal): Ministry of Population and Environment Patan College: Tribhuwan University
Security	Fencing exists in all the sites Security Management in UN Park Jwagal and Pulchowk Engg. College 1
Access	All season road, year-round access to all sites

6. Lagankhel Sites



Item	Description
General Description	The sites are located towards the South East of Kathmandu valley. Rajdal Army barrack is close to the identified sites.
GPS Coordinates	Lagankhel Football Ground: 27°39'52.99"N; 85°19'15.59"E Lagankhel Stupa: 27°39'54.86"N; 85°19'23.25"E Ringroad (Satdobato-Ekantakuna): 27°39'44.45"N; 85°19'1.60"E
Area	49,818 sq.m
Capacity	14, 234 population
Special Features of Site	Army Barracks and densely populated Patan area are close to the sites.
Significant features near the site (within 1 km)	4 Hospitals, 5 Educational Centers and 2 Police Stations
Implementation Issues	Expect IDPs from Patan, Lagankhel, Sundhara, Kusunti, Nakhipot, Jawlakhel, Ekantakuna, Nakhu, Tikhidole Areas Management of a linear camp may be a challenge Provision of adequate water
Ownership	Lagankhel Football Ground: Lalitpur Municipality Lagankhel Stupa: Lalitpur Municipality Ringroad (Satdobato-Ekantakuna): Department of Roads
Security	Fencing exists at two sites except the ring road site Security of the ring road site will require management Police stations and army barracks are nearby
Access	All season road, year-round access to all the sites

7. Tribhuvan University Sites



Item	Description
General Description	The sites are located South West of Kathmandu Valley, near the Tribhuvan University, along the bank of Bagmati river. The sites are sparsely vegetated with some trees along the river bank and near Tribhuvan University
GPS Coordinates	Bagmati Corridor 1: 27°40'13.30"N; 85°17'31.05"E Bagmati Corridor 2: 27°40'22.02"N; 85°17'31.01"E Bagmati Corridor 3: 27°40'29.20"N; 85°17'36.06"E Modern Indian School: 27°40'0.67"N; 85°17'50.72"E Himal Cement Company: 27°39'16.99"N; 85°17'28.71"E
Area	2,09,491 sq.m
Capacity	59,855 population
Special Features of Site	Bagmati river flows alongside the sites
Significant features near the site (within 1 km)	0 Hospitals, 3 Education Centers and 1 Police Station and Tribhuvan University (potential large camp site)
Implementation Issues	Expect IDPs Kathmandu district and Lalitpur district and Kirtipur Municipality possibilities Provision of adequate water Possible flood risk during monsoon Parts of the river banks are heavily polluted with dumped rubbish
Ownership	Bagmati Corridors: Kathmandu Municipality Modern Indian School: School Itself Himal Cement Company: Himal Cement Company
Security	Some security fencing at the Cement factory and school.
Access	All season road, year-round access to all sites

8. Ratna Park Sites

Item	Description
General Description	The sites are centrally located in Kathmandu Valley. The land is relatively flat with some trees.
GPS Coordinates	Bhirkuti Mandap: 27°42'3.29"N; 85°19'4.37"E Rastriya Sabha Griha: 27°42'8.84"N; 85°19'2.61"E Balmiki Vidyapith: 27°42'9.95"N; 85°19'15.00"E
Area	13,494 sq.m
Capacity	3,855 population
Special Features of Site	Nepal Army Headquarters and the Police Club are close to the sites
Significant features near the site (within 1 km)	3 Hospitals, 4 Education Centers, and 2 Police Stations Close to Ratna Park (Medium Camp)
Implementation Issues	Expect IDPs from Ason, Thamel, Putalisadak areas Provision of adequate water Potential to manage these small camps with the medium camp identified at Ratna Park Some of these camps may also serve as collective centers
Ownership	Bhirkuti Mandap: Kathmandu Municipality Rastriya Sabha Griha: Kathmandu Municipality Balmiki Vidyapith: Mahendra Sanskrit University
Security	Fencing exists at all the sites
Access	All season road, year-round access to all the sites

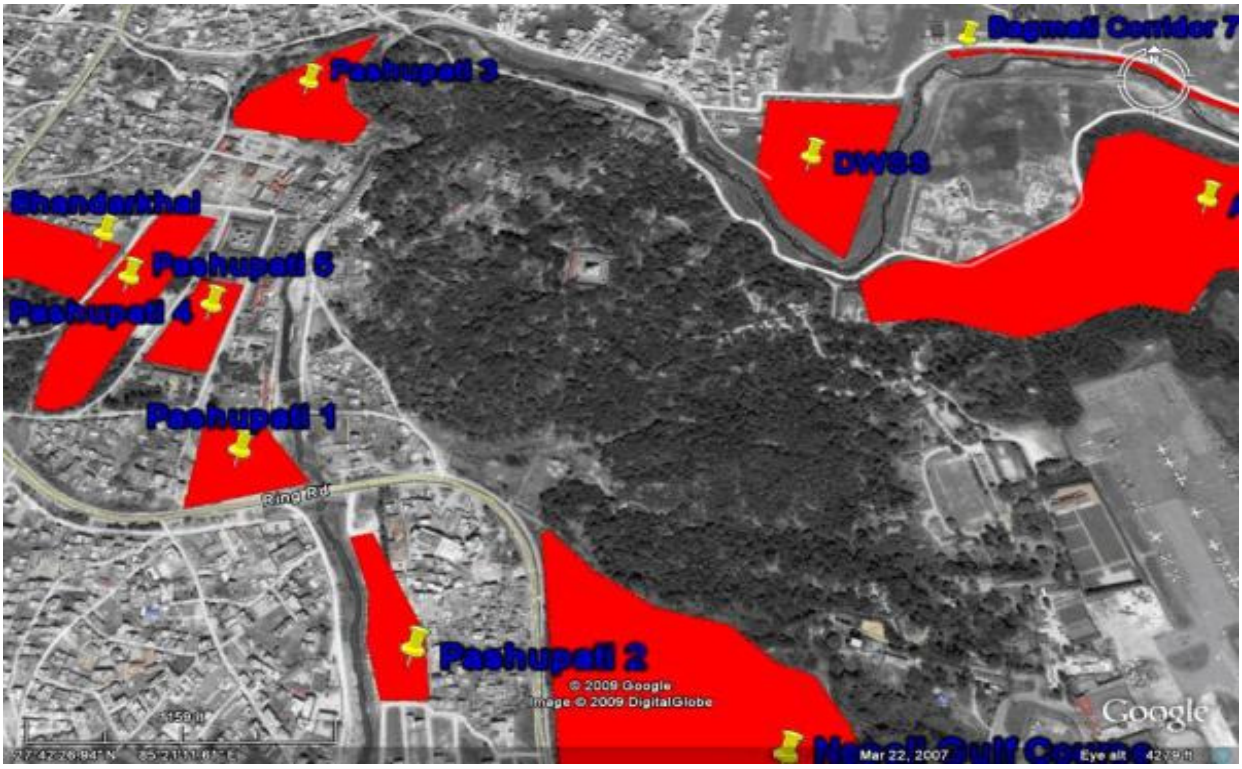
9. Baghbazar Sites

Item	Description
General Description	The sites are located in the densely populated central region of Kathmandu district.
GPS Coordinates	PadmaKanya Campus: 27°42'23.54"N; 85°19'15.66"E National Acadamy: 27°42'31.40"N; 85°19'14.83"E
Area	11,220 sq.m
Capacity	3,206 people
Special Features of Site	Ranipokhari large pond nearby the sites.
Significant features near the site (within 1 km)	1 Hospital, 6 Education Centers, and 1 Police Station
Implementation Issues	Expect IDPs from Bagbazar, Dillibazar areas Adequate wate supply Potential collective center at National Academy
Ownership	PadmaKanya Campus: Tribhuwan University National Academy: Ministry of Federal Affairs, Constituent Assembly, Parliamentary Affairs and Culture
Security	Fencing exists in all the sites
Access	All season road, year-round access to all the sites

10. Naxal Sites

Item	Description
General Description	The sites are located at North East of Kathmandu Valley inside the ring road.
GPS Coordinates	Nagpokhari Junction: 27°42'53.10"N; 85°19'32.03"E Nepal Bal Mandir: 27°42'49.19"N; 85°19'54.05"E Sano Gaucharan: 27°42'43.95"N; 85°19'59.48"E Sifal Ground: 27°42'40.63"N; 85°20'27.78"E
Area	41,172 sq.m
Capacity	11,763 population
Special Features of Site	Dhobi Khola intersects the identified sites
Significant features near the site (within 1 km)	4 Hospitals, 15 Education Centers, and 4 Police Stations
Implementation Issues	Expect IDPs Gyneshwor, Tangal, Naksal and Handigaun areas Adequate water supply Traffic management at Nagpokhari Junction
Ownership	Nagpokhari Junction: Kathmandu Municipality Nepal Bal Mandir: Ministry of Women, Children and Social Welfare Sano Gaucharan: Kathmandu Municipality Sifal Ground: Kathmandu Municipality
Security	Fencing exists in all the sites except Nagpokhari Junction, and Sifal Ground
Access	All season road, year-round access to all the sites

11. Greater Pashupati Sites

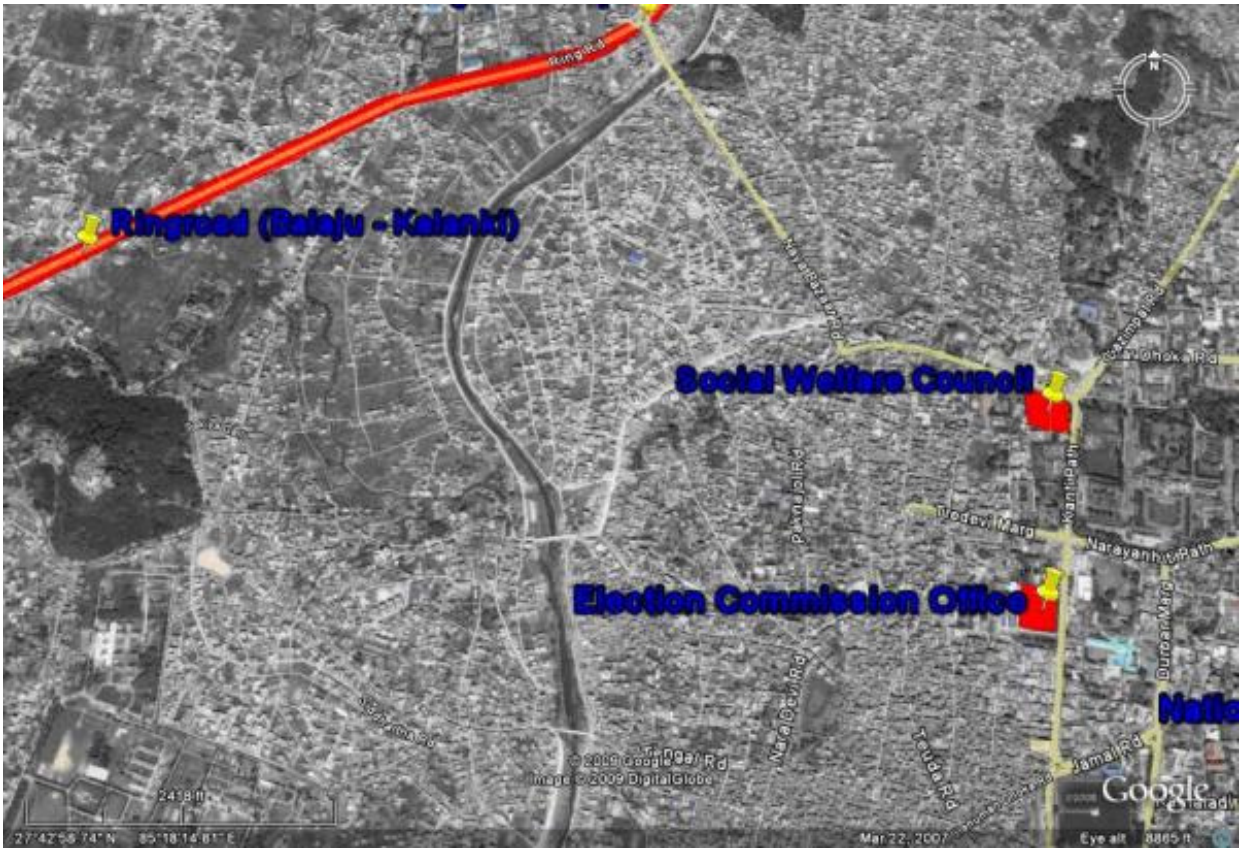


Item	Description
General Description	The sites are located North East corner of Kathmandu Valley. Deer Farming along with temperate forest exists in the periphery of the identified sites.
GPS Coordinates	Pashupati 1: 27°42'22.97"N; 85°20'53.82"E Pashupati 2: 27°42'14.31"N; 85°21'2.42"E Pashupati 3: 27°42'42.86"N; 85°20'54.77"E Pashupati 4: 27°42'30.13"N; 85°20'51.47"E Pashupati 5: 27°42'31.61"N; 85°20'47.21"E Bhandarkhal: 27°42'33.95"N; 85°20'45.55"E DWSS: 27°42'38.32"N; 85°21'21.12"E
Area	99,383 sq.m
Capacity	28,395 population
Special Features of Site	Bagmati river flowing nearby all the identified sites
Significant features near the site (within 1 km)	3 Hospitals, 8 Education Centers, and 2 Police Stations
Implementation Issues	Expect IDPs from Purano and Naya Baneshwor, Battisputali, Chabahil areas Adequate water supply Culturally sensitive areas because Hindus are only allowed to enter into these sites Expect that this area will be heavily occupied by people cremating their dead relatives Hygiene is a serious issue as there is unlikely to be sufficient wood to adequately dispose of the thousands of expected dead.
Ownership	Pashupati : Pashupati Development Trust Board Bhandarkhal : Pashupati Development Trust Board DWSS : Department of Drinking Water Supplies
Security	Fencing exists only in Nepal Golf Course towards road side Security Management required at all identified sites
Access	All seasons road, year-round access to all the sites.

12. Sinamangal Sites

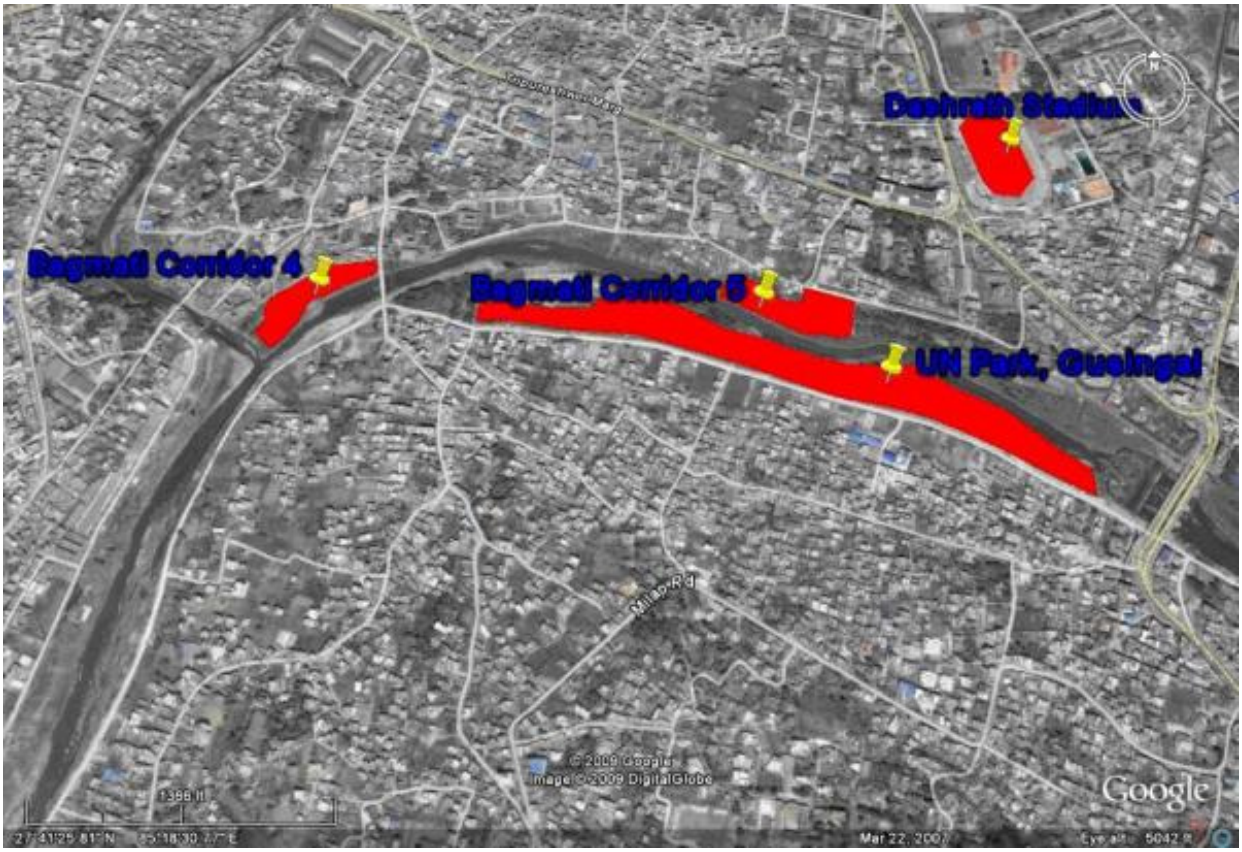
Item	Description
General Description	The sites are located eastern side of Kathmandu Valley, near the Tribhuvan International Airport.
GPS Coordinates	Civil Aviation 1 : 27°41'54.55 »N ; 85°21'13.59 »E Civil Aviation 3 : 27°41'36.76 »N ; 85°21'11.19 »E Tin Kune : 27°41'7.40 »N ; 85°20'55.72 »E Airport Central Dojo : 27°41'54.29 »N ; 85°21'17.53 »E
Area	91,137 sq.m
Capacity	26,039 population
Special Features of Site	International Airport is nearby the identified sites
Significant features near the site (within 1 km)	1 Hospital, 8 Education Centers, and 1 Police Station
Implementation Issues	Expect IDPs from Koteshwor, Naya Baneshwor, Gairigaon, Minbhawan areas Adequate water supply Stagnant water possible in the Tinkune area, subsurface drainage system management required
Ownership	Civil Aviation: Civil Aviation Department Tin Kune: Kathmandu Municipality Airport Central Dojo : Kathmandu Municipality
Security	Fencing exists in all the sites except Tinkune and Airport Central Dojo
Access	All season road, round-year access to all the sites.

13. Lainchaur Sites



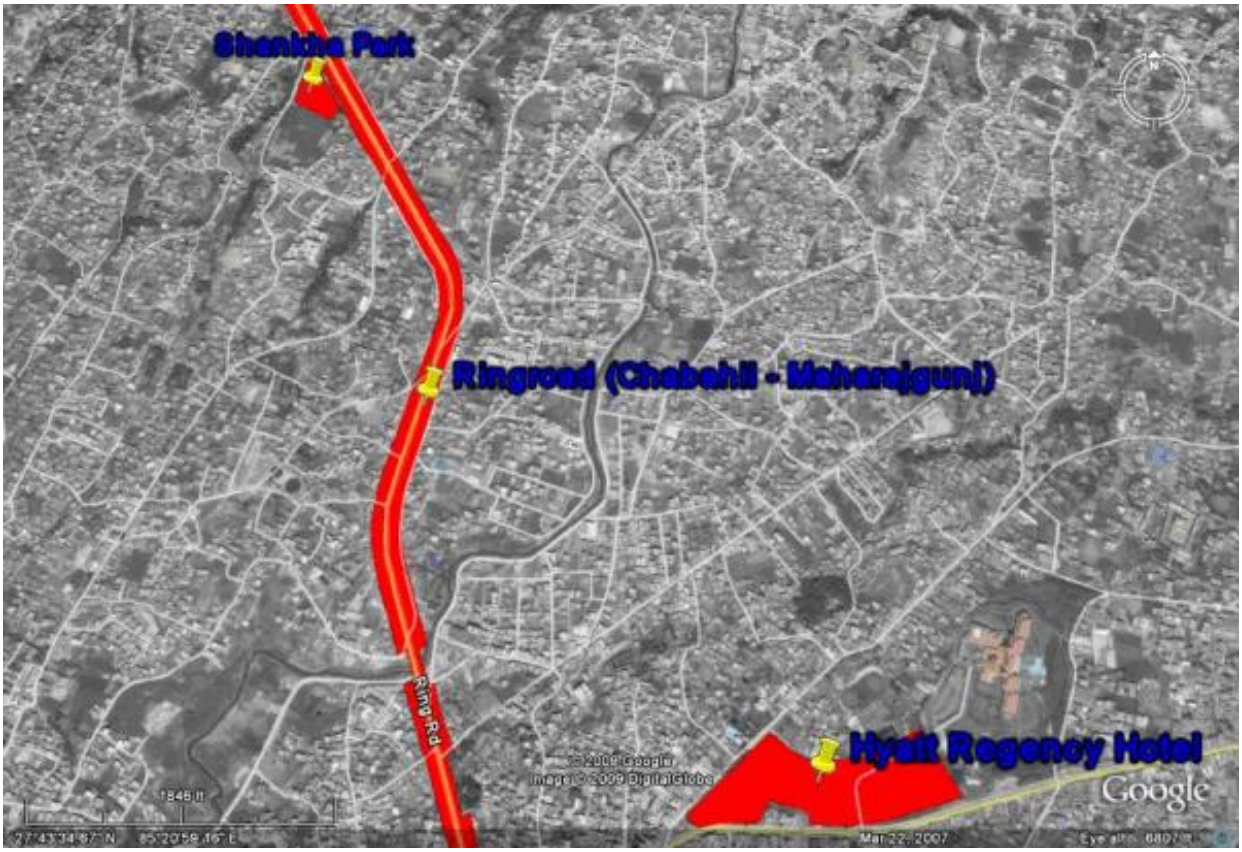
Item	Description
General Description	The sites are located at the center of Kathmandu district; with dense settlement near the identified sites.
GPS Coordinates	Social Welfare Council: 27°42'59.97"N; 85°18'55.50"E Election Commission Office: 27°42'43.44"N; 85°18'53.23"E Ringroad (Balaju-Kalanki): 27°43'14.20"N; 85°17'21.51"E
Area	95,390 sq.m
Capacity	27,254 population
Special Features of Site	Thamel is very densely populated and a popular tourist location. Narayanhiti Palace is close to the sites.
Significant features near the site (within 1 km)	3 Hospitals, 3 Education Centers, and 2 Police Stations
Implementation Issues	Expect IDPs from Thamel, Samakhusi, Lazimpat areas. These IDP could include a relatively high proportion of tourists. Management of a linear camp is challenging. The small central sites can only hold a very limited number so it can be expected that some internal movement to more appropriate camps (eg along the ring road) will be required. Adequate water supply
Ownership	Social Welfare Council: Ministry of Women, Children and Social Welfare Election Commission Office: Ministry of Law, Justice & Constituent Assembly Ringroad (Balaju-Kalanki): Department of Roads
Security	Fencing exists in all the identified sites
Access	All season road, year-round access to all the sites

14. Teku Sites



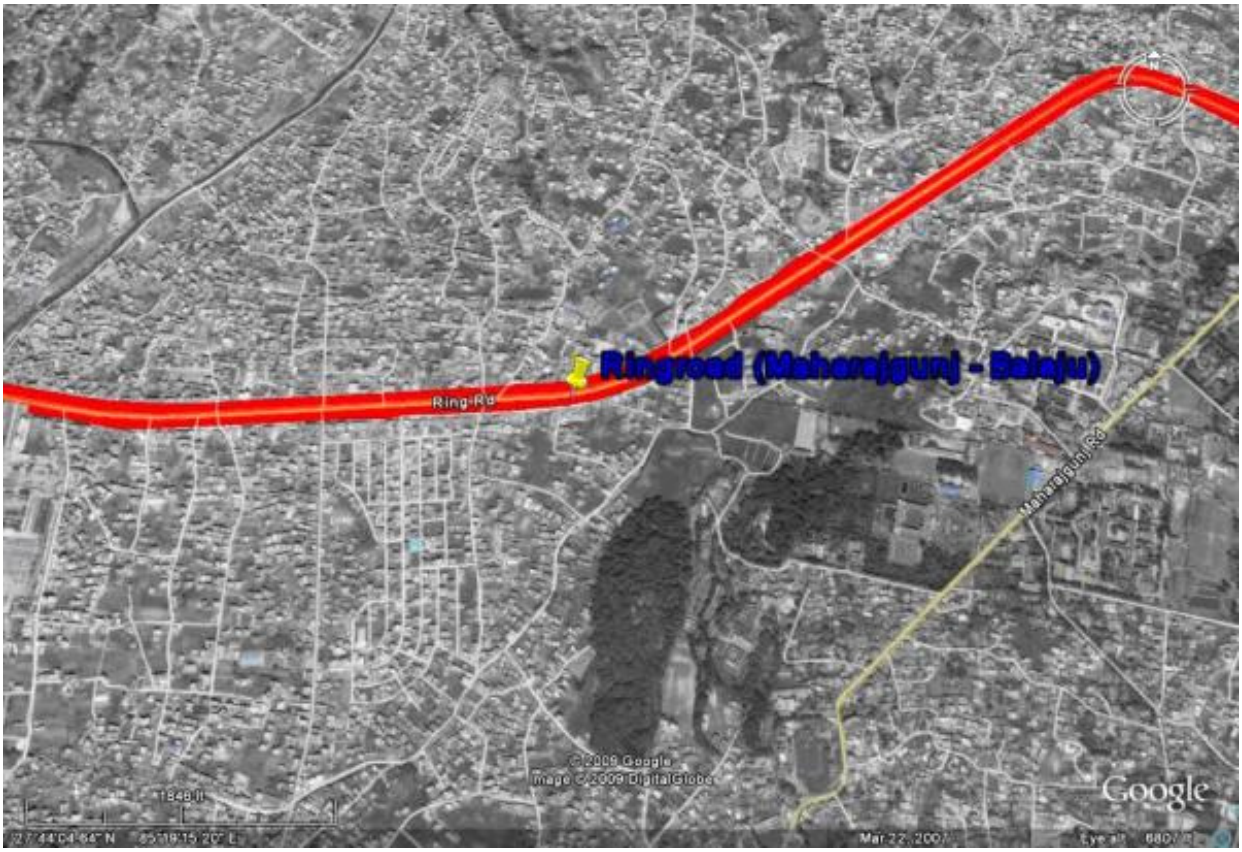
Item	Description
General Description	The sites are located south west of Kathmandu Valley, along the bank of Bagmati river.
GPS Coordinates	Bagmati Corridor 4: 27°41'33.16"N; 85°18'12.62"E Bagmati Corridor 5: 27°41'32.35"N; 85°18'38.90"E UN Park Gusingal: 27°41'28.09"N; 85°18'45.96"E Dasrath Stadium: 27°41'41.92"N; 85°18'54.84"E
Area	1,08,021 sq.m
Capacity	30,863 population
Special Features of Site	Bagmati river flows near the sites
Significant features near the site (within 1 km)	5 Hospitals, 6 Educational Centers, and 1 Police Station
Implementation Issues	Expect IDPs from Kupondole, Sanepa and Kalo Pul areas Potential collective center at Dashrath Stadium Adequate water supply Risk of flooding during the monsoon
Ownership	Bagmati Corridors: Kathmandu Municipality UN Park Gusingal: Ministry of Environment, Science & Technology Dasrath Stadium: National Sports Council/ Ministry of Youth and Sports
Security	Fencing exists only in Dashrath Stadium
Access	All season road, year-round access to all the sites

15. Chabahil Sites



Item	Description
General Description	The sites are located at northern side of Kathmandu district.
GPS Coordinates	Shankha Park: 27°44'0.19"N; 85°20'33.24"E Ringroad (Chabahil-Maharajgunj): 27°43'35.96"N; 85°20'44.32"E Hyatt Regency Hotel: 27°43'12.35"N; 85°21'12.34"E
Area	1,05,367 sq.m
Capacity	30,105 population
Special Features of Site	Dhobi Khola intersects the identified sites and Hyatt Regency Hotel and Boudha Stupa close to the sites
Significant features near the site (within 1 km)	2 Hospitals, 6 Education Centers, and 0 Police Station
Implementation Issues	Expect IDPs from Boudha, Chabahil, Bishalnagar, Dhumbarahi, Baluwatar, Maharajgunj and Bansbari areas Adequate water supply Management of a linear camp could be a challenge Hyatt Hotel offers accommodation and catering facilities which will be useful for camp management.
Ownership	Shankha Park: Kathmandu Municipality Ringroad (Chabahil-Maharajgunj): Department of Roads Hyatt Regency Hotel: Department of Drinking Water Supplies
Security	Fencing exist all the sites except ring road site.
Access	All season road, year-round access to all the sites.

16. Balaju Sites



Item	Description
General Description	The site is located northern side of Kathmandu Valley with proximity to Nagarjun Forest
GPS Coordinates	Ringroad (Maharajgunj-Balaju): 27°44'6.62"N; 85°19'11.44"E
Area	65,740 sq.m
Capacity	18,783 population
Special Features of Site	Balaju Industrial Estate and Nagarjun Forest are close to the site.
Significant features near the site (within 1 km)	4 Hospitals, 8 Education Centers, and 3 Police Stations
Implementation Issues	Expect IDPs from Balaju, Gongabu, Lazimpat, Panipokhari, and Dhapasi areas Adequate water supply Some areas may suffer from drainage problems, especially during the monsoon Management of a linear camp could be a challenge
Ownership	Ringroad (Maharajgunj-Balaju): Department of Roads
Security	Open area, so security management required
Access	All season road, year-round access to the site.

17. Sallaghari Tinkune, Bhaktapur

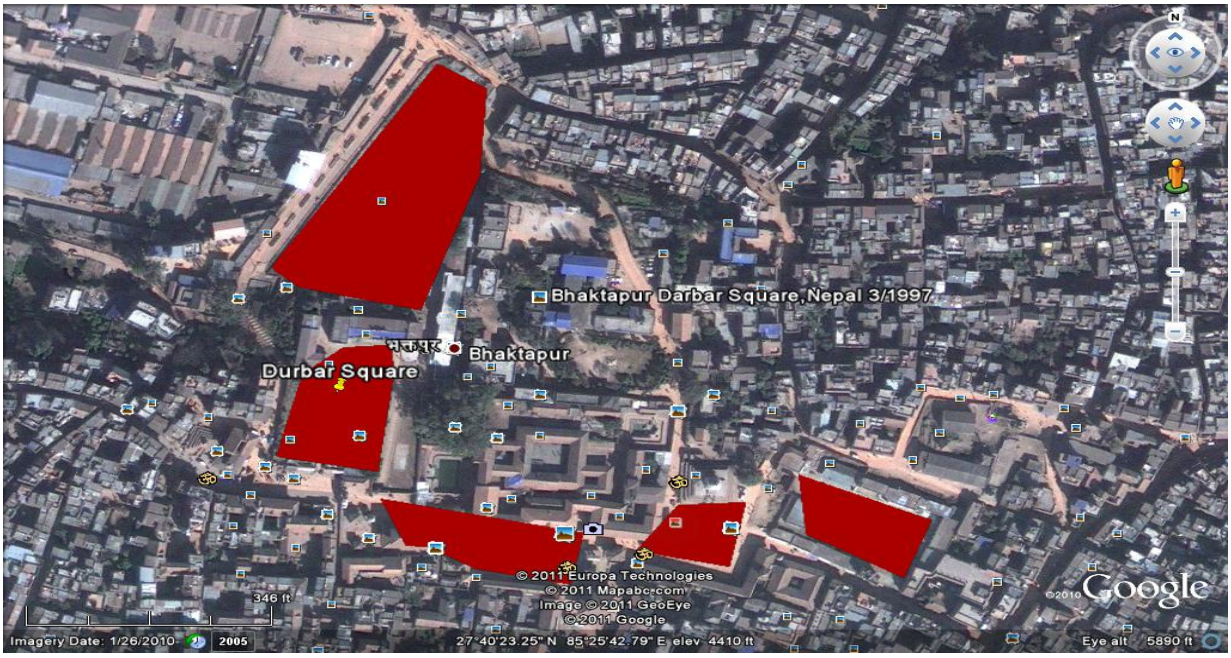
Item	Description
General Description	Sallaghari Tinkune is a flat ground and is clear of buildings. To the south of the site is Arniko Highway**.**
GPS Coordinates	27º 40´ 26.93¨ N / 85º 24´ 22.13¨ E
Area	55,859 sq meters
Capacity	15, 960 population (3.5 sq. meters per person)
Special Features of Site	A river runs towards north of the site.
Significant features near the site	• Iwamura Hospital, Nicholshan College, Chonga Ganesh Temple and Birendra Sainik Awasiya Mahavidyalaya is nearby the site.
Implementation Issues	• Expect IDP from Thimi, Suryavinayak, Nagarkot areas. IDP from Nagarkot could also include tourists. • Adequate water supply • Liquefaction could be a problem as a river flows towards north of the area. • Drainage could be a problem especially during monsoon season.
Ownership	Bhaktapur Municipality
Security	The site is not fenced.
Access	All season road, year- round access to the site.
Trees and vegetation	The area consists of grassland

18. Taumadi, Talako, Bhelukhel and Nasamana

Item	Description
General Description	These sites are located in densely populated area of Bhaktapur City. Bhelukhel is close to the manure production site in Bhaktapur.
GPS Coordinate	Taumadi: 27°40'16.27N/ 85° 25'45.46"E Talako: 27°40'13.82"N/ 85°25' 38.12" E Nasamana: 27°40'12.91"N/ 85°25'38.30" E Bhelukhel: 27°40'08.97" N/ 85°25' 46.80" E
Area	5778 sq. m
Capacity	1651 population (3.5 sq. m per person)
Special Features of Site	Taumadi Square is famous for Nyatapol or 5 storey temple and Talako is famous for pottery. Both of these sites are located in central Bhaktapur. Agricultural field is located near to Bhelukhel. Bhelukhel site is used to set up chariots during special functions.
Significant features near the site	Police Station including several temples: Bhairabnath, Pashupati Nath, Siddhi Laxmi and Talako Ganesh is cloase to these site. Siddhi Memorial Hospital and Kathmandu University's Department of Music is near to Bhelukhel.
Implementation Issues	• Provision of sufficient drinking water. • Ancient temples in these areas may not withstand a major earthquake.

	• These sites are located in densely populated area. Old buildings are adjacent to roads. • Possibility for debris clearance for setting up camps in the area.
Ownership	Taumadi: Guthi Sansthan Talako: Bhaktapur Municipality Nasamana: Bhaktapur Municipality Bhelukhel: Bhaktapur Municipality
Security	None of the sites is fenced.
Access	All season road, year round access to the sites
Trees and vegetation	No trees and grasses; these area are stone topped.

19. Bhaktapur Durbar Square, Padma High School and Vidyarthi Niketan



Item	Description
General Description	This site is included under UNESCO World Heritage Site and includes many ancient structures and a famous 55 windows palace build during 1427 AD. This area is one of the major attractions for tourists in Bhaktapur. Vidyarthi Niketan lies towards north- east of Durbar Square.
GPS Coordinate	Bhaktapur Durbar Square: 27º 40´ 23.25 ¨ N / 85º 25´ 42.79 ¨ E Padma High School: 27°40'22.68"N/ 85°25'38.72"E Vidyarthi Niketan: 27° 40' 21.00"N/ 85°25' 48.97" E
Area	18, 841 m^2
Capacity	5, 383 population (3.5 sq. m per population)
Special Features of Site	• The site incorporates a historical palace and many temples. • Vidhyarthi Niketan incorporates buildings in the northern part of the site and an open spaces towards south of the area. • Provision of toilets and water taps in the area.
Significant features near the site	• Police Station, 3 schools, temples and restaurants are located near to the area.
Implementation Issues	• Provision of sufficient drinking water. • Possibility of reservation for incorporating a World Heritage Site as IDP camp site.
Ownership	Durbar Square: Department of Archeology Padma School: Ministry of Education Vidhyarthi Niketan: Ministry of Education
Security	Durbar Square: The site is open and not fenced in any sides but has a district police station near by the area. Padma School: This site is fenced on all sides. Vidhyarthi Niketan: Partially fenced

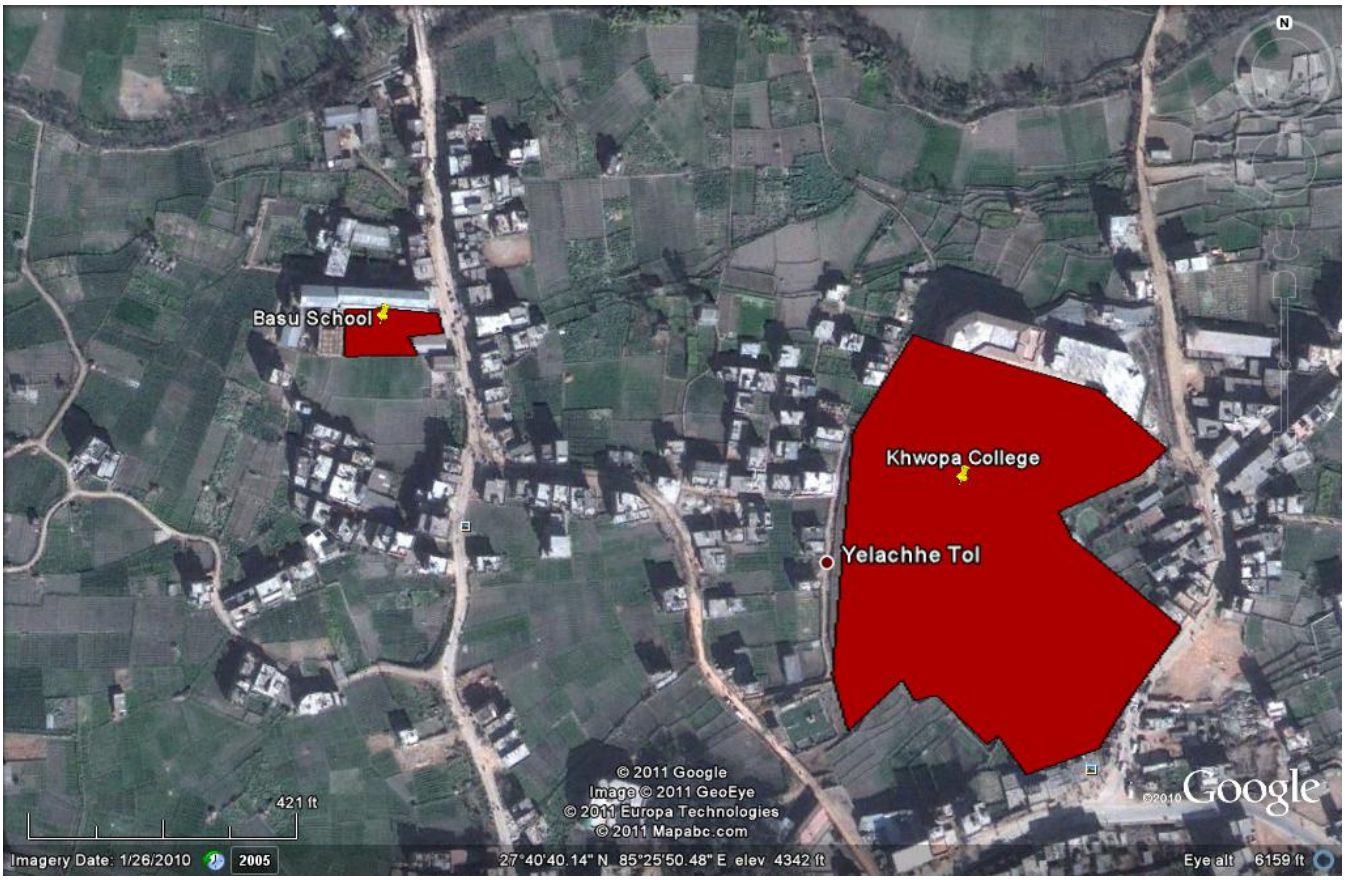
Access	All season road, year round access to the sites
Trees and vegetation	Durbar Square: No trees and grasses; the area is stone topped. Padma School and Vidhyarthi Niketan: the area is free of vegetation however is not stone topped.

20. Dattratya, Saraswati Vidyagriha, Suryamadi and Kwathandu

Item	Description
General Description	Dattrataya Square is named after a temple Dattrataya, which is situated in the middle of the square. Saraswati Vidhyagriha is situated close to Kamalvinayak Buspark and Kwathandu is situated in densely populated area of Bhaktapur.
GPS Coordinate	Dattrataya: 27º 40´ 24.21¨ N / 85º 26´ 07.14¨ E Suryamadi: 27°40’ 37.65” N/ 85° 25’ 58.61” E Saraswati Vidyagriha: 27° 40’ 32.15” N/ 85°26’ 13.04” E
Area	6, 210 sq. meters
Capacity	1,774 population (3.5 sq. meters per person)
Special Features of Site	• Presence of water sprouts and separate toilets for male and female. • A pond is situated in the middle of the open area of Kwathandu.
Significant features near the site (within 1 km)	• Temples: Bhimsen and Bakupati Narayan, Navadurga, Sija Mahadev and Balkumari are close to the sites. • A pond lies near Saraswati Vidyagriha School • Kamalvinayak Bus park is close to the sites.
Implementation Issues	• Provision of adequate water. • Management of a linear camp could be a challenge • Ancient temples like Dattrataya might not withstand a major earthquake. Therefore, chances of debris clearance for setting up camps in the area. • Expect IDP from Suryavinayak areas. • Drainage could be a challenge for Saraswati Vidyagriha, especially during monsoon season.

Ownership	Dattrataya: Guthi Sansthan Surya Madi: Bhaktapur Municipality Kwathandu: Guthi Sansthan Saraswati Vidyagriha: Ministry of Education
Security	None of the sites are fences.
Access	All season road, year- round access to the site
Trees and vegetation	Open space of Saraswati Vidyagriha consists of a grassland whereas for other sites, the area is stone topped.

21. Khwopa College and Basu School

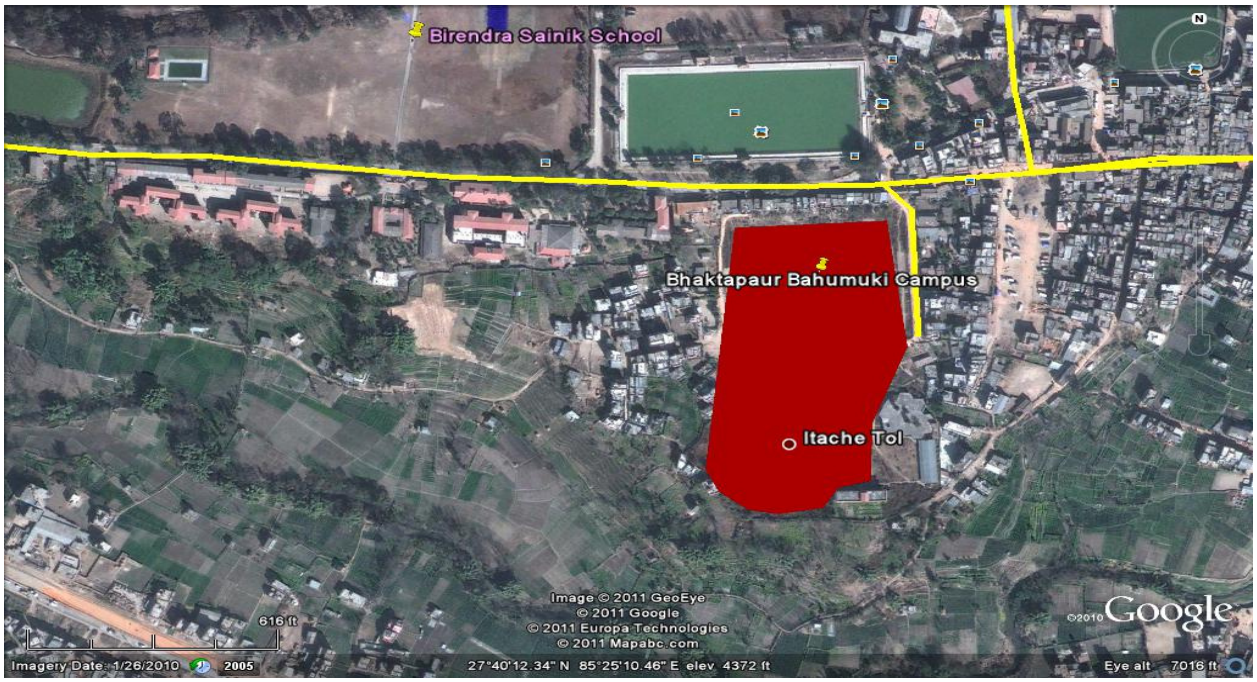


Item	Description
General Description	This site is situated towards east of Bhaktapur Durbar Square.
GPS Coordinate	Khwopa College: 27º 40´ 37.65¨ N / 85º 25´ 58.61¨ E Basu School: 27º 40´ 41. 25¨ N / 85º 25´ 46. 30¨ E
Area	23, 512 sq. m
Capacity	6, 718 population (3.5 sq. meters per person)
Special Features of Site	• This site falls on the way to Changunarayan Temple. • For Khwopa College, concrete building is situated on the east of the site and open area on the west of the site. • Presence of water and toilet facility.
Significant features near the site (within 1 km)	• Presence of agricultural land around the site. • Bageshwori Higher Secondary School and Khwopring English Academy is nearby the sites.
Implementation Issues	• Expect IDPs from surrounding areas such as Nagarkot and Changunarayan • Drainage could be a problem especially during monsoon season.
Ownership	Khwopa Collge: Bhaktapur Municipality Basu School: Ministry of Education
Security	The site is fenced on all the sides.
Access	All season road, year- round access to the site
Trees and vegetation	Open space consists of grassland and few trees.

22. Kwopa Engineering College

Item	Description
General Description	This site is situated towards east of Durbar Square of Bhaktapur.
GPS Coordinate	27º 40´ 14.02¨ N / 85º 26´ 21.12¨ E
Area	8080 sq. m
Capacity	2, 309 population (3.5 sq m per person)
Special Features of Site	• Presence of concrete building on the north of the site and open area on the south of the site. • Presence of drinking water and toilet facility. • Presence of concrete basketball court and parking area. • Situated near to Khwopa Nursing College
Significant features near the site (within 1 km)	• Agricultural land around the site.
Implementation Issues	• Expect IDPs from surrounding areas such as Nagarkot and Suryavinayak. • Setting up camps in the open grass land could be a problem especially during monsoon season.
Ownership	Bhaktapur Municipality
Security	The site is fenced on all the sides.
Access	All season road, year- round access to the site
Trees and vegetation	Open space consists of grassland and basket ball court is concrete area.

23. Bhaktapur Bahumukhi Campus



Item	Description
General Description	This site is located towards south of the main road leading to Bhaktapur Core City.
GPS Coordinate	27°40'12.34"N/ 85°25' 10.46"E
Area	38,115 m^2
Capacity	10, 890 population (3.5 sq m per person)
Special Features of Site	• The site incorporates three concrete building to the west and south of the open space. Toilet and drinking water facilities exist in the area.
Significant features near the site (within 1 km)	• Army Barrack, Army School and Siddha pokhari is nearby the area.
Implementation Issues	• Has a single entrance to the site. • Drainage could be a problem especially during monsoon season.
Ownership	Tribhuwan Univeristy/ Ministry of Education
Security	The site is partly fenced.
Access	All season road, year- round access to the site
Trees and vegetation	Open Space includes a football ground with grasses.

24. Maheshwori Football Ground and Adarsha Azad Higher Secondary School

Item	Description
General Description	The sites are located towards south and east of densely populated Bhaktapur City.
GPS Coordinate	Maheshwori Football Ground: 27°40'11.31"N/ 85°26'07.20"E Adarsha Azad School: 27°40'04.83"N/ 85°25'55.31"E
Area	10,793 m^2
Capacity	3, 084 population (3.5 sq. m per person)
Special Features of Site	Maheswori Football Ground: The concrete building lies towards west of the site and open space towards east. Adarsha Azad: Presence of drinking water tap and toilet facility in the area. Agricultural fields located towards west and south of the area.
Significant features near the site (within 1 km)	• Maheswori Football Ground- Hanuman Ghat/ Shivalinga, Khwopa Engineering College, Muni Bihar • Adarsha Azad- Siddhi Memorial Hospital, manure production site and Kathmandy University Department of Music.
Implementation Issues	• Drainage could be a problem especially during monsoon season. • Provision of adequate water
Ownership	Maheswori Football Ground : Ministry of Education and Sports Adarsha Azad: Ministry of Education

Security	Maheswori Football Ground : The site is fenced on all the sides. Adarsha Azad: The site is partially fenced.
Access	All season road, year- round access to the site
Trees and vegetation	Open space with no tree and vegetation

Compiled information of the identified camp sites:

S. No	Name of Sites	Total Area (sq. m)	Population per 3. 5 sq.m Preparedness required for immediate influx	Population per 10 sq.m Some of site service	Population per 45 sq.m Sphere Standard
1	National Agriculture Reseach Centre	305, 470	87, 277	30, 547	6, 788
2	Tribhuwan University (Large Camp)	875, 043	250, 012	87, 504	19, 445
3	Ratna Park 1	155, 400	44, 400	15, 540	3, 453
4	Airport/ Golf Club	253,327	72, 379	25,332	5, 629
5	Airpot (Civil Aviation)	146,575	41, 878	14,657	3, 257
6	Oxygenation Park	146, 604	41, 886	14, 660	3, 257
7	Gokarna Golf Club	178, 212	50, 917	17, 821	3, 960
8	Birendra Sainik School	134, 564	38, 446	13, 456	2, 990
9	Satdobato	63, 077	18, 022	6,307	1, 401
10	Balkumari	44, 877	12, 822	4, 487	977
11	Jwalakhel	71, 824	20, 521	7, 182	1, 596
12	Pulchowk	11, 676	3, 336	1, 167	259
13	Pulchowk Engineering College	112, 422	32, 120	11, 242	2, 498
14	Lagankhel	49, 818	14, 234	4, 981	1, 107
15	Tribhuwan University (Medium Camp)	209, 491	59, 855	20, 949	4, 655
16	Ranta Park 2	13, 494	3, 855	1, 349	299
17	Baghbazar	11, 220	3, 205	1, 122	249
18	Naxal	41, 172	11, 763	4, 117	914
19	Greater Pashupati	99, 383	28, 395	9, 938	2, 208
20	Sinamangal	91, 137	26, 039	9, 113	2, 025
21	Lainchaur	95, 390	27, 254	9,539	2, 119
22	Teku	108, 021	30, 863	10, 802	2, 400
23	Chabahil	105, 367	30, 105	10, 536	2, 341
24	Balaju	65, 740	18, 783	6, 574	1, 460
25	Sallaghari Tinkune	55, 859	15, 960	5, 585	1, 241
26	Taumadi, Talako, Bhelukhel and Nasamana	5, 578	1, 651	557	123
27	Bhaktapur Durbar Square, Padma High School and Vidyarthi Niketan	18, 841	5, 383	1, 884	418
28	Dattrataya, Saraswati Vidyagriha, Suryamadi and Kwathandu	6210	1, 774	621	138

29	Khwopa College and Basu School	23, 512	6, 718	2, 351	522
30	Khwopa Engineering College	8, 080	2, 309	808	179
31	Bhaktapur Bahumukhi Campus	38,115	10, 890	3, 811	847
32	Maheshwori Football Ground and Adarsha Azad Higher Secondary School	10, 793	3, 084	1, 079	239
	Total		**1, 016, 136**	**355, 618**	**78, 994**

Appendix 4 – Potential Collective Center Locations

Place	Address
Lalitpur Municipality	
Patan Industrial Estate	Satdobato
Nepal Food Corporation	Nakhu
Patan College	Patan Dhoka
Pulchowk Engineering College	Pulchowk
ANFA Complex	Satdobato
Administrative Staff College	Jawalakhel
Sajha Yatayat Bus Terminal	Hariharbhawan
Kathmandu Municipality	
Himal Cement Company	Chovar
Balaju Industrial Estate	Balaju
National Trading Limited	Teku
Dashrath Stadium	Tripureshwor
Bhirkuti Mandap	Pradarshani Marg
National Dance House	Pradarshani Marg
National Academy	Kathmandu Plazza
Padma Kanya Campus	Putali Sadak
Nepal Food Corporation	Thapathali
Nepal Trolly Bus Office	Conference Hall
Bhaktapur Municipality	
Bhaktapur Industrial Estate	Bhaktapur
Sallaghari Tinkune	Sallaghari
Bhaktapur Buspark	Kamalvinayak
Surya Binayak Chowk	Surya Binayak
Maheshwori Football Ground	Bhaktapur