



Sustainable Neighborhood Plan CAMINO REAL, CUSCO



GOBIERNO
MUNICIPAL DEL
CUSCO



ECOCITY
BUILDERS

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Acknowledgements

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Special thanks for the contributions from:

EGEMSA

ELECTROSUR

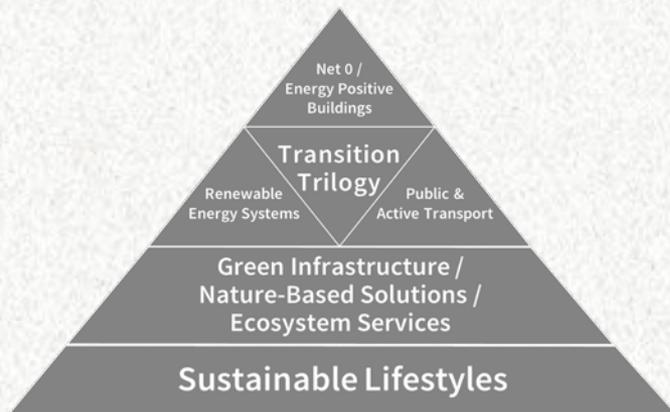
SEDACUSCO

Ministry of Culture

Ministry of Health

Ministry of Education

UNEP Neighborhood Approach



A complete systems approach to a deep transition to sustainable urban development with low-carbon, resource-efficient and resilient infrastructure and infrastructure, through multisectoral and cross-sectoral governance, innovation laboratories at the neighborhood level and scaling through preparedness financial and new financing mechanisms.

"The neighborhood approach: transformative and integrated urban sustainability at the community level"

The United Nations Environment Cities Unit believes that by working at the neighborhood level, communities can transform their cities. Communities have the power to test innovative solutions in their neighborhoods to some of the most complex and pressing challenges: equity, cross-sectoral integration, governance and finance, so that they respond better to their specific needs.

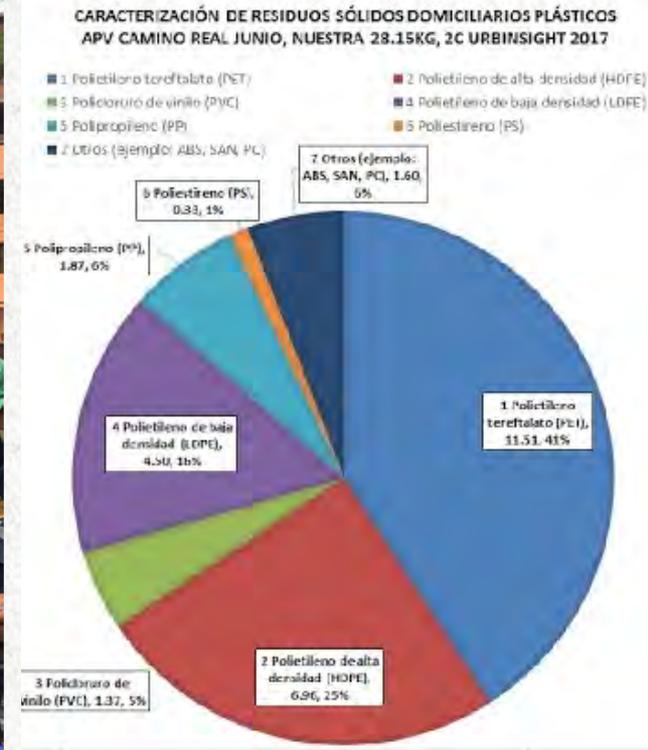
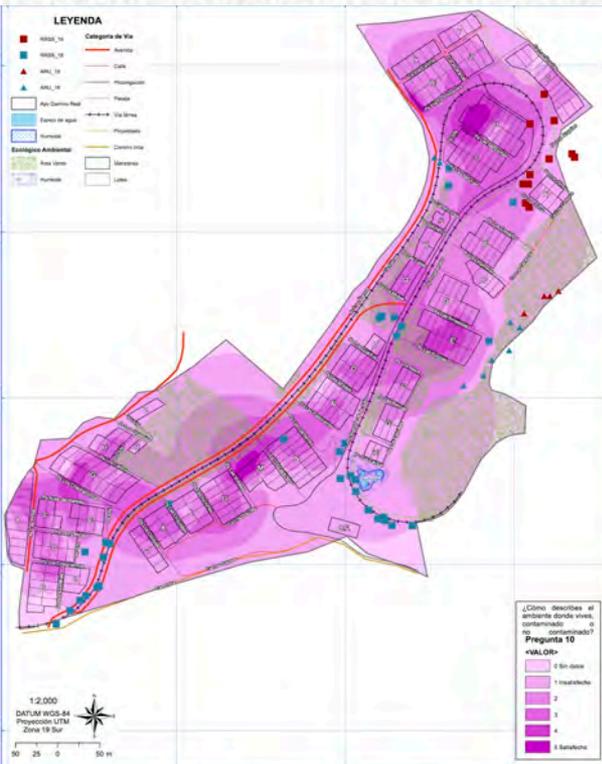
Neighborhood Approach

Taking lessons from neighborhood-scale initiatives in cities around the world, the Neighborhood Approach will describe a new way for cities, planners and communities to consider their urban development strategies with integrated and transformative sustainability in mind. By adopting a complete systems approach, Neighborhood Approach helps communities solve multiple challenges with integrated solutions.

It incorporates community commitment and changes in lifestyle to ensure self-sustaining long-term success. It helps cities and communities to address some of the most complex questions about enablers of sustainable development, such as governance and financing, as well as to understand how sustainable urban development can promote equity and avoid the gentrification impacts often associated. Finally, look for propagation strategies beyond the neighborhood level to bring successful solutions to scale.

Ecocity Builders (ECB) first began their work in Cusco in 2015 when they implemented the Urbinsight - Cusco through a partnership with the the Secondary Cities Program (2C) of the US Department of State. Urbinsight is a participatory planning initiative developed by ECB for information generation, community planning and education, rooted in geospatial and urban metabolic technology, driven by a triangular partnership between local government, academia and citizens. The approach is applied at the neighborhood level.

In Cusco, ECB partnered with 2C, the Municipality of Cusco's Planning Department, the University - Alas Peruanas (UAP) and community leaders from the historic neighborhood of San Pedro. Through a participatory process the intersectoral team focused its research on issues of solid waste in the San Pedro neighborhood. As with all Urbinsight projects, the process was held together through the structure of the Urbinsight course which was hosted at Alas Peruanas. ECB, the Cusco Planning Department and UAP staff teamed to facilitate the Urbinsight course and teach 26 Environmental Engineering university students to a) facilitate an ethical and participatory data collection and research project and b) develop information-based maps using GIS and neighborhood, city-wide and national data. The students conducted more than 300 community surveys on waste problems in the San Pedro neighborhood! They also audited 26 homes to develop a materials-based Urban Metabolism Information System. They geospatially analyzed the data collected and the



UAP research group worked closely with ECB staff, the municipal government, and community members to develop a series of actionable proposals to improve neighborhood garbage collection services and reduce waste production waste promoting circular economy solutions.

Later in 2016, ECB returned to Cusco with a second round of funding through the Secondary Cities program. Building off the earlier efforts, they began proposal implementation in the neighborhood of San Pedro in 2016. ECB teamed with a Ingenio Verde, a student run organization born out of the Urbinsight 2015-2016 course, to facilitate an action oriented internship program with select students from the year prior's Urbinsight course.

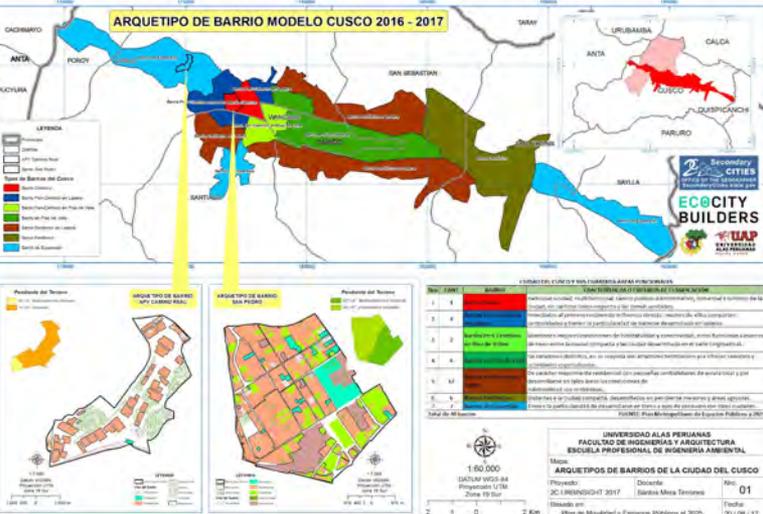
Interns reviewed the final outcomes of the course and worked with community members to select one actionable proposal to be implemented through the internship: a community facilitated compost program

to reduce organic waste in the streets, prevent dogs from tearing open bags and ultimately dispersing waste into streets and waterways. The interns worked directly with community leaders from San Pedro and other neighborhoods of the Historic archetype to design and test the compost program. The team develop a replicable household model that the initial community leaders could then teach their neighbors to build. The interns developed a guide with materials, best practices and contact information for anyone interested. Today there are 21 compost models throughout the Historic neighborhoods of Cusco.

While implementation efforts continued in the Historic neighborhoods, ECB moved to focus on a new neighborhood archetype and further develop their neighborhood archetype model for Cusco. They began the Urbinsight initiative from scratch in Camino Real, a newer neighborhood in the Northwestern sloped region of the Cusco City valley. Camino Real was recommended by Abel Gallegos as a critical neighborhood for the Planning Department based on its location and the socio-economic and physical features that Camino Real shares with a large number of communities throughout the City.

Camino Real also boasted an enthusiastic, young and sustainably-minded neighborhood president at that time, Guido Jara Ugarte. Ugarte was working to complete his Masters in Sustainable Tourism and he and members of the Camino Real community shared a vision for their neighborhood as an Eco-Barrio (ecologically focused neighborhood). Gallegos was interested in forging a relationship with Ugarte in an effort to join forces and promote sustainability in the Northwest of Cusco.

In 2017, UNEP invited ECB to test the UNEP Neighborhood Approach in Cusco. ECB and the Planning Department of the Municipality of Cusco together selected Camino Real to one, take advantage of the existing relationships and two, build on the Urbinsight research, maps, data, and UMIS studies generated in the previous year Urbinsight implementation. Furthermore, much like the ECB approach, an important component to the UNEP Neighborhood Approach is the replicability of the plan proposals, and Camino Real was initially selected for its socio-economic and physical characteristics which it shares with other neighborhoods of Cusco, lending its plan to replicability throughout Cusco.



Introduction to Camino Real

Camino Real is a neighborhood in the Northwest of the city of Cusco and is the first neighborhood of Cusco that is seen when entering the city by car or bus from other regions of Peru. The neighborhood was formed on July 28 in 1991. Historically the territory of the APV was part of one of the former haciendas surrounding the city of Cusco. Now, the population is approximately 2000 people and is a mixture of immigrants from various regions of the Cusco Region: Apurimac, Anta, La Convención and Paucartambo. It is a neighborhood of 314 homes occupied by families who are organized by a Pro-Life Association (APV).

The APV of Camino Real has a strong and passionate Leadership Council, made up of a group of young leaders. The Leadership Council developed a Strategic Plan to improve the basic conditions of the neighborhood and to develop an economy of Eco-Tourism. The neighborhood has an opportunity to be an attractive place for residents of Cusco and tourists alike because it is 50% green space and can be connected to a network of trails through the Saphy River basin and the archaeological park of Sacsayhuaman. Though attractive to outsiders for its scenic green spaces, Camino Real residents live with inadequate water services, garbage collection, transportation, pedestrian routes and economic opportunities.



Ecocity International Standards

Ecocity Builders applied the International Ecocities Standards (IES) for sustainable urban systems and human habitats as a framework to understand the existing conditions within Camino Real and to design a neighborhood plan for sustainability in a participatory effort. Led by Ecocity Builders with input from eco-city activists and academics, the IES seeks to describe the conditions for a restorative and ecologically sound human presence on earth, as well as a practical methodology to help design, evaluate and guide the path towards the achievement of an ecocity civilization. The Ecocity Framework is composed of 15

standards in four categories: urban design, bio-geophysical characteristics, socio-cultural characteristics and ecological imperatives. It is a diagnostic tool for cities and citizens to measure progress towards the conditions of the ecocity. Designed for a wide range of users, including novices and experts, the Framework traces the steps ahead of a city: from the existing conditions to the "threshold" ecocity standards and more. A city reaches Ecocity Level 1 when it achieves a positive score in all categories. This level in the Standards covers measures related to social justice and life on a planet, including food security, welfare, ecological footprint and GHG emissions based on consumption. There are two more levels, Ecocity Level 2 and Ecocity Level 3, which are steps to become a city of GAIA. The GAIA concept is derived from the system of holistic systems of the earth that is capable of maintaining a homeostatic (ie, stable) state in which all life thrives.



ECOCITY STANDARDS



	Unhealthy -10	Greener City 1 -7.5	Greener City 2 -5	Greener City 3 -2.5	Eco City 1 2.5	Eco City 2 5	Healthy 7.5	Gold Level 10
Urban Design								
Access by Proximity	Low - Amenities Not Within Walking Distance				Walkable, Accessible			Complete & Sustainable
Safe and Affordable Housing	Unsafe, Unaffordable				Safe, Affordable			Safe, Affordable
Green Building	Resource Inefficient, Wasteful, Unhealthy				Resource efficiency, Healthy			Regenerative
Environmentally Friendly Transportation	Environmentally Damaging				Does not Damage			Improves Environment
Bio Geo Physical Features								
Air	Pollutes				Clean			Purifies
Water	Pollutes - Wastes				Clean and Safe			Purifies
Soil	Destroys				Healthy			Restores
Material Resources	Depletes				Responsible			Sustains
Energy	Nonrenewable				Clean and Renewable			Clean and Renewable
Food	Does Not Provide				Healthy and Accessible			Nutritious and Abundant
Socio Cultural Features								
Culture	Unsupported				Healthy, Supported			Nurtured
Community Capacity and Governance	Non Cooperative/Not Well Organized				Healthy, Participatory			Highly Organized/ Highly Cooperative
Economy	Destroys Nature's Economy				Healthy and Equitable			Restores Nature's Economy
Education	Not Provided				Lifelong, Accessible			Provide for All
Well Being	Violent, Unjust				Quality of Life Satisfaction			Justice, Peace & Contentment
Ecological Imperatives								
Biodiversity	Endangered				Healthy			Sustains
Carrying Capacity	Overhoot				Low Impact			Within the Biosphere's Limits
Ecological Integrity	Weak, Unhealthy				Healthy			Strong, Restorative
Total Score								



Air: The city maintains a level of air quality that is conducive to good health within buildings, the city’s air shed, and atmosphere.

Water: Residents have sufficient and continuous access to convenient and affordable clean drinking-water and domestic use water; city water sources, waterways and waterbodies are healthy and function without negative impact to ecosystems.

Soil: Soils functions and operations meet their ranges of healthy ecosystem functions as appropriate to their types and environments; fertility is maintained or improved.

Materials (Solid Waste): Non-food and non-energy renewable and non-renewable resources are sourced, allocated, managed and recycled responsibly and equitably, and without adversely affecting human health or the resilience of ecosystems.

Energy: Energy is provided for, and extracted, generated and consumed without significant negative impact to ecosystems or to short or long- term human health and does not exacerbate climate change.

Food: Sufficient amounts of healthy and nutritious food are accessible to all and are grown, manufactured, distributed and recycled by processes which maintain the healthy function of ecosystems and do not exacerbate climate change.



Access by Proximity: The city provides residents with walkable access between safe and affordable housing, basic urban services, and open/green space. It demonstrates environmentally friendly transport options and provides walking and transit access to close-by employment.

Safe and Affordable Housing: Dwellings are affordable, including to low income households, are in a reasonable state of repair with operational facilities and services, provide thermal comfort, and are protected from environmental or human caused hazards.

Construcciones Verdes: New buildings and renovations are assessed in terms of environmental sustainability and green building standards.

Environmentally Friendly Transport: Non-motorized transportation is supported and encouraged by the city and is used by a significant proportion of people for trips under 5 km. Mode split aims towards the access-by-proximity principle with 80% of trips made by walking, bicycling or low emissions public transportation.

Healthy Culture: Cultural activities that strengthen eco-literacy, patterns of human knowledge and creative expression are facilitated, symbolic thought and social learning is developed.

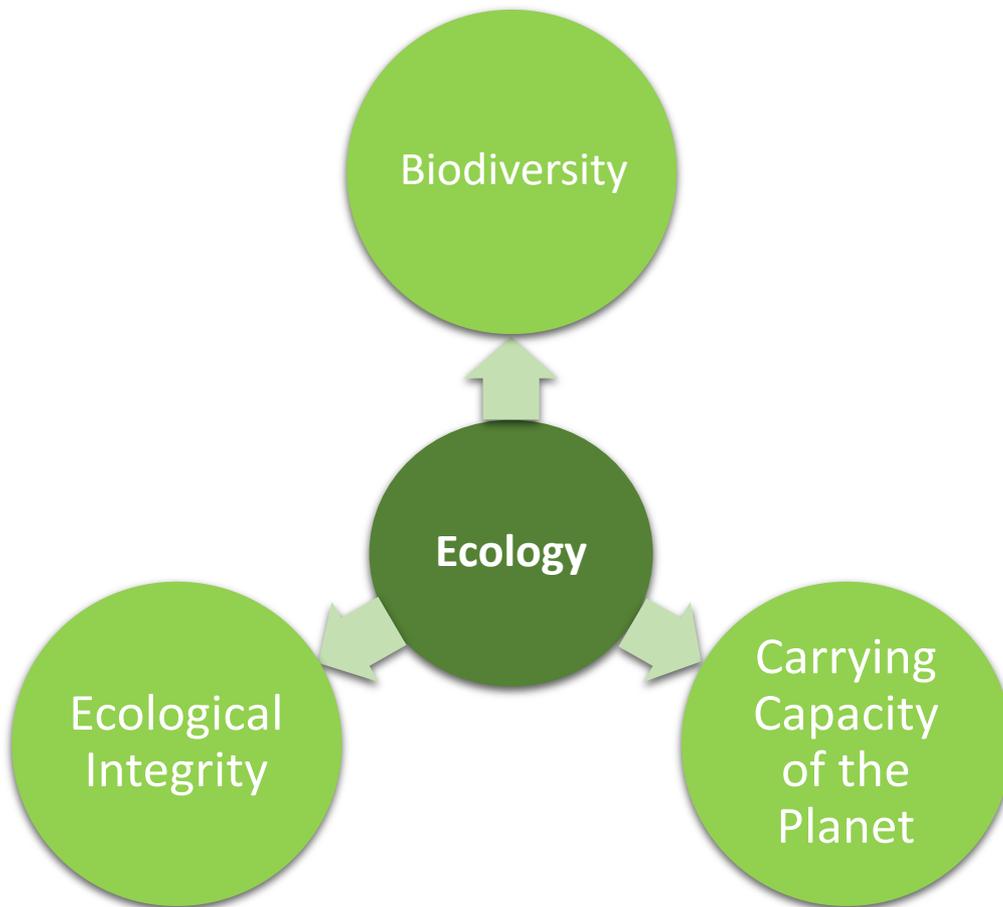
Governance (Capacity of the Community): Full and equitable community participation is supported in decision making processes along with legal, physical and organizational support for neighborhoods, community organizations, institutions and agencies to enhance their capacities.

Economy: The city's economy consistently favors economic activities that reduce harm and positively benefit the environment and human health and support a high level of local and equitable employment options.

Education for Life: Residents have access to lifelong education including access to information about history of place, culture, ecology, and tradition provided through formal and informal education, vocational training and other social institutions.

Wellness: Residents report satisfaction with their quality of life including employment, the built, natural and landscaped environment, physical and mental health, education, safety, recreation and leisure, and social belonging.



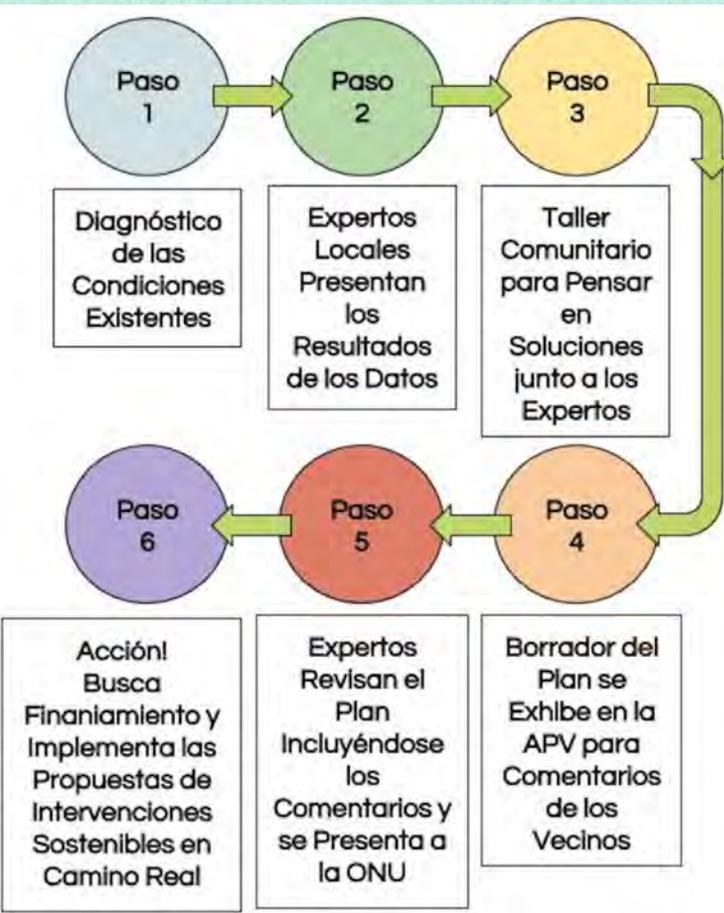


Biodiversity: Biodiversity of local, bioregional and global ecosystems is sustained, including species diversity, ecosystem diversity and genetic diversity; natural habitat and biodiversity is restored.

Capacity and Ecological Demand: Demands on ecosystems are within the limits of the Earth's bio- capacity, resources are converted restoratively and support regional ecological integrity.

Bio-Corridors: Essential linkages within and between ecosystems are maintained and provide contiguous habitat areas and ecological corridors.

Methodology



ECB created a team of professionals who are based in Cusco and whose experience align with the components of the International Ecocity Standards (IES). The team met on a weekly basis to share progress and ensure they achieved a holistic approach. They initially developed siloed diagnostics, surveys and proposals based on their component of the IES and then eventually integrated those proposals into four final integrated proposals that include proposals from each of the IES components.

The Methodology:

- The team surveyed citizens, made observations and investigated existing information on Camino Real for a diagnosis of existing conditions in the neighborhood.
- The team of experts presented their initial diagnosis to the community at a neighborhood meeting and worked with community members to verify their understanding of the conditions within the neighborhood.
- The team of experts met with community leaders to discuss possible interventions to improve the sustainability and quality of life in their community.
- The team of experts met with Cusco's governmental institutions and water and energy services to develop a list of viable preliminary proposals to include in the neighborhood's sustainability plan.
- The team of experts organized an event and presented their ideas, then divided the members of the community into groups and organized facilitated workshops to collect comments and ideas from the members of the community.
- The team of experts revised the project proposals based on the contributions of the community.
- The team of experts organized an event and presented the project proposals to a representative of UNEP and to local agencies and interested parties. The attendees divided into groups and discussed the individual proposals and discussed the viability of the plan.
- The team of experts met with UNEP to compile the various project proposals into four integrated proposals.

Local Expert Profiles



EXPERTS – PROJECT ROLE:
Community Surveying
Neighborhood Observation
Research of Existing Information
Research of Technology and Interventions
Conversations with the Community
Community Workshops
Plan Development
Plan Socialization in Community

PROJECT
DIRECTOR**Sydney Moss**

Project Director at Ecocity Builders

Sydney leads participatory sustainable development of the transversal sector and urban design initiatives by identifying, connecting and involving local academic, community and government leaders. Sydney was trained at UC Berkeley and Loyola University, but has obtained her most critical experience and developed her unique skill set directly in communities, classrooms and government offices while implementing participatory sustainability projects in several cities in Latin America.



PROJECT COORDINATOR



Joshua Castro

Project Coordinator at Ecocity Builders

Joshua is an environmental engineer and he has developed his academic studies at Alas Peruanas University, he focuses his professional goals in water studies. Joshua is working in a hydrologic modeling of a watershed system in a district of the Cusco Region. He has also supported local government environmental programs where he has gained experience with communities, local people, government's politics, water conservation programs.

CAMINO REAL LEADER



Guido Jara Ugarte

Social Sensitizer and Community Leader

Ministry of Culture of Cusco

Guido is a representative leader in grassroots social organizations in the North-Western Zone of the Cusco District and active leader in the APV Camino Real-Cusco. Guido performs social work in order to strengthen all organizations in the sector. Guido studied in the National University of San Antonio Abad of Cusco in the specialty of Anthropology of the Faculty of Law and Social Sciences. Currently, Guido works as a Social Sensitizer in the Decentralized Directorate of Culture in Cusco –a program of the Ministry of Culture of Perú, with the aim of involving the population in the preservation of pre-Hispanic monuments and the care of the Cultural Heritage in the Cusco region.

ASSISTANT COORDINATOR

Yadyra Quispe

UAP Environmental Engineering Student

Yadyra is from Peru and studied Environmental Engineering at Alas Peruanas University in the city of Cusco. She works as an environmental promoter in solid waste management projects, where she performs different functions, such as training and sensitizing people about environmental education, and also to promote, coordinate and propose solutions and sustainable strategies. Yadyra is interested in working on the sustainable management of natural resources to support a balance between ecosystems and teaching people to contribute to the sustainable development of their country.





Gricelda Pumayali Vengoa
Sociocultural Specialist

Gricelda is a Lawyer with a Masters in Civil Law and Civil Procedure who is experienced in legal advice in the field of cultural law, corporate organizations and civil processes. She has experience as a community organizer in the Historic Center of Cusco and in social work related to vulnerable populations. She has assisted Ecocity Builders in 2015, 2016, 2017, and 2018 implementations of the Urbinsight project in Cusco, Perú.

Javier Maldonado Colque

*Specialist in Mobility and Sustainable Urban Design
Plan of Mobility and Public Spaces of Cusco*

Javier is a Bachelor in Architecture from UNSAAC. He is experienced in construction and urban design and a lover of the history of the city and its culture. Javier works with the Municipality of Cusco and the World Bank in the development of the Cusco urban development plan, the elaboration of the master plan of the historic center of Cusco, and the Sustainable Urban Mobility Plan. He is currently working on the development of pilot projects for sustainable neighborhoods and urban interventions in the city with the French Corporation in Cusco.



Julio Warthon

Researcher in Clean Energy and Atmosphere National University of San Antonio Abad of Cusco, Peru

Julio leads research groups in the field of clean energy and the atmosphere, has carried out projects in wind energy, solar thermal, internal environmental lighting and ecological urban transport.

Julio has studied at UNSAAC and has a Master's degree in Sciences, specializing in renewable energies. He is currently an associate professor in the Academic Department of Physics of the Faculty of Sciences of UNSAAC. Julio promotes and participates in ecological activities and has a proposal on adjustment of the Environmental Quality Standards in WHO.



Fabian Simeon

Local Promoter at MOCICC

Fabian is working in Cusco principally with youth voluntary organizations about environmental topics like climate change, renewable energies and sustainable mobility. He studied International Relations in St. Gallen, Switzerland and made a diploma in Sustainable Development and Biodiversity Management at Antonio Ruiz de Montoya University in Lima. As promoter for the Citizens Movement against Climate Change, he realizes information campaigns and promotes sustainable life styles in the region of Cusco.





Rocío del Carmen Gamarra Barazorda
Agricultural Engineer

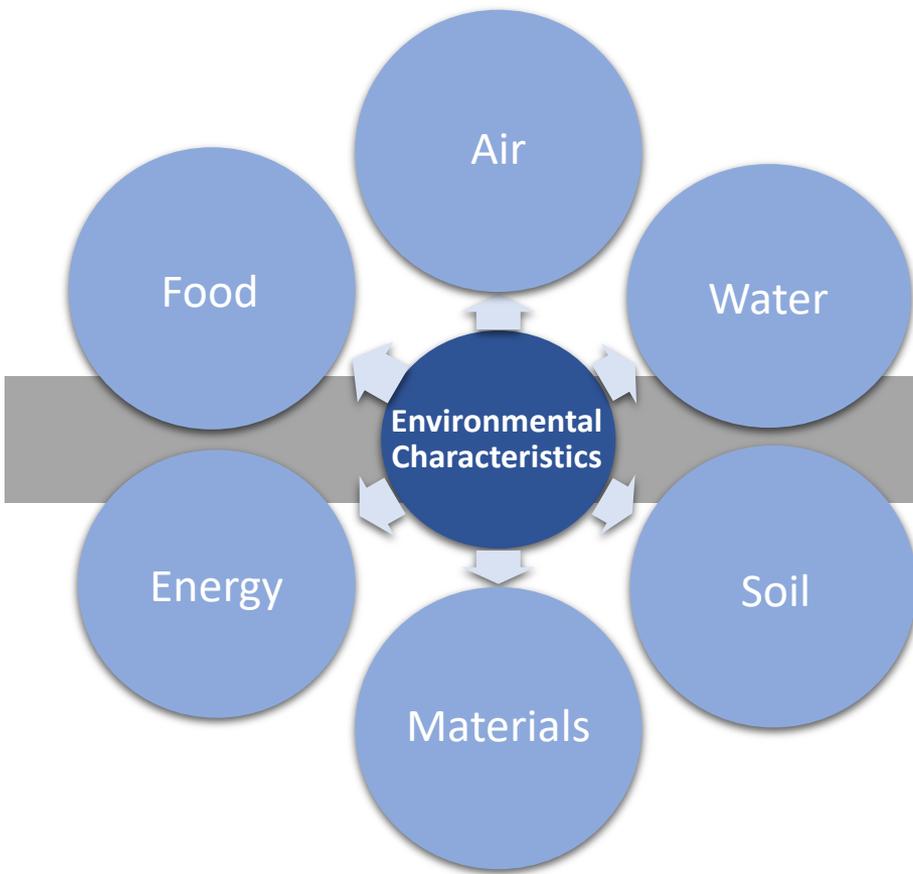
Rocío del Carmen studied Agronomy and completed a Master's Degree in Economics in Investment Projects at San Antonio Abad University in Cusco. She has Post Graduate Studies in Environmental Conservation and Environmental Impact Assessment, Environmental Health Management, Profiling, Technical Files and Liquidation of Public Investment Projects, and a Diploma in PROCOMPITE. With work experience in the Public Sector, she works in the formulation of pre-investment and investment level studies (profiles and technical files) of projects for productive development, food security, water, and environmental projects for the recovery of regulatory ecosystem services in the rural sector of the Region of Cusco and Apurímac.

Maritza Maribel Arteaga Ccanch
UAP Environmental Engineering Student

Maritza has a bachelor's degree in Environmental Engineering and has participated in several workshops, including "Mapping Secondary Cities for Resilience and Emergency Preparedness" by Secondary Cities, the Secondary Cities Urbinsight Project, as part of the Wiñay Kallpa group that collaborates with MOCICC on issues of Energias Limpias, and "Promotion of the Use of Photovoltaic Solar Energy and Energy Efficiency in the Community of Choquepata, Tipón Cusco", with support from the CASA Socio-environmental Fund.



Diagnostic of Existing Conditions

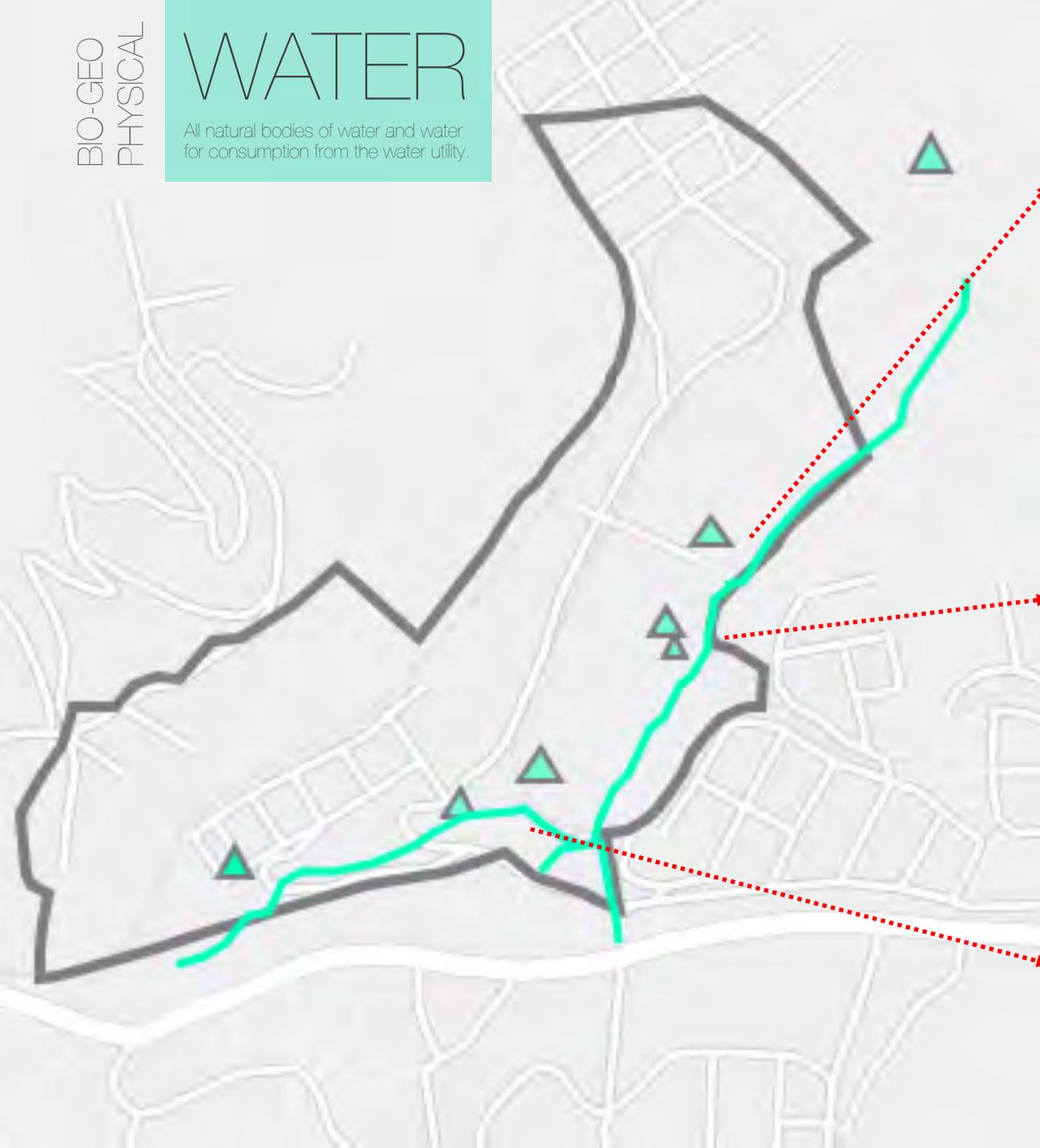


BIO-GEO-PHYSICAL

BIO-GEO
PHYSICAL

WATER

All natural bodies of water and water for consumption from the water utility.



WATER

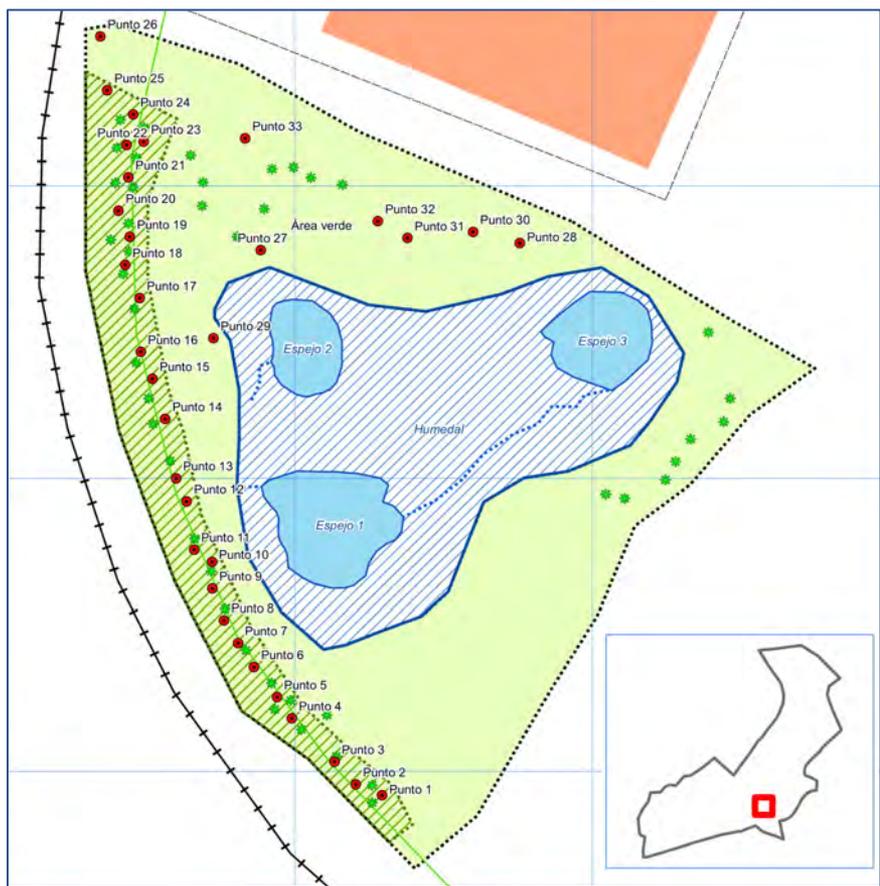


Camino Real (CR) homes are connected to the SedaCusco (SC) water utility grid. The utility pipes water into their homes and removes wastewater from their homes for a monthly fee that is expensive for most residents in CR. The service provided to CR by SC is inadequate. The homes have reported that they receive water for only 2-4 hours each day and, through investigation of wastewater systems in the neighborhood, it is apparent that the wastewater service provided by SC is not functioning even though the citizens are paying for this service.

CR has three sewage collection tanks within the neighborhood and two of them are inoperable. One of the two inoperable collection systems has collapsed and is located directly in a natural stream and wetland area which is the head of the micro-watershed that feeds into the Saphy river. Its contaminated contents are continually spilling into this natural waterway. These conditions contaminate the wetland in CR and contaminate the natural water which eventually passes through the city center via the Saphy river. Furthermore, school children must cross this contaminated section of their neighborhood on a daily basis as their pathway to school walks directly by the collapsed tank. Children often arrive to school with contaminated soil material on their shoes and have been seen playing in the contaminated water on their way to and from school.

Due to the inadequate water supply on a daily basis, residents of CR have taken matters into their own hands and have purchased water storage tanks that they fill during the hours of water service in order to have adequate water for their household each day. These tanks are expensive and cannot be afforded by all community members. Lastly, the water that does arrive to the households is not safe for consumption without first boiling the water at least once. So a typical morning for a head of household, typically the woman living in the house, is to spend hours filling water vessels and boiling water for the household consumption for each day.

WATER



Ecocity Builders, Urbinsight-Cusco Project, Original Graphic, 2017

The CR neighborhood is located directly on the head of the Saphy River watershed and is home to a critical wetland ecosystem that boasts several creeks and at least three fresh water springs. One of the creeks carries all of the natural water from CR to the merge with other creeks and form the Saphy River which travels through the city center. Cusco is facing water security issues in the future as climate change has impacted the main water source, Piuray Lake, and the restoration and protection of natural bodies of water is becoming increasingly important to the Planning Department and water security of the city.

WATER



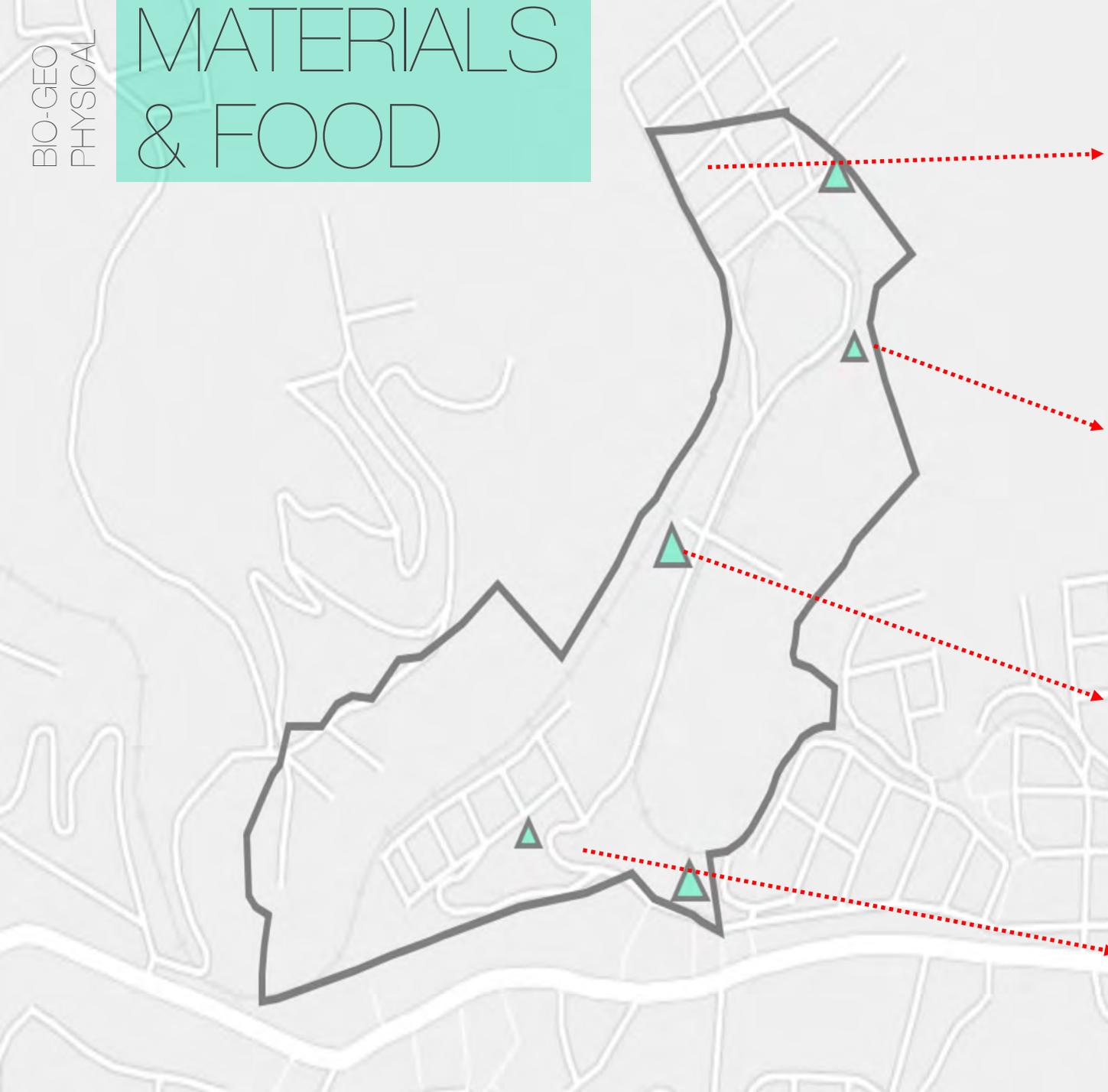
The wetland region and its bodies of water are critical to the Saphy river watershed health. There is a pathway that leads from CR to the Plaza de Armas, the central plaza of Historic Cusco, in twenty minutes walking. This pathway follows the waterway from CR and this could be a beautiful waterway to enjoy along that walk. Children from the neighborhood could play in the waterway and explore its ecology and biodiversity safely if it were clean. Also, community members of CR who have been established in that neighborhood for more than 10 years can remember when the three fresh water springs were a source of clean drinking water and they did not rely so heavily on the water utility for that water. Now it is extremely unsafe to touch or consume the water.

The bodies of water in Camino Real are heavily contaminated by several sources of pollution. Many people discard garbage, organic waste, and food into natural bodies of water. Grazing sheep, llamas, and alpacas from the nearby neighborhoods are brought to the CR wetland area to graze and leave behind contaminating feces throughout the wetland and in the waterways. Again, the collapsed wastewater tank is consistently contaminating the waterways and children have to cross contaminated water sources on their way to their school.



BIO-GEO
PHYSICAL

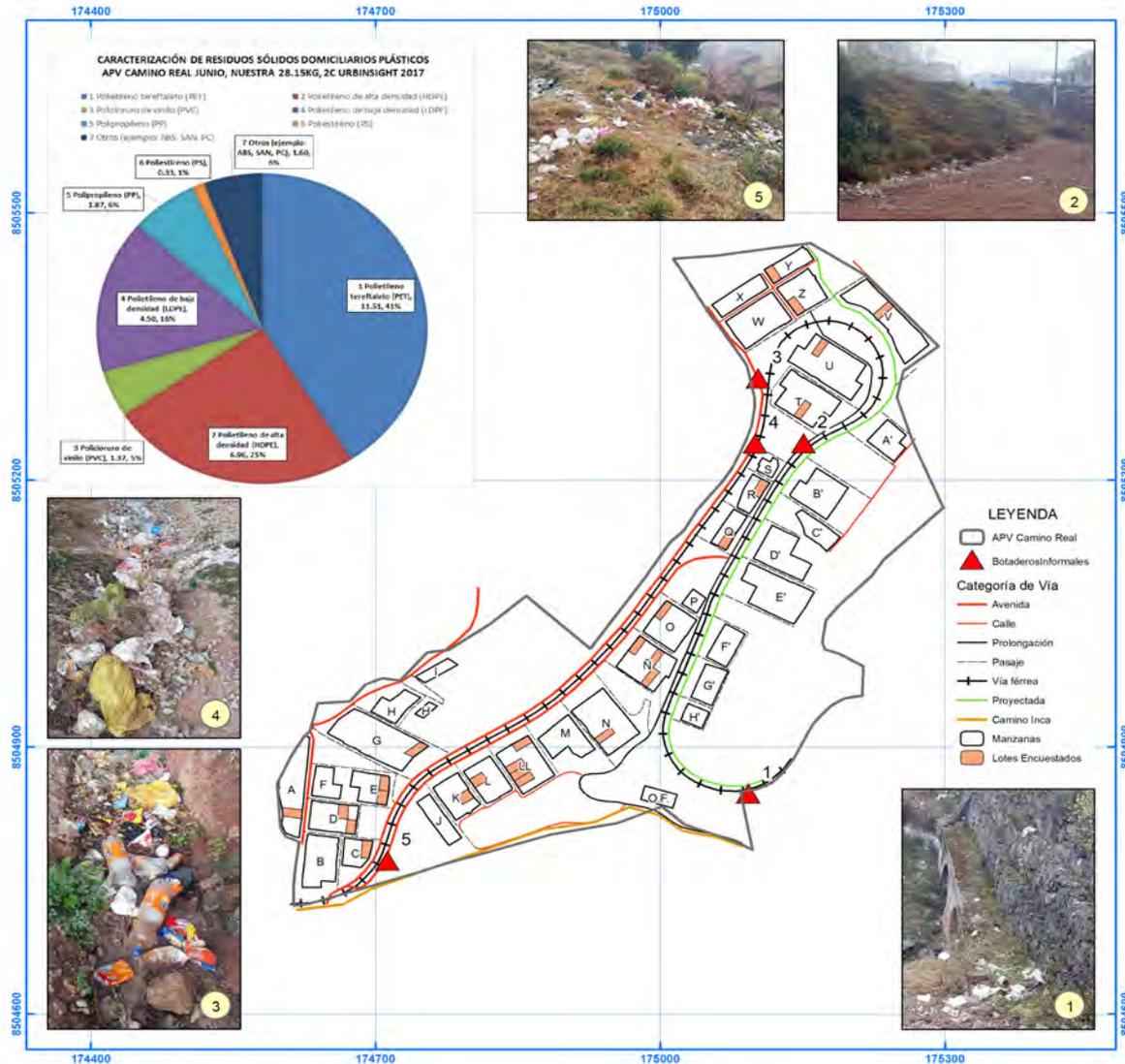
MATERIALS & FOOD



MATERIALS

All non-food and non-energy resources used by community members including building, clothing, food containers, etc...

There is accumulation of solid waste in the neighborhood because the collection services of the municipality are inconsistent and unreliable. Often times, the trucks are set to arrive one day and residents place their trash bags in informal trash heaps. If the truck does not come, dogs rip the bags apart and disperse the trash throughout the neighborhood. Camino Real residents have formed informal dumpsites for their solid waste and this waste, especially the plastics and chemicals, are littering the waterways and natural spaces where the residents dump. Community members do not have the option of municipal recycling. As a result of participating in the UNEP Sustainable Plan for Camino Real, the Youth Network of Camino Real has initiated a neighborhood trash clean-up program.



FOOD

All organic, consumable
resources entering or within the
community



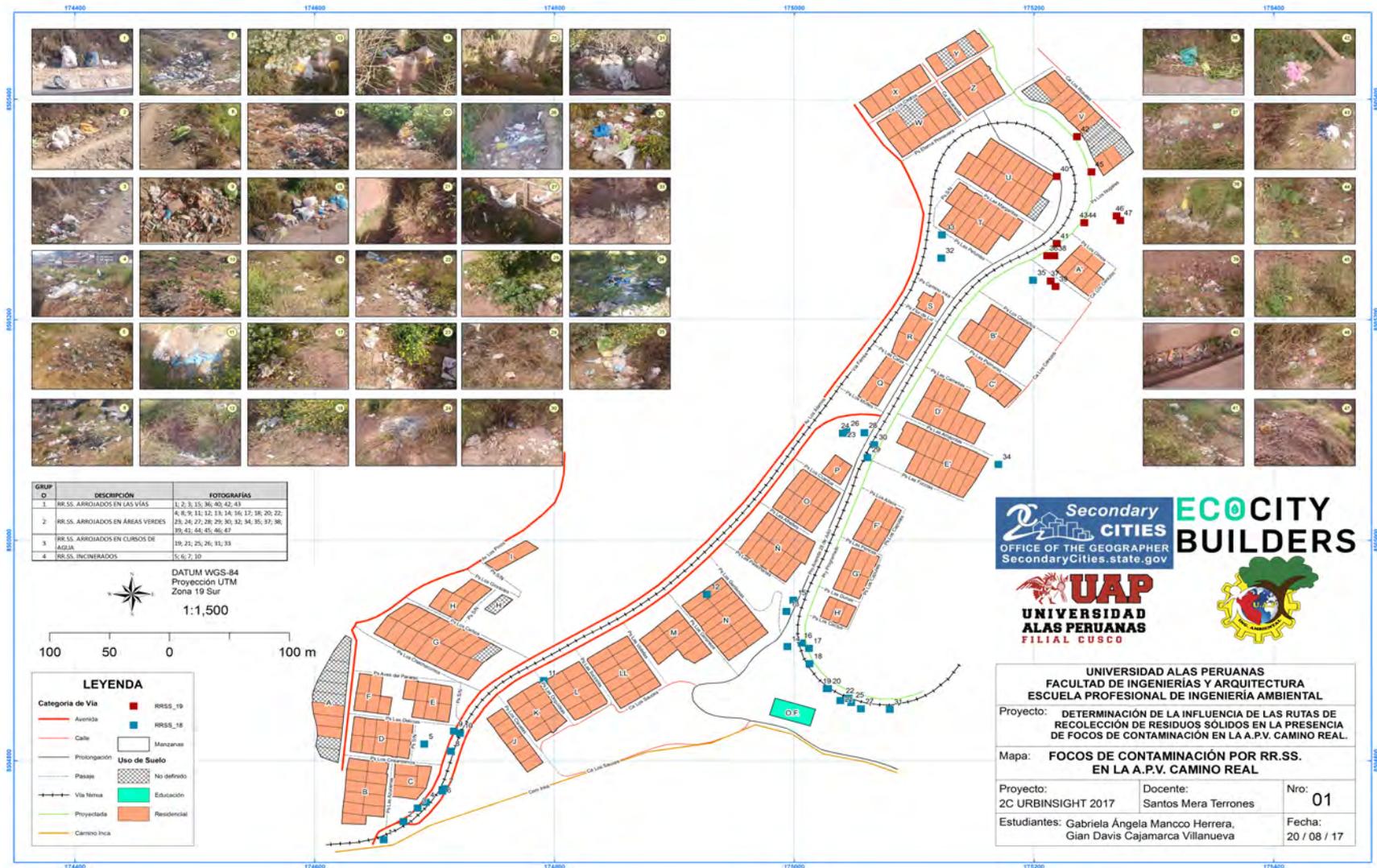
In Camino Real, approximately 90% of the population are from the have stated that they have the knowledge necessary to grow their own food and 70% of the neighborhood homes have permeable green spaces with the potential to grow their own food through the cultivation of vegetables, beans, grains and fruits.

There are existing orchards and farms growing potatoes, beans, olluco, and maize in communal areas. These cultivations are informal projects.

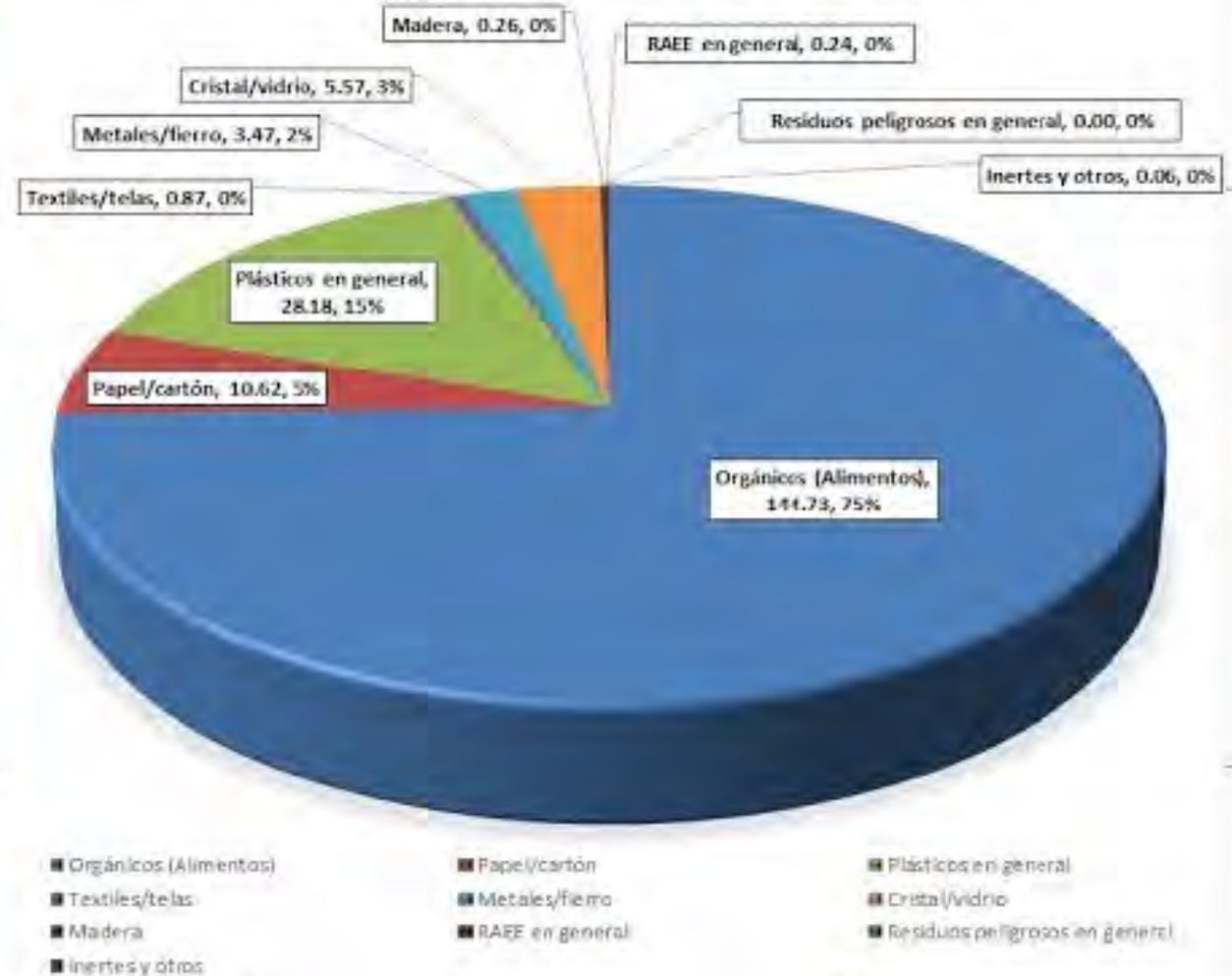
Population with skills in agricultural activity (crops and raising small animals).



A mapped diagnostic of Camino Real waterways reveals the damage caused to the important wetland ecosystem by inadequate waste collection.



**CARACTERIZACIÓN DE RESIDUOS SÓLIDOS DOMICILIARIOS
APV CAMINO REAL JUNIO, NUESTRA 194KG, 2C URBINSIGHT 2017**



An eight-day Urban Metabolic Information Systems (UMIS) study of the resource flow of materials through the Camino Real community was executed in a sample of homes in Camino Real. The team worked closely to measure quantities of material waste and results indicate that on average, Camino Real residents produce approximately 75% organic waste which could be utilized in the production of organic compost or bio-gas. 15% of the residential waste is plastic and could easily be recycled.

ENERGY

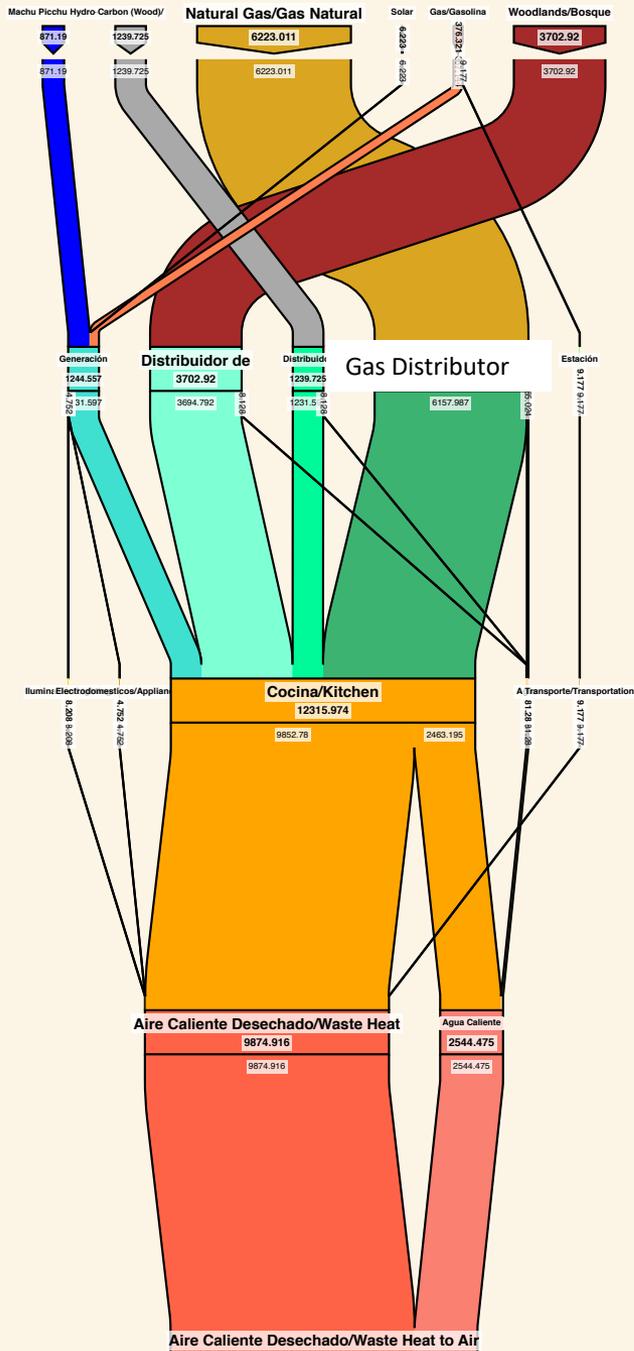


“Actualmente el servicio del alumbrado público es pésimo, debido a la iluminación opaca, y no existe una distribución adecuada de poste a poste. Para lo cual, se tiene que realizar las gestiones y trámites de las Acciones (bonos) que tiene la asociación y así lograr la ampliación de la electrificación, con nuevas conexiones, luminarias, incremento de postes, etc. Pero la iluminación deberá ser con focos LET.”

Guido Jara Ugarte, Camino Real Community Leader

ENERGY

The Ecocity Builders team surveyed 39 of the total 314 homes in Camino Real about their energy use and perspectives on energy issues in their community. The team also conducted 15 household audits to understand the Camino Real Energy Urban Metabolism (related Sankey Diagram to the right) and how the energy resource flow occurs in the community.



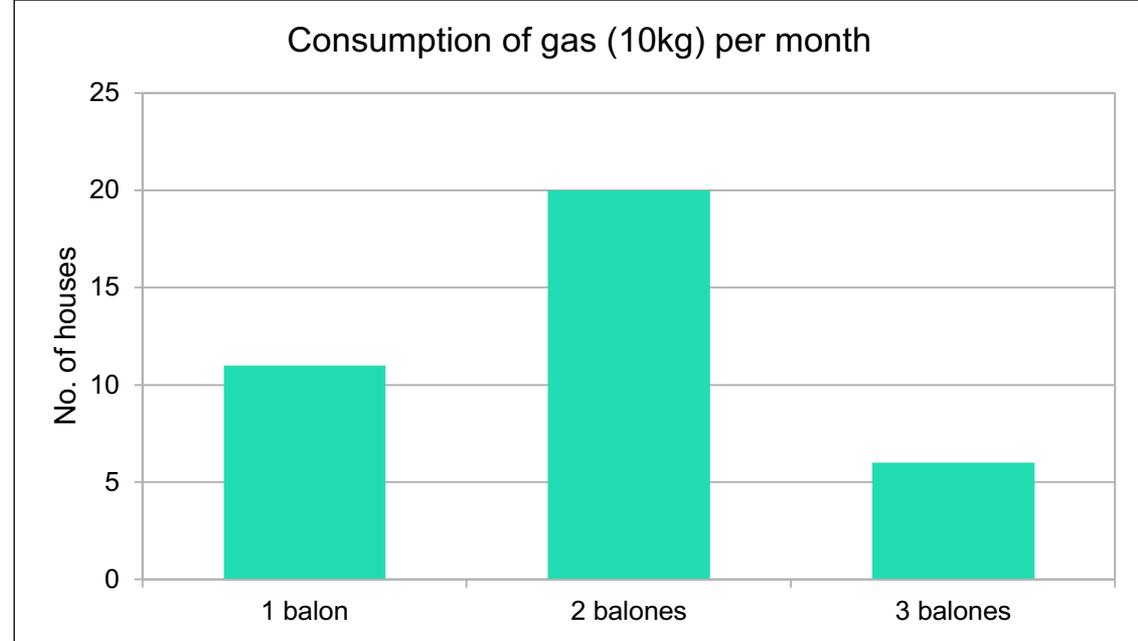
ENERGY

The Ecocity Builders team verified with the local energy provider, ElectraSur that all households withing the Camino Real community are connected to the electrical grid, have accounts with the utility and pay for their energy service.

Residents of CR expressed concerns around the cost of energy for their homes and they work to reduce energy consumption where they can for economic reasons.

ElectraSur energy is primarily used for charging appliances, such as televisions and cell phones, and for lighting.

The energy source for cooking is primarily gas and firewood. 100% houses use gas for cooking and 43% of homes still use fire wood. In one month, an average home utilizes 67 gallons of gas (10kg) and/or approximately 380 kg of firewood.



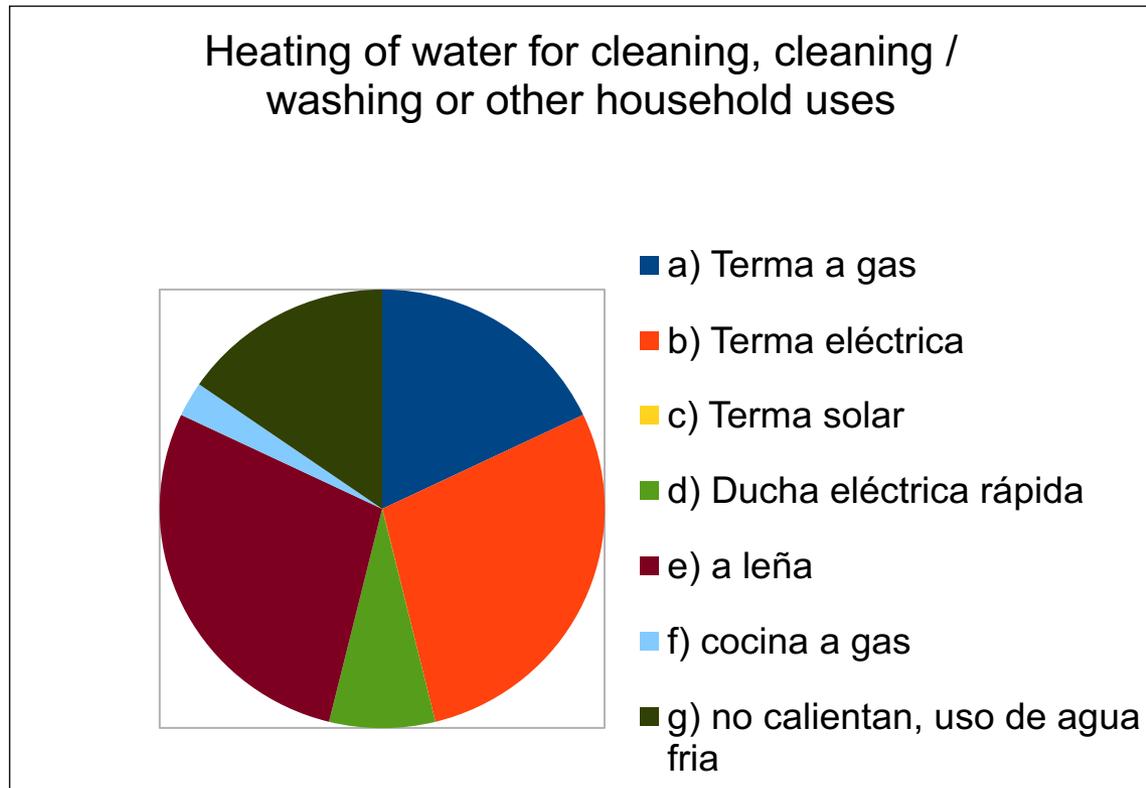
Ecocity Builders, Urbinsight-Cusco Project, Original Graphic, 2018



Most homes in Camino Real do not heat or cool their homes. The homes are made of adobe which has passive cooling and heating properties that maintain a comfortable indoor temperature for moderate climates. In Cusco, the nights can become very cold and can drop to negative zero degrees Celsius. The homes become very cold and people are often in their homes wearing several layers and winter coats.

CR residents mainly boil water for consumption and very few heat water for showering or other household cleaning such as laundry. All water from the SC water utility must be boiled prior to consuming. When they do heat water, the residents typically use gas, electricity or wood.

Do they use an air heating system?	NO: 34 homes
	YES: 4 homes
Do they use air conditioning for cooling?	NO: 35 homes
	YES: 2 homes



What kind of lights do you use and how many?

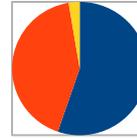
Incandescent Bulbs: 10

Power Saving Bulbs: 165

Flourescent Bulbs:
8

LED Bulbs: 10

How Many Lights do You Have in Your Home?



■ A) 1- 5

The survey results showed that the majority of light bulbs in the community are power saving bulbs and that the most households have between 1-5 lights in their homes.

The residents have electrical appliances, but due in large part to economic reasons, they do not have all of the appliances that they would like. In the coming years, if their economic situations allow, many of the households in CR will invest in additional appliances and will increase their energy consumption patterns.

Existing Appliances

TV	68
Radios	51
Home Computers and Laptops	36
Cell Phones	110
Refrigerators	14
Washing Machine	15
Others: Iron, Electric Kettle, Blender, Microwave, etc.	13

Appliances that the Household Hopes to Buy in the Coming Year (Number of Responses out of 37)

Washing Machine	10
Refrigerator	7
Would not Purchase new Appliances	5
Solar Panels	4
None Indicated	4
LED and Power-saving Bulbs	4
Another TV	3
Electric Water Heater	2

Sustainable Energy Perspectives:

When asked, “Do you know what energy efficiency means? Have you ever participated in a previous energy efficiency program?” Eighty percent of households responded, “No” and only 20% responded, “Yes”.

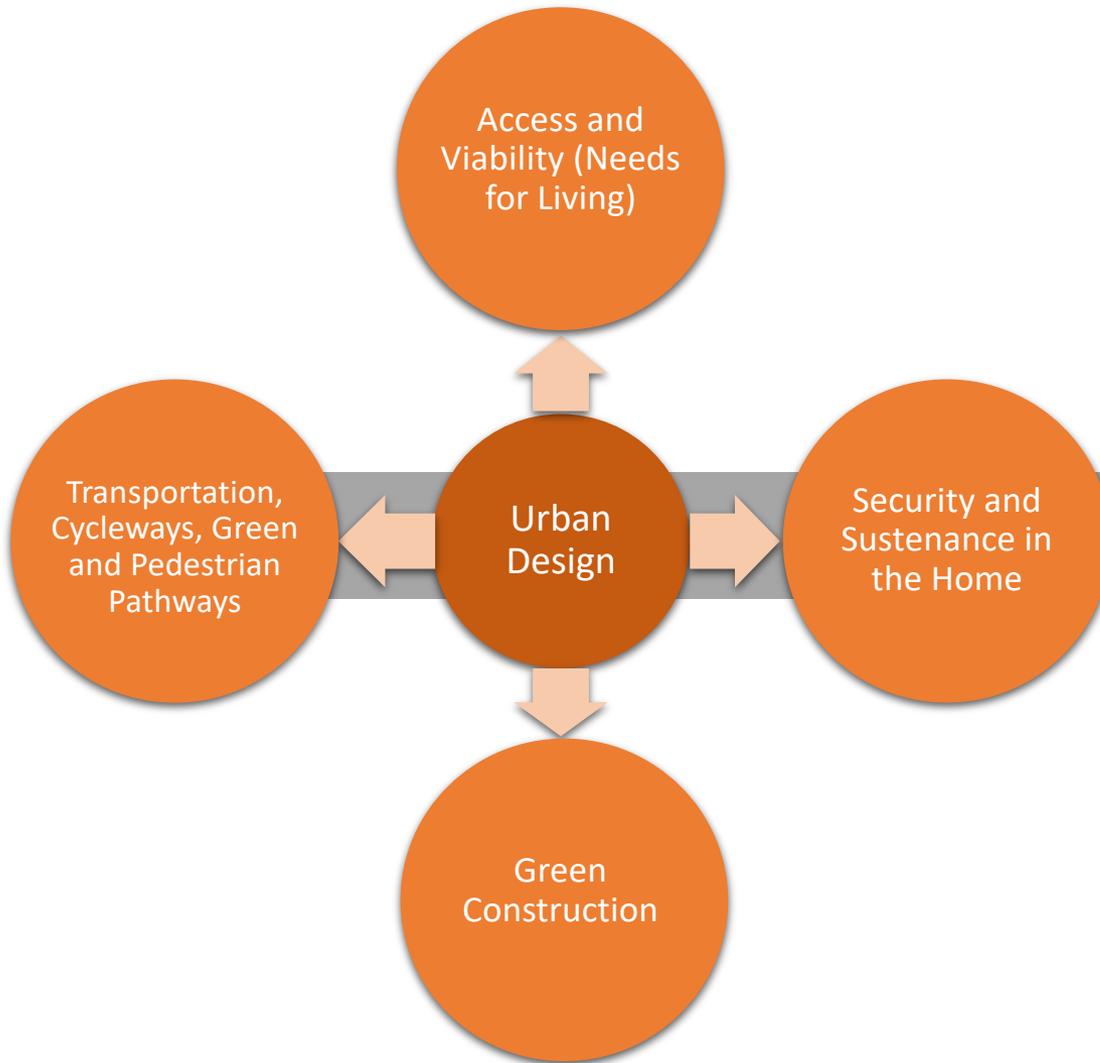
With expensive monthly electrical and gas bills, many households are interested in learning more about how they can be more energy efficient and save money each month.

Many households are also interested in learning more about solar and wind energy in their community.

In order to do an initial feasibility test for wind and solar energy options for CR, the ECB team asked the community if they could identify locations of strong wind or intense, extended sunlight. The CR community was eager to share their community knowledge.

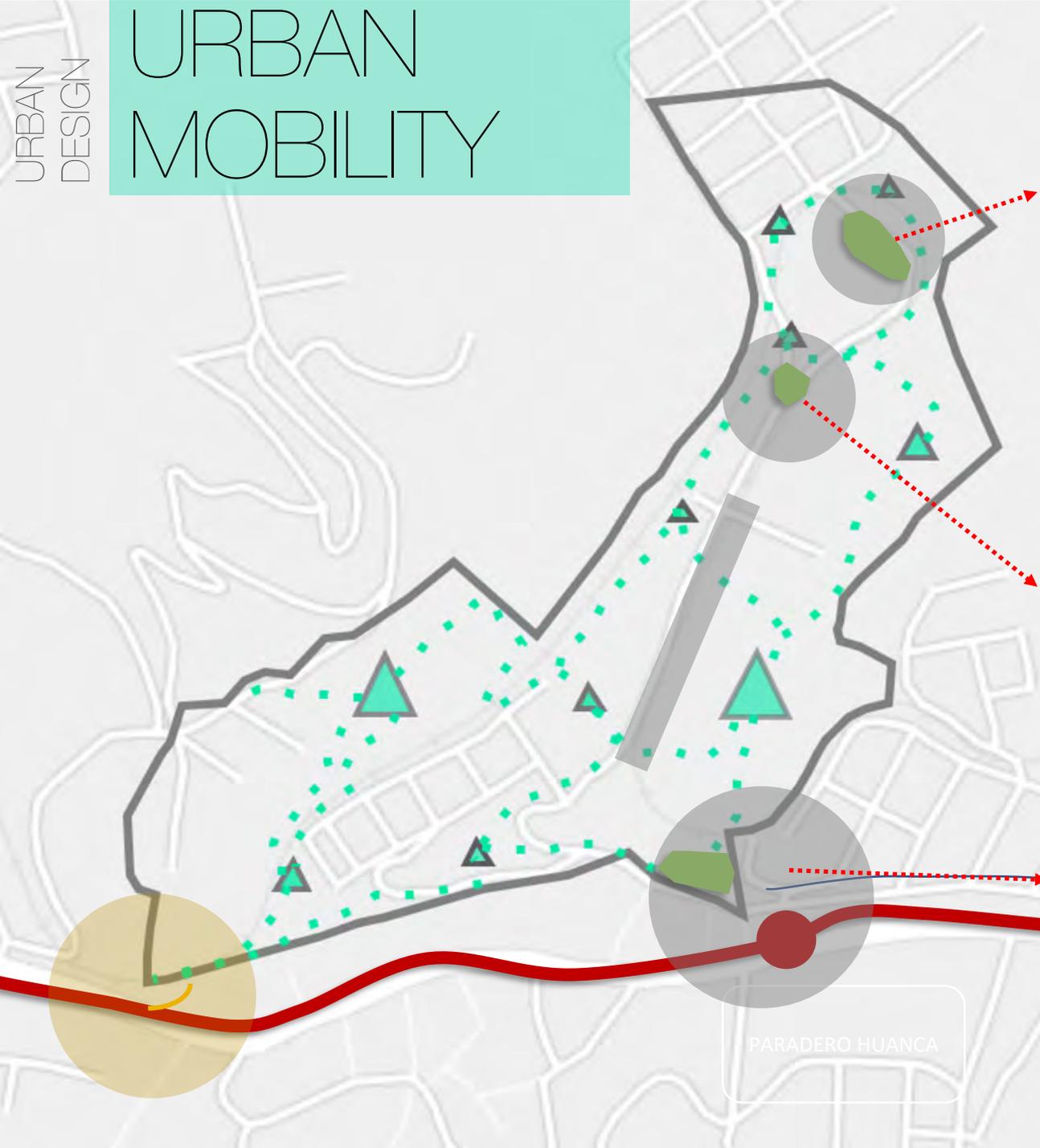
At one community event, the ECB team and the CR community developed a list of potential sites for wind or solar energy and voted:

The Whole Neighborhood	7
Sports Fields	6
Surrounding Areas	4
The Quebrada	3
The Community Park	3
Los Geranios Street	2



URBAN DESIGN

URBAN MOBILITY



For projects regarding tracks, sidewalks, staircases, and other public infrastructure, the equipment only has an advance of 70%. For which, we will detail by way of summary:

NAME	PAVED	UNPAVED
Pedestrian Throughways	13	26
Roads	04	03
Avenues	02	-
Extensions	01	-

URBAN MOBILITY



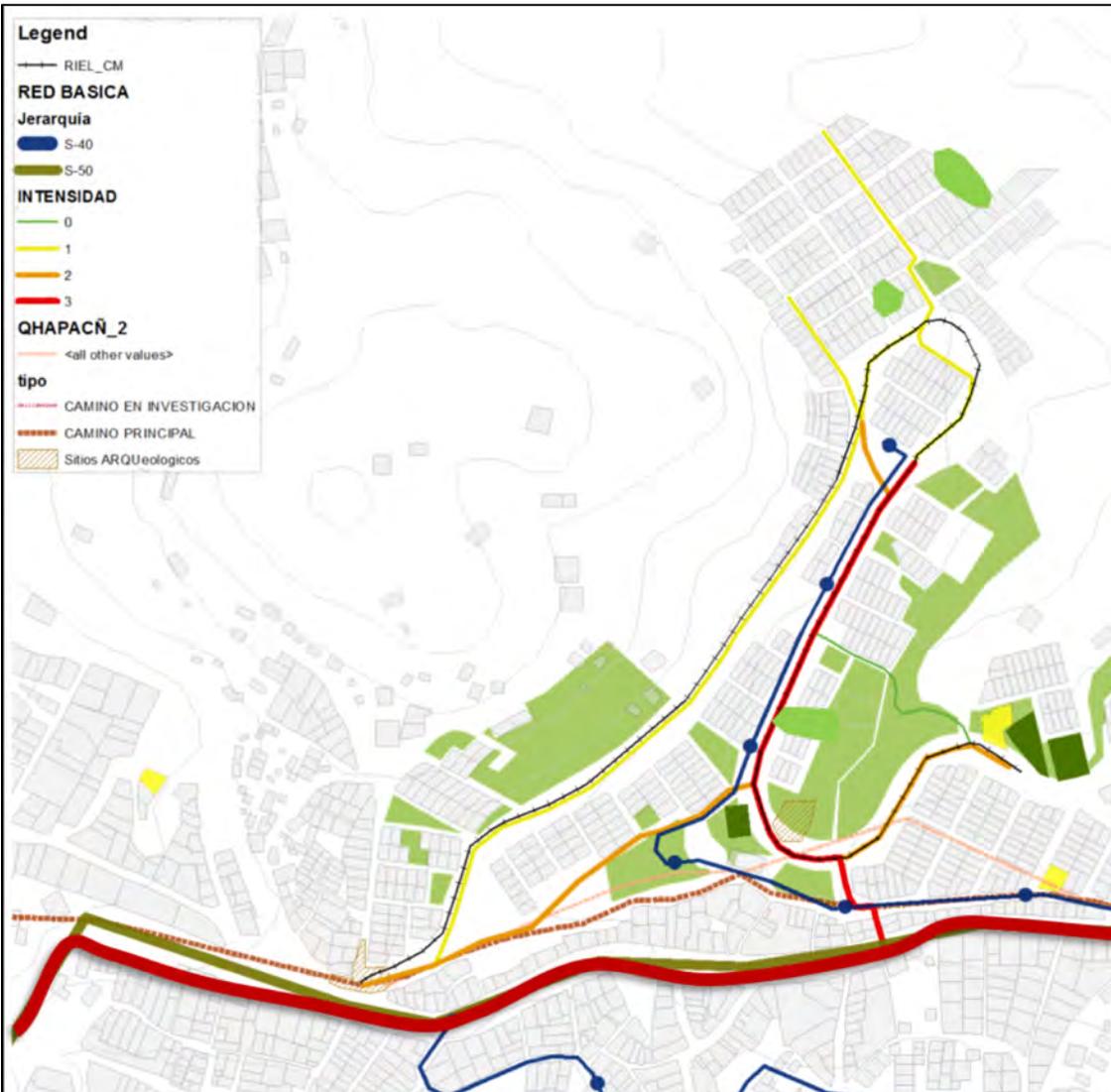


Camino Real residents lack safe mobility through their neighborhood. The main entry to the neighborhood is along a road that is narrow and does not have a designated sidewalk. Cars, trucks and busses speed through this entry point and community members often times have to jump out of the way of the of the vehicles.

The community does have a public transit option which is a public bus route, however, the neighborhood has insufficient and informal bus stops with no seating.

Pedestrians are at large women and children and they are regularly at conflict with the motor vehicle as the speed limit is not clear or regulated and vehicles move at speeds of greater than 30 km/hr. Furthermore, CR lacks pedestrian infrastructure and there are no public sitting and standing spaces. Many people walk along the active railroad tracks. The sidewalks and streets have limited public lighting. Throughout the neighborhood, the sidewalks, if present, are narrow, less than 90 cm across.

The ECB team expert in urban mobility visited CR various days of the week and at various hours to conduct a mobility analysis. This map indicates the levels of density of pedestrian traffic in the neighborhood. The red pathway in along the main street in CR demonstrated that the major pedestrian traffic flow follows that street and then turns along the active railroad tracks in order to arrive either at the nearest school or to continue up a paved stairway to meet buses in route to several destinations throughout Cusco as well as to other cities. The people on this pathway vary from day to day and hour to hour, but the majority of pedestrians are women and children. Many men work outside of CR and leave on Sunday evening or Monday morning and do not return until Friday or Saturday. Women are often times carrying groceries and walking with several children along this route. It is extremely dangerous and potentially fatal to walk along the active railroad track bridge that connects the CR community to its school and public transit nodes.

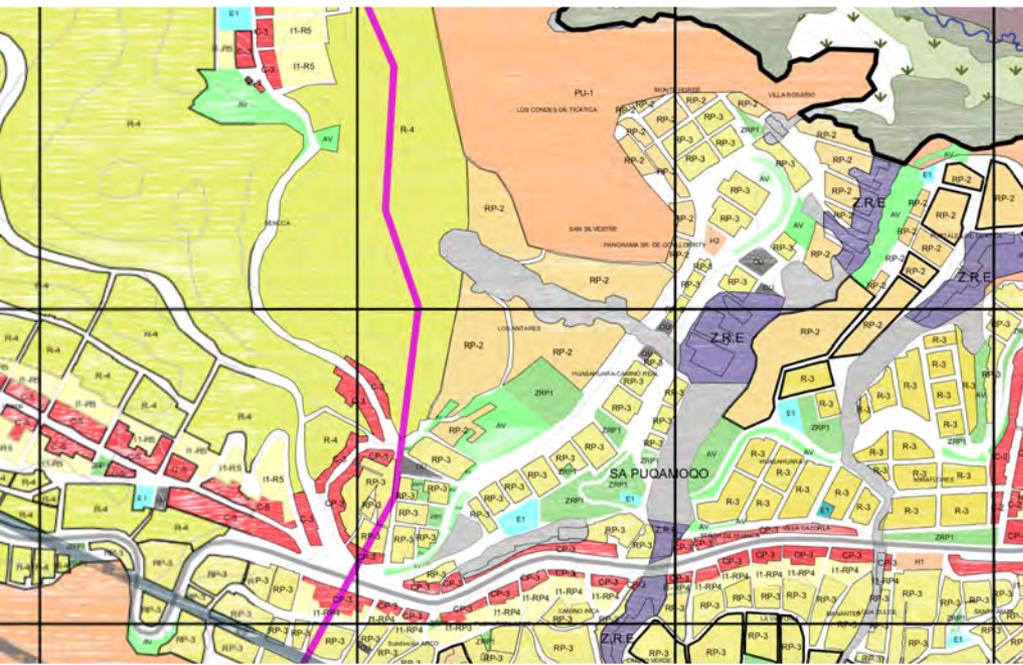


"According to the Urban Authorization Association, there are 310 authorized lots, as well as 4 which were subdivided by regular members during the process of legal restructuring, lotification, and/or illegitimate adjudication by former directors, and suffered legal changes. Making a total of 314 lots, which are generating legal problems and instability to partners. For more detail below we show the following table. "

Guido Jara Ugarte, Camino Real Leader

HOUSING

The majority of homes in CR are built by the homeowners with help from other community members. They typically use adobe, a sustainable resource which is local and passively regulates the indoor climate so that energy consuming heating and cooling systems are not necessary. Geologically, the neighborhood is a mixed hillside and adobe is a material vulnerable to these conditions. Many homes lack basic elements that can protect the house against risk from prevalent rain, flooding, landslides, and earthquakes.

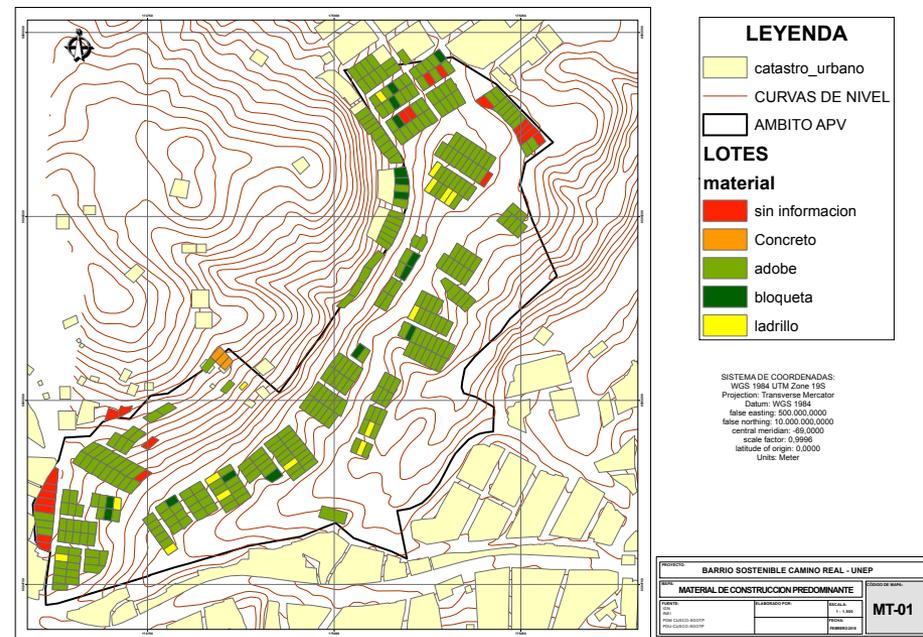


CUSCO Planning Department, 2018



HOUSING

While Camino Real is a formal neighborhood recognized by the city of Cusco, some lots still lack legalization or legal titles to this day. In addition, several houses are in need of major repairs that the family can not carry out for economic reasons. A majority of homes that need repairs are households run by a single woman.



Ecocity Builders, Urbinsight-Cusco Project, Original Map, 2017

CUADRO N° 02

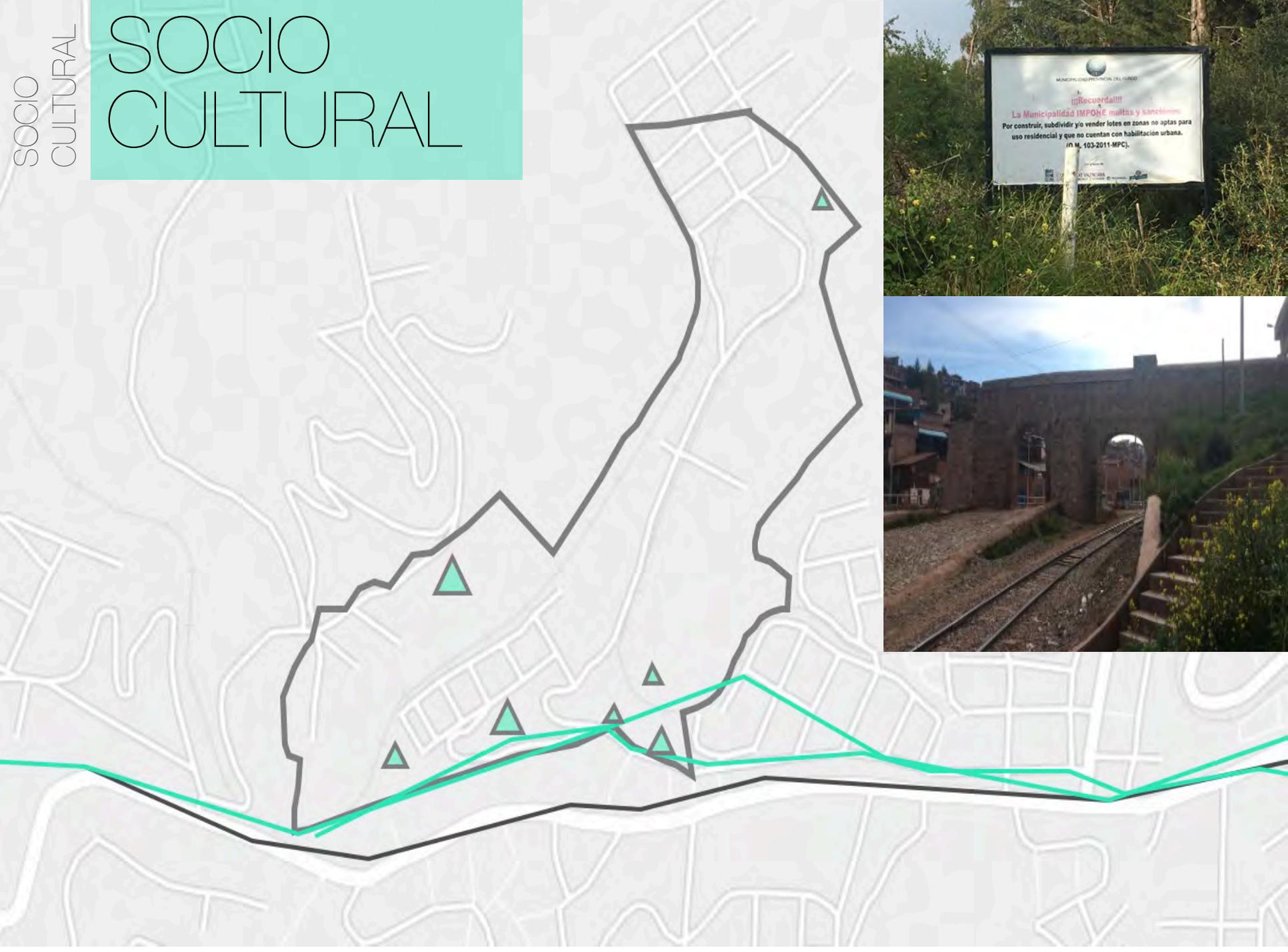
LOTE	ESTADO	OBSERVACIONES
Lotes A-Z y A'-H' son legalmente adjudicados.	Habilitados e independizados por Registros Públicos - SUNARP.	Existe una minoría de lotes posesionados sin Títulos de Propiedad.
N-16-B, Q-02-B, V-10-B, W-06-B	Lotes legalmente fraccionados por propietarios.	Socios activos.
V-13	Lote en Litigio, Caso Aurelio Leva, vivienda construida sin habitar.	Propietario, Dirección Regional de Vivienda, Saneamiento y Construcción- Cusco.
W-10	Lote vacio, sin dueño	En custodia por la Asociación,
V-02, V-03	Lotes fraccionados, por Acuerdo Extra-judicial con Núñez Del Prado	Responsable, Dirección Regional de Vivienda, Saneamiento y Construcción- Cusco.
X-07, X-08, X-09, X-10	Superposición con la APV Horeb	Responsable, Dirección Regional de Vivienda, Saneamiento y





SOCIOCULTURAL

SOCIO CULTURAL



The area of occupation of the APV Camino Real includes the protected area of hillsides that constitute spaces of urban environment of the city with special characteristics that conform the scenic and landscape frame of the city and that is identified in the plan of Urban Structuring of the Plan of Urban Development (2).

Presently, the APV experiences problems of irregular, unsafe constructions as well as the continued sale of lots and sublotización.



Neighboring APV neighborhoods and geographical sites along the CR Limits:

- NORTH: Llaulli Ccasa, Hatun Curaca Orcco, Huchuy Curaca Orcco, Pucapucara, communal lands of the Cusco and Senca, Oreb and Villa Rosario
- SOUTH: With the AAHH Inca Trail, Huasahuara Urbanization, and the APV Señor of Huanca
- EAST: Culturally protected gateway of Tica Tica
- WEST: With the Green Cross APV of Quehuapay

POPULATION: Estimated 2000 habitants (3)

NUMBER OF ASSOCIATES: 314

- (2) Regulation of the Urban Development Plan of the city of Cusco
- (3) Socio-economic survey 2016 conducted by the directive of the APV Camino Real.- Data provided by the former CR President Guido Jara.

CULTURE

The land where Camino Real is located was originally owned by a colonial settler and is part of one of the former hacienda estates that surrounded the city of Cusco. Specifically, it was part of the Huasahuara farm. Due to the social processes of migration and land occupation, it has been identified that some associates come from the rural and agricultural areas of Apurímac, Anta, La Convención and Paucartambo. For this reason, the community continues planting practices for their own consumption and preservation of the Quechua language. The Camino Real community hopes to achieve a neighborhood identity of ecotourism and cultural heritage values.



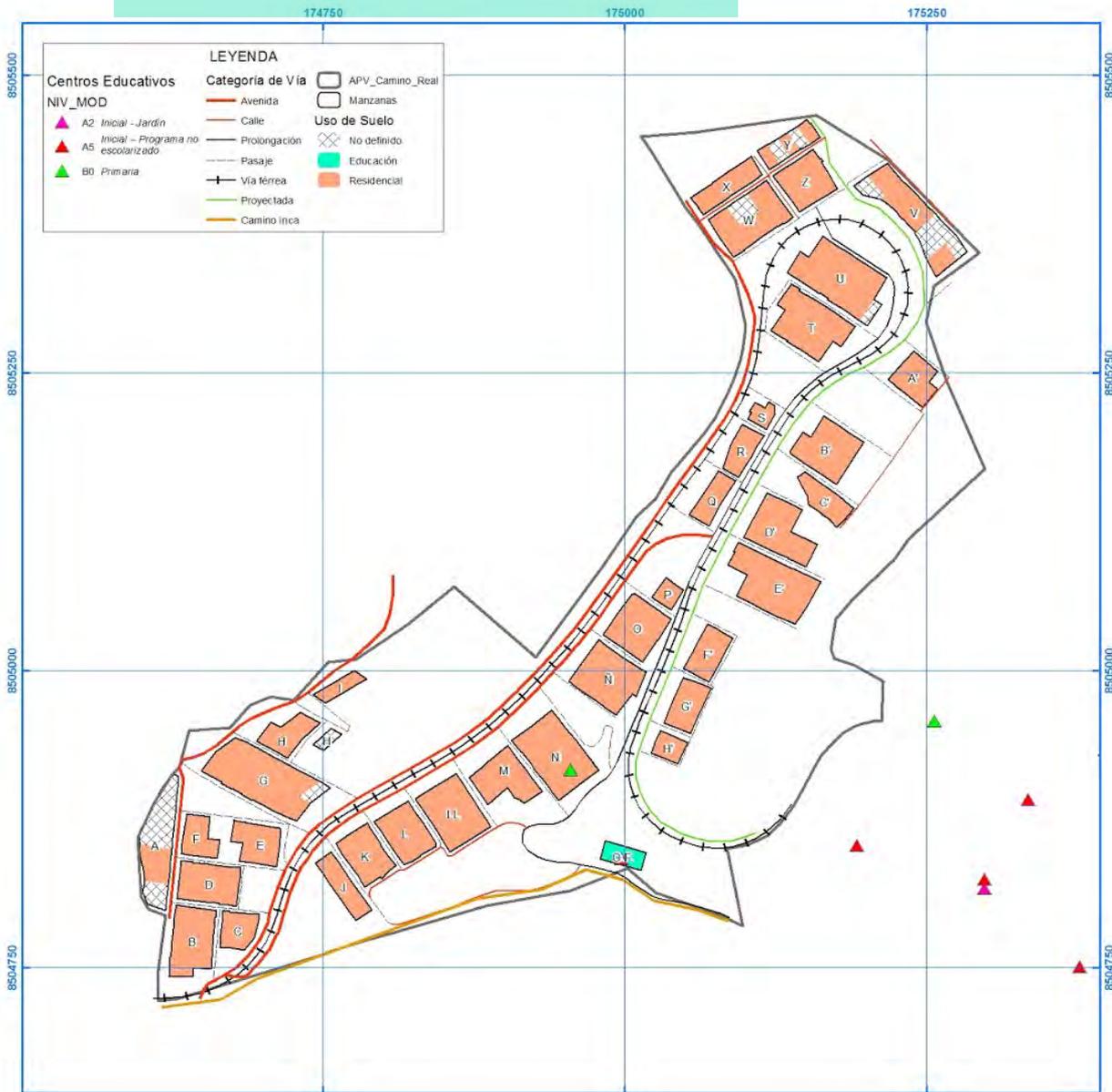


The neighborhood boasts various cultural heritage assets of archaeological value, namely, the Inka Qhapaq Ñan of Chinchaysuyo (Inka trail system that connects Hawkaypata, Izcuchaca, and Chinche), the the huaca (sacred mound site) de Huasahuara and the Tica Tica arch (the colonial entry way to Cusco). There are also ecologically valuable goods, among which are the natural sites that include the botanical park "Parque del árbol" and the area destined for a recreational landscape center. The community members also maintain a heritage of civic festivities such as the July 28th celebration of the day Camino Real was formally founded and religious holidays such as Cruz Velakuy, Inti Raymi and Christmas.

Presently, two extracurricular education programs operate in the Camino Real neighborhood. Many adult residents of Camino Real experience illiteracy. According to the regulatory contributions set by the Municipality of Cusco's Land-Use Planning Department, Camino Real has an area designated specially for a public educational center.

Areas	Social Concern	Indicators
Education	Camino Real and the surrounding Northwestern Region of the City of Cusco does not have a primary or secondary education center. Students must travel long distances to attend school.	The nearest educational center does not amply serve the student population. Minimal training in environmental care.
Knowledge Acquisition	There is demand from the student population of Camino Real, the adjacent neighborhoods and the Northwest region.	Illiteracy has been identified at the level of the adult population.

EDUCATION



1:3,500

Datum WGS84,
Proyección UTM
Zona 19 Sur

150 75 0 150 m



UNIVERSIDAD ALAS PERUANAS
FACULTAD DE INGENIERÍAS Y ARQUITECTURA
ESCUELA PROFESIONAL DE INGENIERÍA AMBIENTAL

Proyecto: EDUCACIÓN AMBIENTAL DIRIGIDA A JÓVENES DE 14 A 18 AÑOS PARA MINIMIZAR LA GENERACIÓN DE RESIDUOS SÓLIDOS EN LA A.P.V. CAMINO REAL

Mapa: CENTROS EDUCATIVOS DENTRO Y CERCANOS A LA A.P.V. CAMINO REAL

Proyecto: 2C URBINSIGHT 2017	Docente: Santos Mera Terrones	Nro: 01
Estudiantes: Jhonn Cuaresma Berrios, Flavia Rivera Ferro		Fecha: 20 / 08 / 17

GOVERNANCE

Although the organization is legally constituted, it is necessary to update Camino Real's bylaws, the list of associates and management documents of the organization that enable its functionality and self-management.

The APV has monthly to bi-monthly meetings with mandatory attendance by each household however attendance is an issue as only about 20 percent of households send a representative. The engaged community members are currently organized into the following organizations: Youth Network, Neighborhood Board, Vaso de Leche (women's group), and Popular Dining Room (women's group).

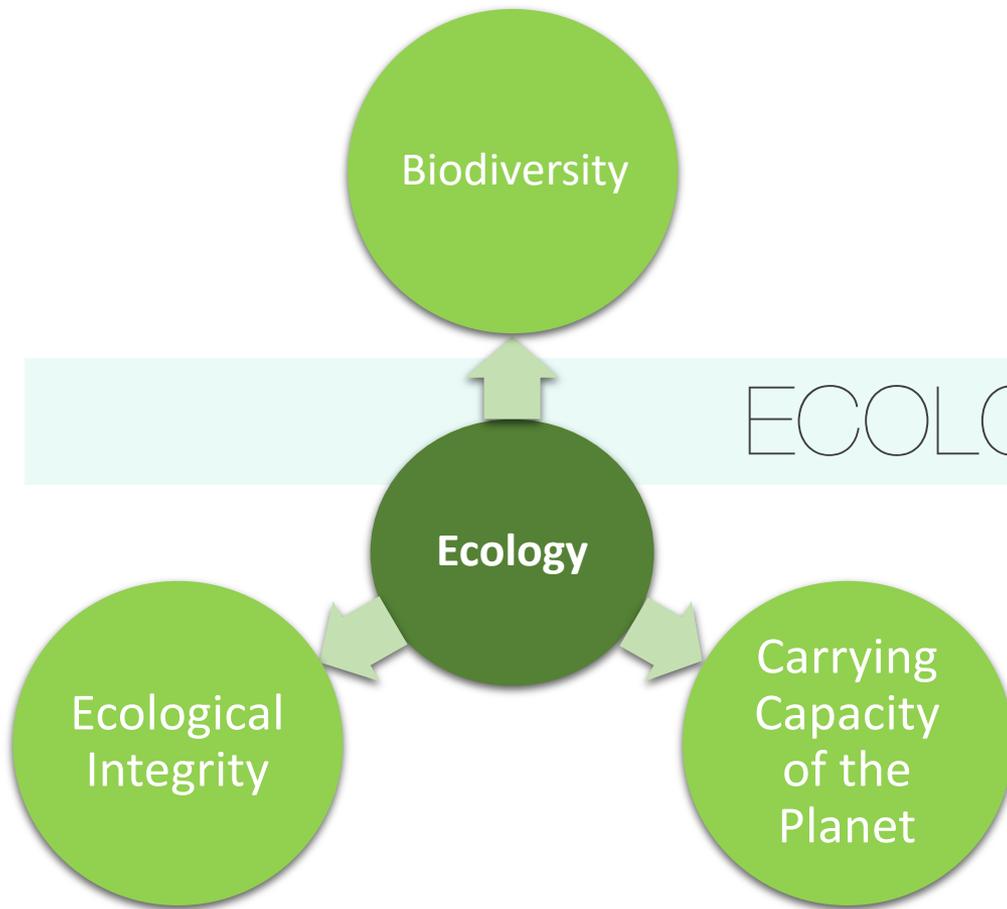
The community used to meet monthly at their community center, but they have shared this space indefinitely with the Cusco Police. They currently meet outside in a lot where they plan to build the Camino Real Market.

Areas	Social Concern	Indicators
Level of Cooperation	Weakening of participatory capacity.	Out of 320 associates, only 70 participate

ECONOMY

- According to the surveys carried out, out of 50 respondents, half receive an economic income equal to or higher than the minimum wage, it has been possible to identify people with lower income.
- The divergence of the economic income of the inhabitants creates inequality among them.

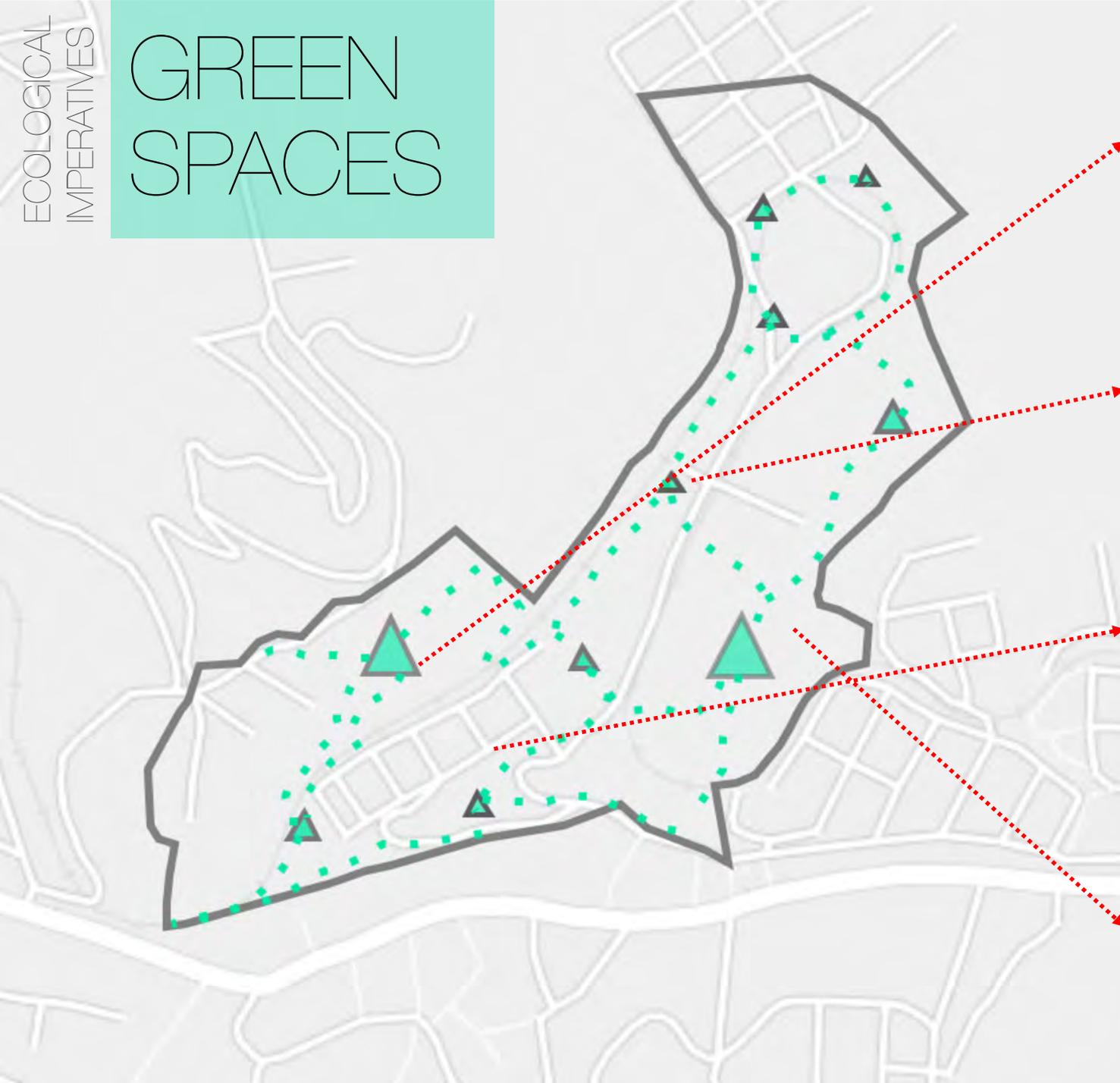
Areas	Social Concern	Indicators
Economic	<ul style="list-style-type: none"> • Need to create decent work for associates who do not have an activity or whose income is below the minimum wage • Promote the economy of the neighborhood through ecotourism, sustainable crafts, recycling, and the market 	<ul style="list-style-type: none"> • The economic activities are related to small businesses, sewing, masonry, carpentry, construction, others
Social Issues	<ul style="list-style-type: none"> • Alcoholism • Domestic Violence 	<ul style="list-style-type: none"> • Police reports • Community survey responses indicate frequent visible public drunkenness
Health	<ul style="list-style-type: none"> • The designate public hospital post of Tica Tica is not built and funding does not exist 	<ul style="list-style-type: none"> • Children and the elderly are the most vulnerable to diseases



ECOLOGICAL IMPERATIVES

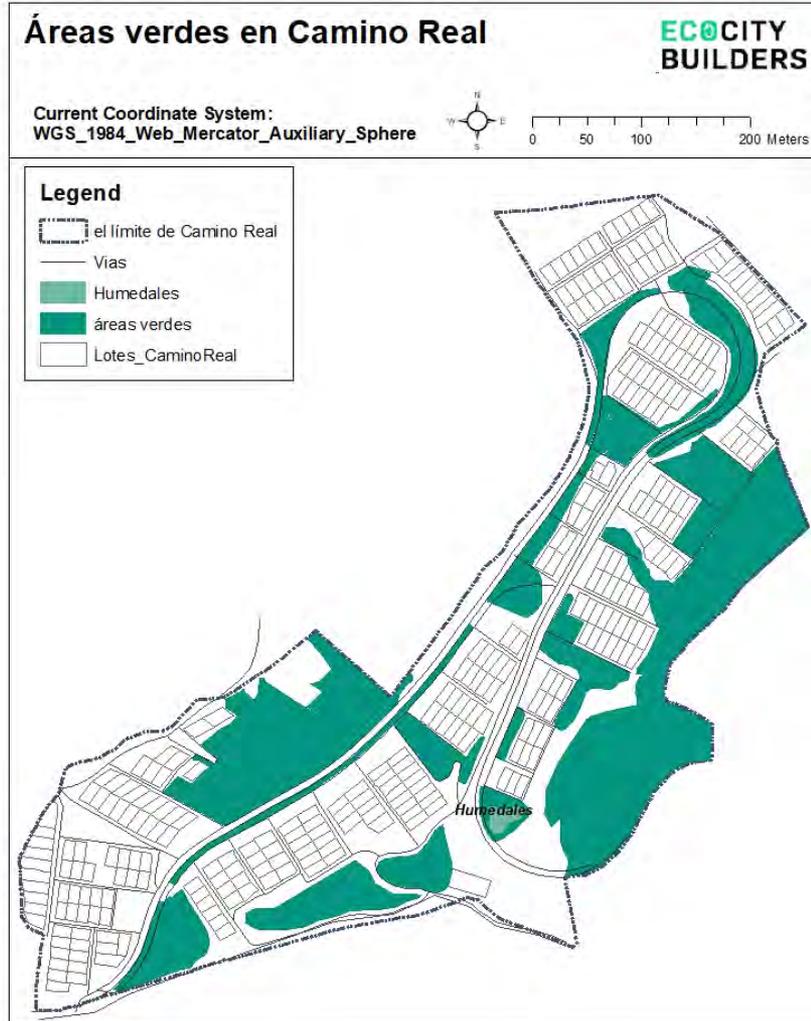
ECOLOGICAL
IMPERATIVES

GREEN SPACES



GREEN SPACES

The Camino Real neighborhood is made up of approximately about 50% green space. This is a defining feature of the neighborhood since many neighborhoods in Cusco have been so densely developed that they have lost almost all of their green spaces. The green areas are publicly owned and many have been designated by the Cusco Planning Department as areas of high ecological value, however, the majority of these spaces are in bad condition with contaminated water, erosion, informally dumped garbage and with possibly fatal security problems. The population of Camino Real highly values their green spaces and many residents want to organize themselves and receive financial support to restore and maintain their beloved green spaces through community led initiatives.



BIO - CORRIDORS

There is a micro-basin in the neighborhood with a wetland and three bodies of water. It is the head of the Saphy River basin and is very important to the natural water resource of Cusco. The micro-basin is currently contaminated with drainage and garbage and there is no safe access, lighting, or adequate paths in the micro-basin area. The wetland area is home to many native and seasonal species that are at risk for the elimination of their habitat by an invasion of eucalyptus trees, the conversion of wild space to informal crop plots, and informal dump sites of solid waste.



BIODIVERSITY

The neighborhood is home to a great biodiversity of native plant species. Many of the plants have medicinal uses and the neighborhood's Quechua population has the knowledge of the plants and their medicinal properties. There is a concentration of the native plants in a botanical garden that was an initiative that was implemented several years ago by an organization called Guama Poma. The garden is beautiful and has preserved the diversity of plant species in Camino Real, but the garden is not maintained and the paths are thin and covered with non-native invasive plants. That threaten the biodiversity of the garden. Some members of the community are beginning to develop informal vegetable plots in the garden and in the process they are removing native and biodiverse plants. Young people do not have the knowledge of plants and their uses. The plants attract seasonal animals and have a cultural meaning that dates back to Inca times.



The team of experts developed approximately 35 proposals through a participatory process with the community members of Camino Real. The proposals were initially organized in alignment with the Ecocity International Standards. The expert team then worked to find connections and opportunities to integrate the proposals in order to break the proposals out of their siloed themes and maximize the impact by proposing four sustainable, integrated strategies: a Multi-use Community Center in Camino Real, a community run recycling and re-use TAMBO center, Lliklla -an integrated approach to the community's basic services such as water, electricity and mobility and weave together a cohesive neighborhood identity, and a final proposal that supports the success of the first three proposals through the development of various neighborhood committees.

GOVERNANCE COMMITTEES



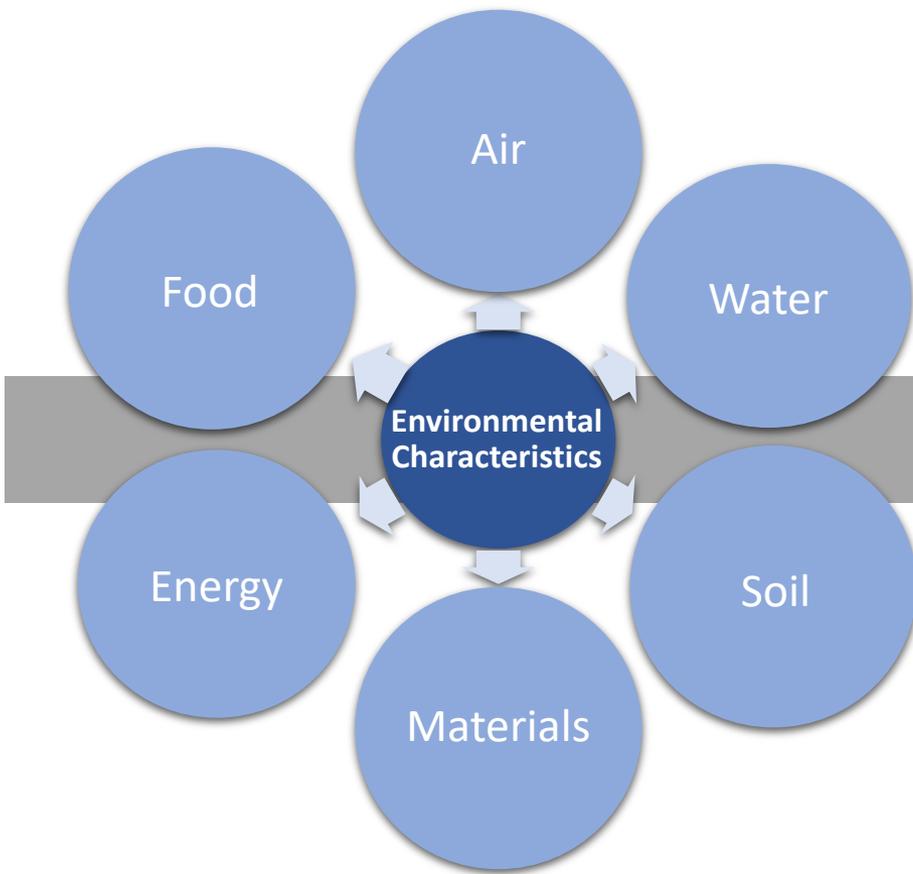
CAMINO REAL CENTER

TAMBO CENTER

LLIKLLA



The Initial Siloed Proposals



BIO-GEO-PHYSICAL

AIR

Proposal 1

Conduct Air Quality Tests Throughout Camino Real



Develop air quality reports based on the air quality data collected by UNSAAC's 'Shelter' air quality monitoring station.

Action

Test Camino Real's air quality. UNSAAC air quality research team will prioritize Camino Real as a study area for the Shelter air quality monitoring program. Tests results will be generated into a report that can be used to make informed decisions around air quality improvement programs such as tree buffers along the bordering highway. These programs will protect Camino Real residents from dangerous air pollution and associated health risks.

WATER

Proposal 1

Provide Safe, Reliable, and Potable Water in Camino Real

Implement water storage systems and rainwater capture. The population in this way has greater water supply during the day.

Action

Install a neighborhood wide system for back-up water storage and attached filtration tanks to be able to cover the hours when water is not available in Camino Real.



Action

Work with the Cusco water utility, SedaCusco, to improve the Potable Water Distribution Service within Camino Real and **improve** water supply so that community members have access to fresh drinking water all day long in their homes and reduce costs associated with the existing boil their drinking water.



Action

Install residential rainwater collection gutter systems and/or rainwater collection tanks on households in Camino Real for water use in the rainy season of Cusco.



WATER

Proposal 2

Clean and Safe Wastewater Removal

*Remove Broken Sewage
Collection Systems and
Remediate Associated Pollution*

Action

Manage the recovery and/or removal of the existing collapsed drainage wells which are regularly contaminating the waterways and soil in Camino Real. Representatives of SUNASS made a formal report on the collapsed drainage system collection. Work with the Camino Real leadership board to produce a formal letter to SedaCusco expressing the concerns of the community around the contamination and failing sewage system and SedaCusco repair the system. Reduce the soil and water pollution through bioremediation methods such as wetland restoration with natural filtration grasses and the introduction of native micro-organisms.



WATER

Proposal 3

Recover, Protect and Care for Water Bodies

Implement conservation measures for the Camino Real bodies of water, because of the importance they have as part of an ecosystem.

Action

Protect these bodies by restriction measures such as perimeter fencing or a formal protected waterway site that is monitored by Camino Real hired community members to ensure that the water is not further contaminated.



Action

Care for the natural waterways and bodies of water in Camino Real through an environmental committee that works to educate and engage all residents around the restoration and protection of the invaluable natural resource and ecosystems in their community. Seek the support of Perú's water agencies and institutions such as SUNASS, SedaCusco, and ANA.

Action

Recover the bodies of water by superficial and aquatic cleaning. Work with the Camino Real leadership council to engage citizens in the clean-up efforts through the required "faena" or community chores program.



WATER

Proposal 4

Social Programs SUNASS

Strengthen education on 'Water Culture' in the population so that Camino Real citizens understand their water rights and sustainable water use practices.



Action

Participate in the SUNASS National School Contest "Good Practices for Saving Drinking Water" along with hundreds of other Peruvian educational institutions to raise awareness within the youth about the importance of caring for the earth's water.

Action

Collaborate with SUNASS to provide support in training on legal claims procedures with SedaCUSCO around water service. SUNASS will directly train citizens and Camino Real leadership in their rights around water quality and quantity.



**V CONCURSO ESCOLAR NACIONAL
BUENAS PRÁCTICAS
PARA EL AHORRO
DEL AGUA POTABLE**

MATERIALS

Proposal 1

Community Compost Program

Transform organic waste from Camino Real households into compost that can be used in neighborhood vegetable and flower gardens.

Action

Identify a site within the Camino Real neighborhood and construct a composting structure and associated community run program where community members can dispose of their organic waste in an ecologically safe manner. Community members and community run gardens can use the compost in their gardening. Any excess compost can be sold in the Camino Real Market by community members. Provide Camino Real residents with a training in the technical management of compost production and earthworm humus.



MATERIALS

Proposal 2

Community Program for Recycling and Reuse of Materials

Law of Integral Management of Solid Waste for the Non-Municipal Area based on Legislative Decree N ° 1278 and its Regulations

Action

Form a committee to build adequate infrastructure in Camino Real for the recycling or reuse of inorganic solid waste. Build a centralized community recycling and reuse center where residents can drop off their recyclables and reusable items as well as pick up reusable items that they need. The committee should host capacity building workshops to train community members in the proper handling of inorganic waste (polyethylene containers, cartons, RAES, etc.) The committee should also coordinate with inorganic trading companies to sell recyclable items and raise money to support the center and one or more center employees.



FOOD

Proposal 1

Transform Outdoor Spaces into Gardens

Increase greenery throughout Camino Real by transforming outdoor spaces, roofs and walls into garden beds and vertical gardens.

Action

Work with community members to identify outdoor spaces with permeable surfaces, empty wall spaces, and viable roof structures in and around their homes that can be transformed into green spaces such as vegetable gardens or vertical gardens.



Action

Develop a seed and plant sharing community group where community members can share their experiences with their green spaces.

FOOD

Proposal 2

Community Cultivation of Fresh Organic and Local Produce

Promote healthy food cultivation directly in Camino Real through a community gardening project.

Action

Work with the Planning Department of Cusco to identify legal formal sites for community farming.



Action

Engage community members in educational workshops around permaculture to increase crop production for the sale of excess fruits and vegetables in the Camino Real Market. Community members can utilize the community's organic waste to produce compost for the crops and to further increase their yields.



FOOD

Proposal 3

Guinea Pig Production

Promote the consumption of healthy and sustainable guinea pig meat as opposed to red meats through the production of guinea pigs in Camino Real.



Action

Build capacity within the neighborhood for interested community members in the development and raising of guinea pigs through training workshops in the management of guinea pig breeding. Hold a peer to peer recipe and technique sharing in the preparation of guinea pig-based meals. Some families can breed guinea pigs for their own consumption while others can sustainably breed enough to sell at the Camino Real market.

CLEAN ENERGY

Proposal 1

Energy Saving and Sustainable Housing

The cleanest and cheapest energy is the energy that we do not use.

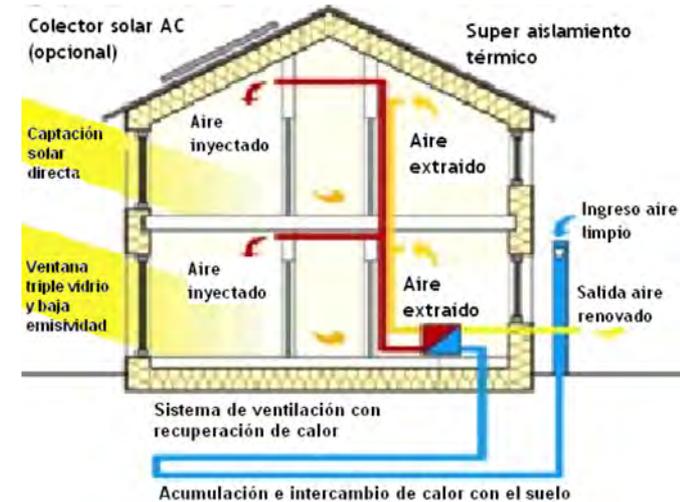


Action

Implement a consulting program on how to build sustainable housing and improve existing housing. This action will be done in collaboration with the local energy company, Electraser. Electraser has a social outreach program where they work directly with interested citizens to promote safe and sustainable energy consumption practices. The Energy Committee will coordinate workshops and events with Electraser in the Camino Real community.

Action

Implement a program and intensive consultancy on energy efficiency / energy saving by and for the neighborhood



Action

Implement a credit program for the replacement of household appliances and other electrical equipment with high electricity consumption and facilitate access to equipment with high energy efficiency or using renewable energy: for example solar thermal / pressure cookers / solar radios / electric cookers.

CLEAN ENERGY

Proposal 2

Camino Real Energy Microgrid

Analyze the Potential of Wind, Solar and Biomass Energy and Create Pilot Projects for the Generation of Energy in Microgrids

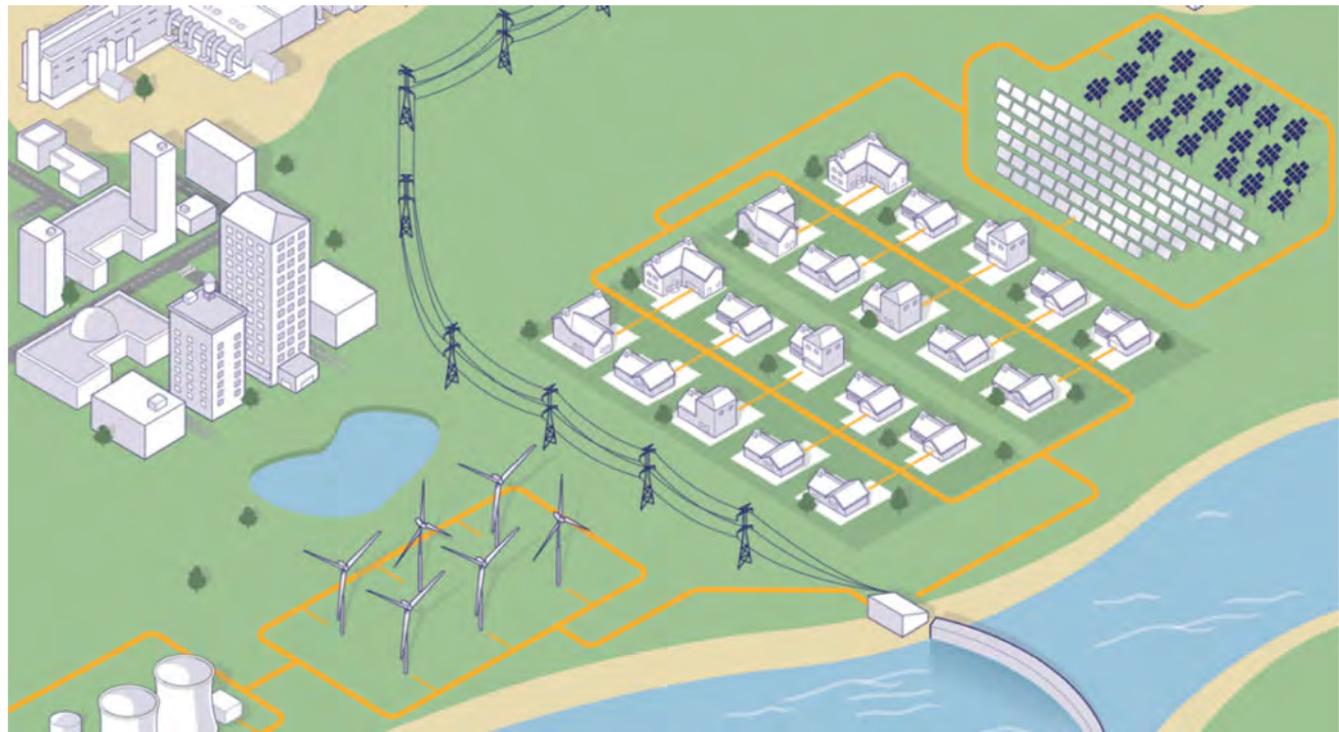


Action

Perform a neighborhood wide analysis for the potential of a microgrid fueled by wind energy within Camino Real. Conduct an impact analysis on potential impacts on migrating bird species.

Action

Conduct a feasibility study for the installation of an energy microgrid in Camino Real to produce renewable energy for consumption in the neighborhood and/or the sale of excess energy back to Electrasur or to neighboring community households.



CLEAN ENERGY

Proposal 3

Camino Real Public Lighting

Expand public lighting throughout Camino Real and improve security and quality of life.

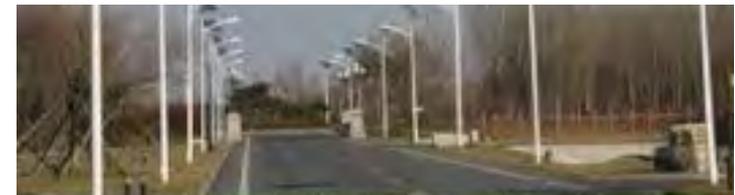
Action

Work with Electro Sur Este to analyze the existing public lighting infrastructure in Camino Real and determine the needed public street lighting. Formulate an extension request for public lighting based on the current regulations and the planned growth of the neighborhood.



Action

Design and Install lighting in the botanical garden, along the Camino Real Qapaq Ñan pathway, and around the cultural heritage site called Waasa Huasahuara to promote recognition of the community's cultural and natural assets as well as increase safety and access to these locations from day to night. These lighting installations should be professionally designed and installed to highlight unique characteristics of Camino Real cultural heritage sites and to promote outside visitors to come to the sites.



CLEAN ENERGY

Proposal 4

Solar Thermal

*Initiative solar thermal energy for
heating water in Camino Real
households*



Action

Carry out a program of construction and installation of solar hot water in the homes of the neighborhood for low-income families.

Action

Facilitate the acquisition of solar thermal systems through credit programs for middle-income families.



CLEAN ENERGY

Proposal 5

Reforestation Program to Produce Various Types of Wood for Different Uses in the Neighborhood

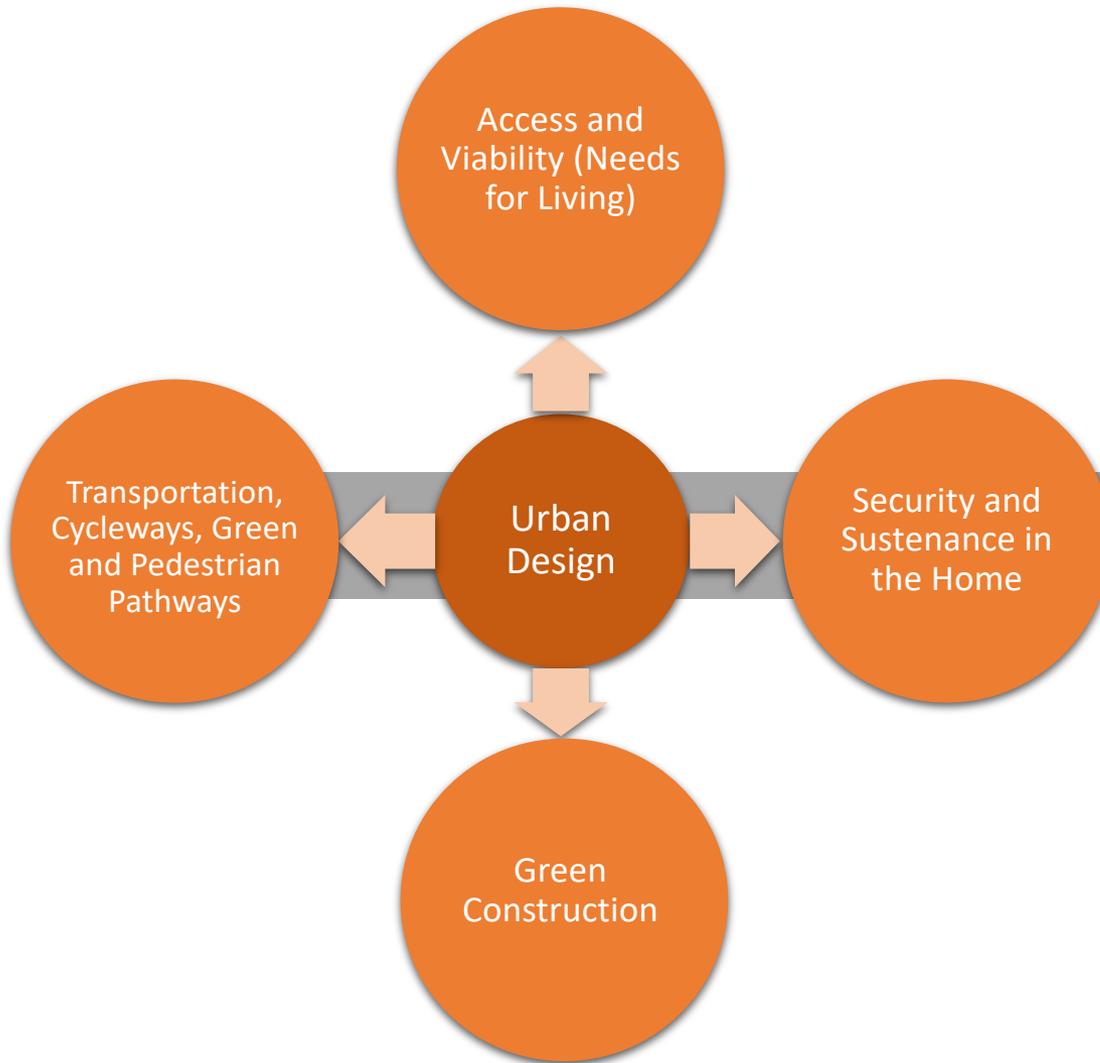
Wood as fuel and ecological material if it comes from sustainably managed projects.



Action

Reforestation in the neighborhood under the concept of sustainable forest management to produce wood for different uses: - wood for use in kitchens - wood for furniture - wood for buildings - fruit trees



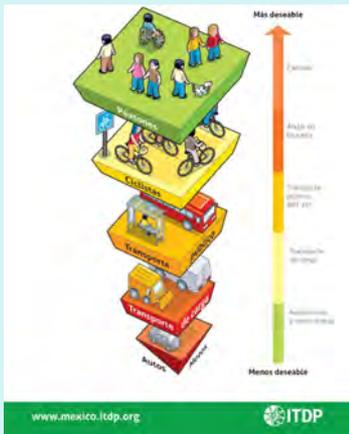


URBAN DESIGN

URBAN MOBILITY

Proposal 1

Universal Access to “Shared Streets”



Implementation of universally accessible pathways for children, women, men, and people with reduced mobility.



ACTUAL
CONDITIONS



PROPOSED
CONDITIONS

Action

Intervene in the main street of Camino Real with criteria of universal accessibility.

Prioritize non-automobile modes of transportation such as walking, sunning, rollerblading, skateboarding and biking.

Eliminate physical and architectural barriers to sidewalks and a linear pedestrian and cyclist pathway in Camino Real that connects residents to nodes of city-wide public transportation.

URBAN MOBILITY

Proposal 2

Reduce Traffic Speed



Implementation of safe zones where priority is given to pedestrians and cyclists in the streets of Camino Real.



Zone 30 km/h



Zone 30 km/h

Action

Implement an awareness and sensitization program for the neighbors of Camino Real to promote critical, sustainable, and creative thinking around the use of the streets, which currently is predominantly for automobiles, buses and large trucks. Intervene in the speed for motorized vehicles in the community by regulating speeds so that they do not exceed 30 km/h within the Camino Real neighborhood using signage, speed bumps, and police enforcement of the speed limit.

URBAN DESIGN

Proposal 3

Accessible Public Spaces in Proximity to Camino Real



Achieve the functional autonomy of the neighborhood with equipment and nearby services, with proximity of distances no greater than 500 meters.

Action

Create a Camino Real Observation Deck that serves as a tourist attraction and local public space in Camino Real. The deck will conserve and highlight the natural wetland landscape and archaeological site.



Action

Build public spaces for all community members where leisure, recreation, commercial and cultural activities can coexist to strengthen social relations and improve quality of life within the neighborhood.



Action

Strengthen local commerce through the construction of an open market in Camino Real. Install adequate infrastructure leading to the market and orient the market to the beautiful vistas of Camino Real.



URBAN DESIGN

Proposal 5

Transform Local Housing into Resilient, Safe and Sustainable Structures

*Use sustainable design
and studies of the ecology
of the area to secure its
buildings.*



Action

Develop architectural plans for the construction of a model house that considers ecological systems in the design, is safe against rain and mudslides, and economical so that it can be replicated in the neighborhood.

Action

Reinforce sectors at risk of landslide by installing retention walls, building storm water management systems, and planting ground stabilizing plant and tree species.





SOCIOCULTURAL

SOCIO CULTURAL

Proposal 1

Natural Ancestral Medicine Center

Preserve the cultural and medicinal plant knowledge within the residents of Camino Real through the development of Natural Ancestral Medicine Center or Mini-Hospital.

Action

Provide health services coverage to the Camino Real community and the adjacent communities through the development of a local mini-hospital that specializes in ancestral healing techniques. The mini-hospital can be developed on the land already zoned by the Municipality for a local hospital. Promote agreements between the Ministry of Health and the Ministry of Culture in order to promote the use and preservation of natural, ancestral medicine knowledge.



SOCIO CULTURAL

Proposal 2

Construction of the Zonal Pampa Camino Road Market

*Develop ecologically sound
business strategies to boost
the Camino Real economy.*

Action

Promote the local economy by promoting sustainable micro-enterprises such as the cultivation of crops using the CR compost.

Action

Promote the cultivation of organic products within public land in Camino Real.



Action

Promote the learning activities of local crafts and gastronomy. Work with Moravia community in Medellín to develop recycled material crafts that can be produced and sold in the market.



Action

Create a sustainable market identity through the strict sales of organic and sustainable products only.



SOCIO CULTURAL

Proposal 3

Educational Center of Northwest Cusco

*Construction of Educational
Center and Secondary
Level Sustainability-Themed
School for NW Region of
Cusco*



Action

Build a school in the Camino Real neighborhood that can serve the entire Northwestern region of Cusco. The school will be a secondary school focused on sustainability and will boast an outdoor classroom that highlights the native plants and animals and wetland of Camino Real.

Action

Create an educational center in Camino Real that defines values for the care of the environment (bio-garden). The Municipality of Cusco has already zoned a section of Camino Real for the construction of an educational center.

Action

Host diplomas, continued education and extra-curricular programs such as adult literacy workshops and architectural certification courses.

SOCIO CULTURAL

Proposal 4

Camino Real Multi- Use Community Center

*Design and build a
community multi-use center
for the use of Camino Real
residents.*



Action

Restore the community center of Camino Real into the hands of the community and relocate the police to an adjacent site. Plan site programming that will strengthen the Camino Real community such as a Camino Real unique danza group with unique costumes and diverse dancers (men, women, adults and children); community governance meetings; a public library program; a public tool lending library program; women's group, organization of medicinal plant experts; and more!



SOCIO CULTURAL

Proposal 5

Preserve Cultural Heritage



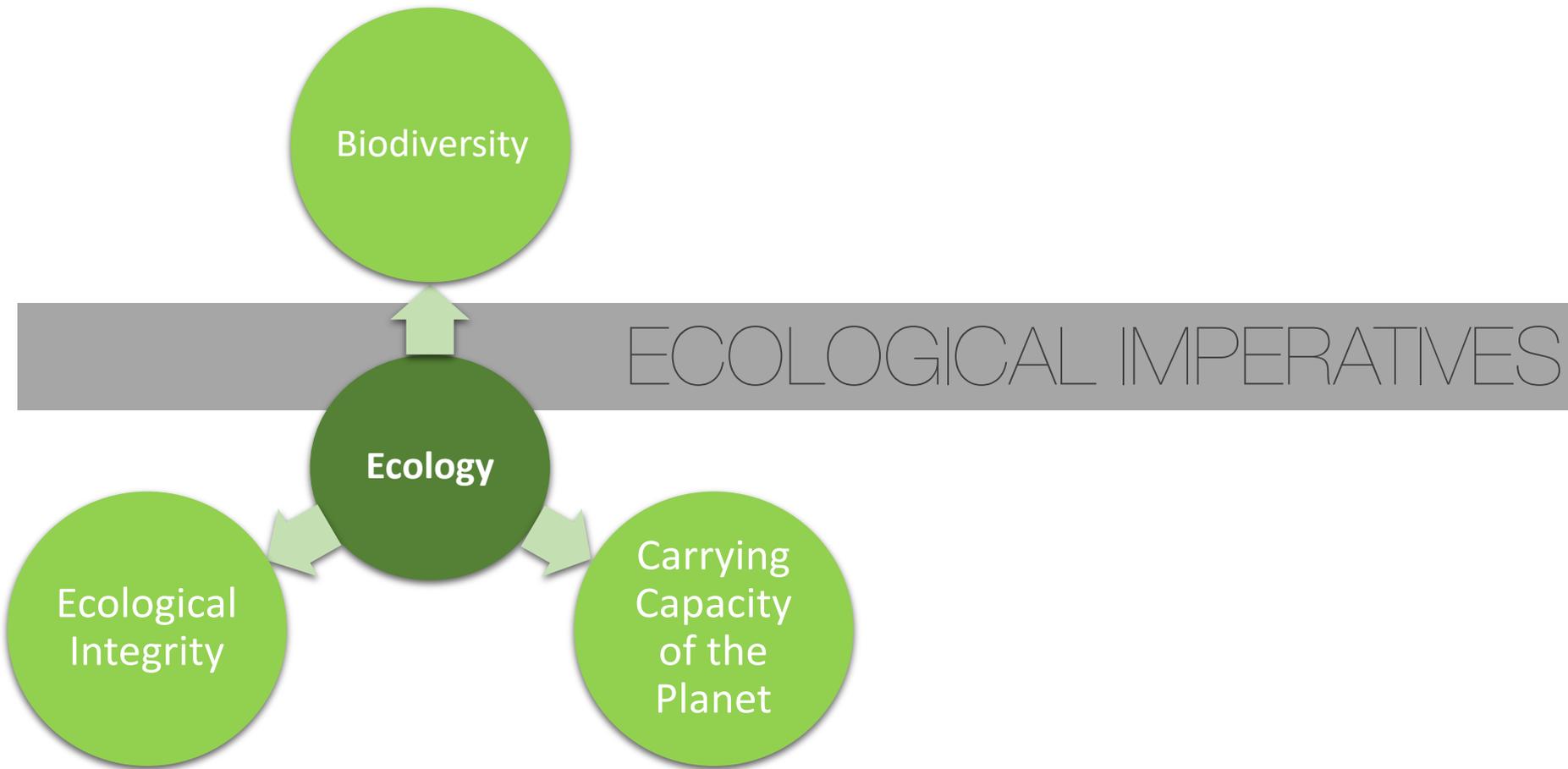
*Strengthening Values and
Cultural Identity of the APV
Camino Real*

Action

Organize Camino Real community members and leadership in the revitalization of their community's culture sites. Participate in the Ministry of Culture revitalization project of the the Qhapaq Ñan cultural legacy trail that passes through the neighborhood
Promote the restoration and value creation of the cultural site Waasa Huasahuara.
Develop a neighborhood committee that can organize community site revitalization days.

Action

Promote the creation of a cultural interpretation center in Camino Real. Encourage cultural activities with the support of government entities and encourage residents of Camino Real to participate in theater, music, and dance workshops.



ECOLOGICAL IMPERATIVES

Proposal 1

Restore and Protect the Green Spaces of Camino Real



Action

Organize monthly work days for the community members of CR to clean the public green spaces, plant flowers in the streets and botanical garden, plant trees in the micro-watershed, build trail systems throughout CR and connecting to larger trail network, remove litter from the streets and waterways and build reinforce sloped green spaces.



Action

Collaborate with the Municipality in the restoration and development of a formal ecological protection zone within the CR wetland. Enrich Cusco's existing plan with CR community ideas and ensure that the security and maintenance employment opportunity is first offered to CR.



Action

Connect the green areas with permeable trails with clear signage to link protected areas of CR and encourage visitors to explore the CR ecology.

Implement economic programs in green areas that support the maintenance and protection of green areas for and by the community of CR.

ECOLOGICAL IMPERATIVES

Proposal 2

Restore, Improve and Amplify the Botanical Garden of Camino Real



Action

Expand the botanical garden to be the botanical garden of Cusco. Promote the garden on a cultural route formalized by the Ministry of Culture and promoted through Cusco tourist agencies.



Action

Protect the biodiversity of indigenous plants and insects in the neighborhood and in the botanical garden with an educational program with outdoor classrooms, a butterfly garden, plaques with the names and uses of plants, and build a seed bank and store (like a museum). Grow and plant new plants that are not currently in the garden.



Action

Improve the park with wider, cleaner and additional trails, remove invasive plants, repair the irrigation system, and install benches for resting and restrooms.

Expand the botanical garden to be the Botanical Garden of Cusco to implement economic programs in the Botanical Garden

ECOLOGICAL IMPERATIVES

Proposal 3

Form an Floral & Ecological Neighborhood Identity

Connect all initiatives and programs to the theme of native flowers and ecology to cultivate a neighborhood ecological identity.



Action

All the streets in CR are named after native flower species. The CR community will plant flowers and add flower sculptures to the light posts/street signs that correspond with the species street names.



Action

Form a committee to plant the flowers and take care of the gardens and use a small group for 2-3 years to establish the gardens and maintain them.



Action

Include the theme of native flowers in the school with an outdoor classroom outside, in the hospital with a headquarters of natural medicines, and in the dance of the community.

ECOLOGICAL IMPERATIVES

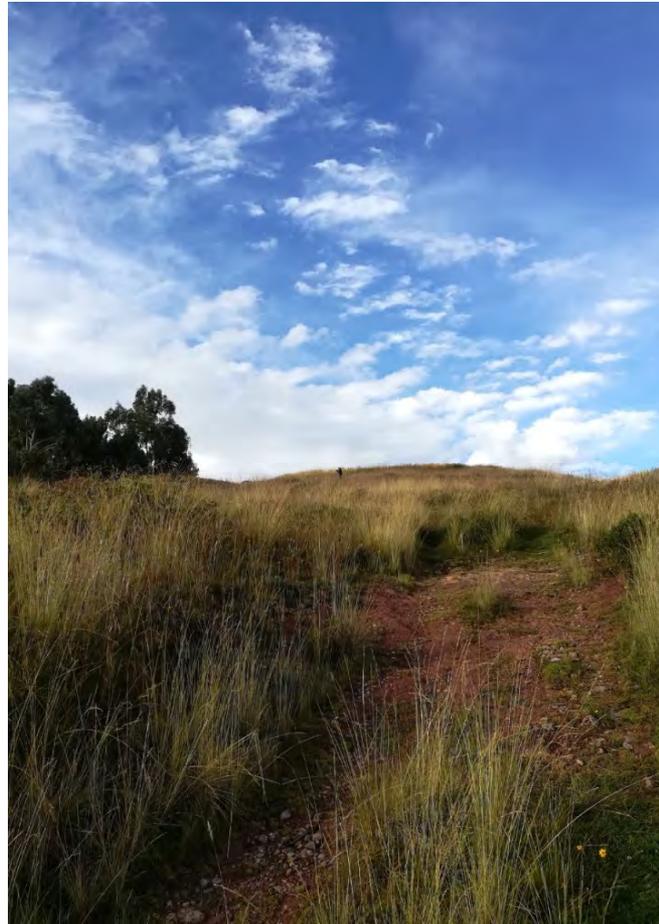
Proposal 4

Connect Camino Real to the Trekking of Cusco

*Build trails that connect
Camino Real to other popular
trekking and touristic
destinations.*

Action

Connect the paths inside the park with the Municipal linear park and path plan for along the Saphy River and the Camino Real Market to attract eco-tourism to the neighborhood. The trails can follow the Chakan River and connect to the Sacsayhuaman Park.



Action

Build picnic tables by the Camino Real Market where the trekkers can rest, have lunch and enjoy the CR area and view.



Action

Build an Eco-Hostel in one of the green areas. The hostel will provide lodging for tourists who want to have a traditional experience and/or want to study the native plants of Cusco.

The Integrated Proposals

CAMINO REAL COMMUNITY CENTER

ANCESTRAL HEALING

The center will feature an ancestral healing center (mini-hospital) that uses native plants and techniques.

ENERGY MICRO-GRID

The center will feature and energy microgrid. The production and storage of the system will be integrated into the design of the center but will serve CR at large.

GOVERNANCE MEETINGS

The community committees will use the space to hold regular committee meetings.

DANZA WORKSHOPS

The center will have a space to develop a community dance and practice other types of movement.

EDUCATIONAL CENTER

The center will have multiple classroom spaces and a computer lab where community members can experience lifelong education.



TAMBO RECYCLING & REUSE CENTER

RECYCLE

The TAMBO center will be a location where recyclable waste can be sorted and stored. The CR community will work with recycling companies to sell the organized, recyclable materials.

REUSE

The TAMBO center will be a “store” where reusable items will be organized and available for use by community members.

COMPOST

The TAMBO center will compost neighborhood organic waste and produce fertile soil to be used in the neighborhood crops.

EMPLOYMENT

The TAMBO center will have one or two formal community jobs to train the community in recycling, reuse and compost and to facilitate the processes in a professional manner.

Tambo in Quechua it means constructions on the Inkas roads where the resources are stored.



Lliklla in Quechua is a cloth woven from alpaca and used to wrap the Andean Priests collection of power objects. This proposal includes all proposals that span the community as a whole *and that are much like the pieces of Camino Real woven into the fabric of the community.*

BOTANICAL GARDEN

Restore and improve the Camino Real botanical garden by adding more indigenous plant species, clearing trails, installing bathrooms, adding informative plaques, and establishing an entrance fee system and organization of neighborhood guides.

GREEN SPACES

Restore the green areas of Camino Real and connect them with permeable paths, informative plaques of the species of plants and animals and geological characteristics. Develop a map that highlights the natural spaces in Camino Real as well as the linkages to the greater area trekking trail system.

LIGHTING & ENERGY

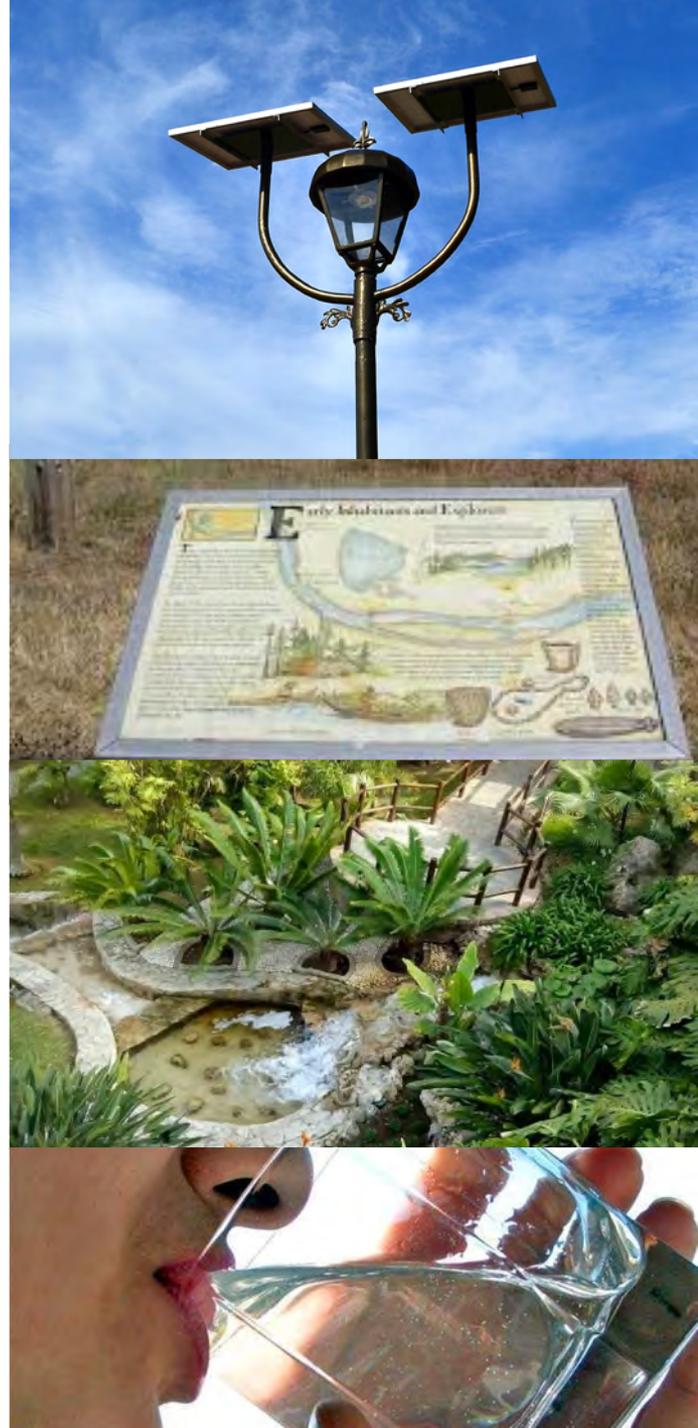
Improve the lighting of the streets, trails, and archaeological sites with posts of solar lighting. Improve the efficiency of electricity and home appliances with ElectraSur programs.

MOBILITY

Improve pedestrian walkways, reduce speed limits on main thoroughways, connect sidewalk system to transportation nodes and improve the currently informal pedestrian pathway along the railroad tracks.

WATER

Improve the quality and regularity of drinking water in the neighborhood through education, installation of a neighborhood reservoir, and formalization of water reuse systems. Repair the Drain System. Clean and protect the bodies of water with information boards and a committee of neighbors to care for them.



Governance Committees

NW NEIGHBORHOODS ALLIANCE

Executes projects that cross neighborhood boundaries. Is comprised of representatives of CR and surrounding community elected officials on the APV leadership boards.

ENVIRONMENTAL COMMITTEE

Organizes neighborhood litter clean up and trail system development and restoration volunteer projects days done for and by CR.

RECYCLING & REUSE COMMITTEE

Build capacity within the community around recycling and reuse of materials in CR. Organize and run the TAMBO center and a compost program.

CLEAN AND SAFE WATER COMMITTEE

Meets around restoring the wetland and water service in their community. Will interface with SUNASS and SedaCusco

SAFE CONSTRUCTIONS COMMITTEE

Works with architectural plans, volunteer architectural groups and municipality to ensure all homes (especially those run by single women) and buildings are safe.

CLEAN & SAFE MOBILITY COMMITTEE

Organize plaza construction for bus stop area, street fairs, and trail and sidewalk improvement days.



Camino Real - Sustainable Neighborhood Plan

For more information or to donate to plan implementation visit us at ecocitybuilders.org
or
contact Sydney Moss at sydney@ecocitybuilders.org



GOBIERNO
MUNICIPAL DEL
CUSCO



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BUILDERS**