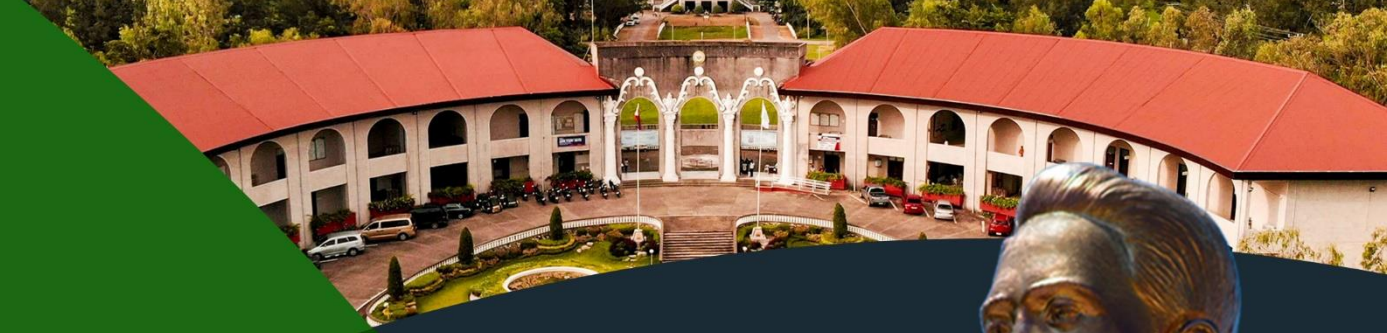

MMSU SIRMATA 2040
LAND USE DEVELOPMENT AND INFRASTRUCTURE PLAN (LUDIP)

VOLUME 1 : UNIVERSITY PROFILE

FOREWORD

On behalf of the Mariano Marcos State University (MMSU) Family, I am pleased to present the *Sirmata 2040: MMSU's Land Use Development and Infrastructure Plan (LUDIP),* pursuant to Republic Act 11396, or the "SUCs Land Use Development and Infrastructure Plan Act of 2019". This document reflects the University's commitment to optimize the utilization of our existing land and infrastructure resources in the pursuit of our mandate and aspirations, with the goal of establishing a resilient and future-ready University, characterized by:

- Safe, secure and livable environment
- Institutionalized standards of infrastructure design
- Resilient infrastructure responsive to evolving needs
- Modernized facilities aligned with world-class standards
- Aggressive development of landholdings for improved productivity
- Thorough physical planning and efficient implementation
- Aesthetic and culturally-focused campus

Sirmata is more than just a blueprint of the University's future. Rather, it is a testament to its history. It connects present and future developments with the seminal hopes that brought MMSU into being more than four decades ago. Likewise, it documents the steps we took, collectively and individually, to formulate a plan that would clearly embody our aspirations.

The process of making the LUDIP has been a difficult yet crucial step in our long-term efforts to fully consolidate and develop our land resources. Along the way, we encountered – and continue to encounter – challenges, especially considering that as of this writing, a significant number of lands under the stewardship of the University are yet to be titled. The geographical and socio-economic conditions of our campuses also made planning more painstaking, as we needed to come up with plans that address varying needs and demands.

Moving forward, we have to take aggressive steps to implement the strategies that we have outlined in this Plan. I invite every member of the university community to take the Plan to heart, and to contribute to its realization. Let us all work together to make *Sirmata* an integral part of MMSU's history.

SHIRLEY C. AGRUPIS, PhD
University President

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Proposed Physical Development Thrusts and Spatial Strategies

The MMSU Land Use Development and Infrastructure Plan (*Sirmata 4.0),* which forwards the University's Development Thrusts and corresponding spatial strategies is formulated on the basis of the land use and infrastructure vision, goals, and objectives and the sectoral analysis of the university and the LGUs in which the campuses are located.

Taking into consideration the VMGOs of the University, sectoral studies, consultations with stakeholders, and results of the SWOT analysis, the seven development thrusts were drawn. For each thrust, development options and alternatives were considered and evaluated using five criteria, namely: 1) benefits; 2) cost; 3) ease of implementation; 4) time; and 5) secondary impact. The options were rated as bases for prioritization of the development options.

Thrust 1: Establishment of Facilities for Academic Excellence and Global Competitiveness

Alternative 1. Upgrading and expansion of academic facilities.

This alternative involves the careful evaluation of existing facilities in consideration of present and future needs, and upgrading and / or retrofitting these facilities in order to meet current and future demands as well as to satisfy policies, standards, and guidelines of degree programs.

Alternative 2. Construction of new academic facilities.

Based on the Vision of the University and in view of the projected expansion of academic programs, new buildings shall be constructed to meet the need for classrooms, laboratories, libraries, and other academic facilities.

Alternative 3. Complementation of land and facilities.

This is a strategy in which land used primarily for other purposes (e.g., research, protected land, etc.) shall also be used as supplementary resources for instruction. In other words, students shall be allowed to use research laboratories; agro-industrial resources shall be used as field laboratories for students in relevant fields.

Thrust 2: Strengthening Land and Facilities for Innovation and Community Engagement

Alternative 1. Enhancement of existing facilities and amenities.

At present, MMSU has a number of infrastructure and non-infrastructure resources used for research and extension purposes. However, these need to be further enhanced and upgraded through the installation of state-of-the-art equipment, repairs, or renovations.

Alternative 2. Re-development options.

This refers to demolishing existing buildings that are no longer functional and safe, and using the same area to build new facilities. This alternative involves structural and hazard analyses of existing buildings, among others. Ideally, the new structures shall take into consideration the existing uses of the site. Re-development gives way to new construction for better arrangement of buildings, and other needed amenities.

Alternative 3. New Research & Development Hub.

To enable the University to carry out its research, development, and innovation function, a new research and development hub can be considered in addition to the RDE Complex and the S&T Park.

Alternative 1. Knowledge & Technology-based.

MMSU shall consider engaging in projects that are knowledge and technology-based. Alternatives include the establishment of the Knowledge, Innovation, and Science and Technology (KIST) Park.

Alternative 2. Agro-Industrial & Manufacturing.

With its vast land resources, infrastructure, and available technologies, the University can engage in agro-industrial and manufacturing activities. Toward this end. expansion and agriculture-based and fishery-based projects, as well as partnering with agri-entrepreneurs may be considered.

Alternative 3. Industrial Development.

This involves facilities and activities to build and grow local industries by using technologies that can lead to an increase in a business' output and an increase in profits. These include support facilities for MSMEs, private-public partnerships, and economic zone development within University land.

Alternative 4. Agro-Industrial – Crop Diversification.

Crop diversification is a strategy to maximize the use of land and optimize farm productivity and incomes. The diversity of crops planted in agricultural lands is dictated by physical factors such as land capability, rainfall patterns, water quality, crop suitability and technology, as well as economic factors such as costs, prices, markets, and economic viability of alternative cropping. This strategy is especially useful given the variability in geographic conditions of the campuses. Facilities in support of crop diversification to attain SDG 2 and SDG 15 include the Integrated Agricultural Laboratory and the Seed Bank and Bambusetum in Dingras and the nurseries in Batac.

Thrust 3: Optimal Management of Resources for Agri-fisheries and Industrial Development

Alternative 5. Agri-processing.

Agri-processing refers to the processing of raw materials and intermediate products derived from the agricultural sector. This strategy includes the establishment of facilities in support of product development initiatives from agricultural produce, such as those in the RDE Complex, Garlic Center, and the Mushroom and Bamboo Processing Centers.

Alternative 6. Agri-fisheries: Small-scale fishery industry.

An alternative to be pursued in the Currimao campus and Sarnap Lake in Batac is the development of small-scale fishery industry that would utilize available aquatic resources. Research and training facilities in support of agri-fisheries sector development shall likewise be established to expand livelihood opportunities and improve the socioeconomic status of fisherfolk in support of the province's development targets and SDG 14.

Thrust 4: Sustaining a Vibrant, Engaging, and Culturally-Focused Campus Life

Alternative 1. Neighborhood development.

This alternative involves the establishment of village-style residences for faculty and staff. It may be pursued where there is adequate

land area and resources to support the construction of single, detached houses.

Alternative 2. Compact Housing Development.

This alternative involves the construction of housing facilities such as duplex, apartment, or dormitory-type houses, especially in campuses where there are space constraints to development.

Alternative 3. Recreational – Facilities Improvement & Development.

Existing facilities such as the Sports Complex shall be refurbished or renovated with the addition of rubberized track.

Alternative 4. Recreational – New Construction.

This option involves the construction of additional recreational facilities in the different campuses.

Alternative 5. Development of Outdoor Spaces

To provide spaces for recreation and promote environmental awareness, outdoor spaces shall be maintained. This strategy involves landscaping and minimal investment in facilities such as outdoor seating and kiosks.

Alternative 6. Entry and Security monitoring facilities.

To safeguard the integrity of university property and promote security of its constituents, entry and security monitoring facilities must be installed in all campuses.

Alternative 7. Promoting campus tourism.

Strategies for this alternative include the promotion of tourism-based activities and initiatives and establishment of tourism-based facilities and spaces such as hotels, baywalk, eco-tourism parks, and information hubs.

Thrust 5: Strengthening Sustainability and Resilience

Alternative 1: Green buildings.

Anchored on SDG 7 and 11, this alternative requires that all new facilities follow green design, integrating lot design and development efficiency, energy and water efficiency, resource efficiency, indoor environmental quality and the building's overall impact on the environment.

Alternative 2: Hazard proofing of infrastructure.

This alternative is in support of SDG 11 and involves design and construction of buildings that can withstand or mitigate hazards such as severe wind, fire, extreme heat, earthquake, flood, and the like.

Alternative 3: Installation of waste management facilities.

This alternative involves putting up of facilities for waste management, such as Materials Recovery Facilities and Hazardous Materials Facilities as part of the overall plan for environmental management in support of SDG 6.

Alternative 4: Facilities for safe and clean water supply.

This alternative is in support of SDG 6 and involves the establishment of clean water sources and installation of water treatment and filtration systems in the campuses.

Thrust 6: Upgrading Connectivity and Operational Efficiency

Alternative 1: Utility Infrastructure: Partnership with Providers.

The University shall explore establishing partnerships with utilities providers for the provision of electricity, communication, and water.

Alternative 2: Institutional Infrastructure Investment.

This alternative requires the University to invest on its own utility facilities in addition to those of partner utility companies.

Alternative 3: Improvement of in-campus road network.

To promote in-campus mobility and efficiency of services, the road network shall be improved.

Thrust 7: Building the MMSU of the Future

Alternative 1: Smart Campus Development.

This alternative involves the development of advanced network infrastructure and Internet-connected devices to provide supportive and engaging experiences in support of MMSU 4.0.

Evaluation and Analysis of Physical Development Thrusts and Alternatives

Based on the evaluation, the alternatives were rated according to priority, with corresponding timeline of implementation:

Table 13. Scoring of Development Thrusts and Alternatives

Score	Priority	Timeline of Implementation
15 to 19 points	Priority	to be implemented in the next 3 years
11 to 14 points	Second Priority	to be implemented in the next 5 years
5 to 10 points	Least Priority	to be implemented in the next 10 years

Alternatives that were rated high (15 to 19 points) were considered as top priority. Strategies and projects aligned to these alternatives were scheduled for implementation in the next 3 years.

On the other hand, alternatives that were given moderate ratings (11 to 14 points) were considered as second priority. Strategies and projects aligned to these alternatives were scheduled for implementation in the next 5 years.

Finally, alternatives that were rated low (5 to 10 points) were given least priority. As such, strategies and projects aligned to these alternatives were scheduled for implementation in the next 10 years.

As the LUDIP covers a 20-year timeframe, development thrusts shall be reviewed from time to time, and the alternatives reconsidered in the light of existing trends and demands for land use and infrastructure.

Table 14. Evaluation of Development Thrusts and Alternatives

		Benefits	Cost	Ease of Implementation	Time	Secondary Impact	Evaluation
Establishment of Facilities for Academic Excellence and Global Competitiveness	Upgrading and expansion of academic facilities	3	2	3	4	3	P(15)
	New construction	4	1	4	3	3	P(15)
	Complementation of land use and facilities	4	4	3	4	3	P (18)
Strengthening Land and Facilities for Innovation and Community Engagement	Enhancement of existing facilities and amenities	4	2	3	3	3	P(15)
	Re-development options	3	1	1	2	3	LP(10)
	New Research & Development Hub	4	1	2	4	3	SP(14)
Optimal Management of Resources for Agri-fisheries and Industrial Development	Knowledge & Technology-based	4	3	3	2	3	P(15)
	Agro-Industrial & Manufacturing	4	1	2	1	2	LP(10)
	Industrial Development	4	1	1	1	1	LP(8)
	Agro-Industrial – Crop Diversification	4	3	3	2	3	P(15)
	Agri-processing	4	3	3	1	2	SP(13)
	Agri-fisheries: Small-scale fishery industry	4	3	3	2	3	P(15)
Sustaining a Vibrant, Engaging, and Culturally-Focused Campus Life	Neighborhood development – Village style	4	3	3	3	3	P(16)
	Compact Housing Development	4	2	2	3	4	P(15)
	Recreational – Facilities Improvement & Development	4	3	3	3	3	P(16)
	Recreational – New Construction	3	2	2	2	2	LP(11)

		Benefits	Cost	Ease of Implementation	Time	Secondary Impact	Evaluation
	Recreational – Development of Open Spaces	4	4	3	4	2	P (17)
	Entry and Security monitoring facilities	4	3	3	3	3	P(16)
	Promote campus tourism	2	3	3	2	3	SP (13)
Strengthening Sustainability and Resilience	Green buildings	4	3	3	2	3	P(15)
	Hazard proofing of infrastructure	4	3	3	2	3	P(15)
	Installation of waste management facility	4	3	4	4	3	P(18)
	Facilities for safe and clean water supply	4	4	3	4	3	P (18)
Upgrading Connectivity and Operational Efficiency	Utility Infrastructure: Partnership with Providers	4	3	3	3	3	P(16)
	Institutional Infrastructure Investment	4	1	3	2	3	SP(13)
	Improvement of in-campus road network	3	3	3	3	3	SP (15)
Building the MMSU of the Future	Smart Campus Development	4	2	3	2	3	SP(14)