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**PRE-FEASIBILITY STUDY REPORT FOR THE PROPOSED BUSIA COUNTY REFERRAL  
ANNEX SPECIALISED HOSPITAL**

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COUNTY GOVERNMENT OF BUSIA

**SECOND KENYA DEVOLUTION SUPPORT PROGRAM  
(KDSP II)**

**FY 2025/2026**

**NOVEMBER, 2025**

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## SECTION 1: PROJECT PROFILE

Project Name:	PROPOSED CONSTRUCTION OF BUSIA COUNTY REFERRAL ANNEX SPECIALISED HOSPITAL
Project Reference Number:	BSA/CG/KDSP II/HEALTH/2025
Date of approval of the concept Note:	OCTOBER 2025
Department:	HEALTH & SANITATION
Budget Vote (where applicable):	DEVELOPMENT (PSM)
Estimated Project Cost:	KSH. 1,352,122,276
Sector:	HEALTH
Accounting Officer:	CHIEF OFFICER DEVOLUTION
Official Contact Details (Provide email, telephone number, postal and physical address):	P.O BOX 1040-50400 BUSIA (K), BUSIA COUNTY REFERRAL HOSPITAL <a href="mailto:busiacountydhealth@gmail.com">busiacountydhealth@gmail.com</a> , Tel. +254-727-814-591
Project Threshold:	MEDIUM RISK
Project Geographic Location (Provide GPS coordinates here.):	34 <sup>0</sup> 1E 0.46N
County:	BUSIA COUNTY
Sub-County:	MATAYOS
Ward:	BURUMBA
Village:	48 ESTATE
Planned Start Date:	DECEMBER 2025
Planned End Date:	JUNE, 2026

## **SECTION 2: PROJECT BACKGROUND**

### **2.1 Situation Analysis**

Busia County has an estimated population of over 1 million residents, who rely on a combination of lower-level healthcare facilities (13 Hospitals, 18 Health Centers and 66 Dispensaries) and the Busia County Referral Hospital (BCRH), which is licensed as a Level 4 hospital. This hospital is often overwhelmed due to the growing demand for health services. The increasing population growth, cross-border disease burden, and limited capacity of existing health facilities have overstretched available infrastructure and personnel. Currently, the county faces the following gaps in the health care;

i. High Disease Burden

Busia County records high prevalence of infectious diseases and rising non-communicable diseases (diabetes, hypertension, Cancer).

ii. Limited Specialized Care

No Level 5 facility exists in the County, leading to over 40% of critical cases being referred outside (County Health Department, 2023).

iii. Poor Maternal and Child Health

Maternal mortality stands at 495 per 100,000 live births (KDHS 2022), above the national average of 342 per 100,000 live births

iv. Inadequate Infrastructure

Current facilities lack ICU units, cancer treatment, advanced surgical services, and specialized diagnostics.

As a border county and key gateway to East and central Africa, the county serves not only its residents but also cross-border populations seeking medical care. This also predisposes the county to various diseases such as, M-pox, Covid 19, Ebola among others. This regional demand underscores Busia's strategic position as a transnational health hub. However, the public health sector is currently unable to meet this growing demand, creating a vacuum on specialized services such as ICU, HDU, and diagnostic imaging (MRI and CT scan) services.

The Busia County health statistics is summarized in the table below,

**Vital Statistics**

INDEX	PROPORTION	POPULATION
Total population		1,069,325
Male	48.62%	519,906
Female	51.38%	549,419
Under 1 year (Surviving Infants)	2.93%	31,318
0 – 5 Months	50% of < 1 Yr	15,659
6 - 11 Months	50% of < 1 Yr	15,659
12 - 59 Months	80% of < 5 Yrs	107,997
6 - 59 Months	90% of < 5 Yrs	121,497
Under 5s	12.62%	134,996
WCBA	24.3	259,863
Under 15 Yrs	42.06	449,774
Estimated No. of Pregnant Women	3.11%	33,256
Estimated no. of deliveries	3.02%	32,287
Estimated no. of Obstetric complications	2.68% of Pregnant Women	892
Estimated post abortion cases	0.30% of Pregnant Women	100
Total No. of Adolescence (15- 24yrs)	21.71%	232,104
Adults 25- 59	27.04%	289,104
Elderly	5.46%	58,365
Life expectancy		52.5
Annual deaths (per 1,000 persons) – Crude mortality		12.6/1000 persons
Neonatal Mortality Rate (per 1,000 births)		8.2/1000 live births
Maternal Mortality Rate (per 100,000 births)		96/100,000 live births
IMR		84/1000 live births

The County Government of Busia, in collaboration with development partners, has made substantial investments towards upgrading BCRH to level 5 status. These includes the construction of a 60-bed ward, a modern ICU and Emergency Block, a fully equipped laboratory, Maternity & new born unit, Radiology Block and renovation of the main kitchen. Human resource strengthening has also been prioritized, with the county sponsoring the training of specialist cadres including psychiatrists, cardiothoracic surgeons, orthopedic surgeons, and ENT specialists. Despite these efforts, the available infrastructure and service capacity fall short of what is required for a fully functional Level 5 hospital. The proposed construction and upgrade project therefore represent the next critical step toward realizing that vision.

## **2.2 Problem statement**

The current health infrastructure and service delivery capacity of Busia County Referral Hospital (BCRH) is insufficient to meet the county's complex and evolving healthcare demands. The hospital lacks specialized units such as a Burns Unit, Orthopedic Theatre, fully functional ICU, HDU, emergency surgery unit, obstetric care unit, trauma management center, and cancer screening unit; necessitating referrals to other counties that have this infrastructure. These secondary referrals introduce 3–6-hour delays, significantly increasing the risk of preventable deaths (KHIS data) and loss in revenue.

The Primary Care Networks (PCN) and the referral systems depend on the BCRH that is inadequately prepared to hand specialized services expected of a level 5 facility. The breakdown of this referral system leads to costly and delayed secondary referrals, undermining public confidence and increasing mortality from otherwise treatable conditions. This therefore necessitates the hospital's upgrade to level 5 through the proposed infrastructural development.

## **2.3 Relevance of the Project Idea**

Development of BCRH annex specialized hospital that will improve the hospital's ranking is strategically aligned with both national and county health priorities. The project directly supports the objectives of the Kenya National Health Policy (2014–2030) and the Universal Health Coverage (UHC) Agenda, which emphasize equitable access to specialized healthcare and the strengthening of referral systems. According to the Ministry of Health's Service Delivery Framework, Level 5 hospitals are the apex of county referral networks and serve as centers for specialized care, training, and research.

At the county level, the project is consistent with the Busia County Integrated Development Plan (CIDP 2023–2027) and the County Health Sector Strategic and Investment Plan (CHSSIP), both of which prioritize improvement of the current referral health facility( BCRH) status to enhance quality, accessibility, and efficiency of health service delivery. Currently Busia faces annual mortality of 12.6/1000 persons, Neonatal Mortality at 8.2/1000 live births, Maternal Mortality rate at 96/100,000 live births, and Infant Mortality Rate at 84/1000 live births.

The proposed infrastructure will expand the hospital’s capacity to handle trauma, maternal emergencies, and specialized care, reducing referrals and improving these health outcomes.

Beyond health outcomes, the project has strong economic and social justification. Improved specialized health infrastructures will ensure retained within-county expenditure on specialized healthcare, generate new revenue streams through insurance reimbursements and service fees, and attract medical tourism from neighboring regions, including Uganda. Moreover, the hospital complex will serve as a training hub for medical professionals, fostering local capacity building and reducing dependence on external expertise.

Ultimately, the transformation of BCRH represents not merely an infrastructure upgrade, but a strategic investment in regional resilience, health equity, and economic sustainability.

## **SECTION 3: STRATEGIC OPTION ANALYSIS**

### **3.1 Introduction**

This section presents a comprehensive analysis of strategic options to address the inadequate capacity and infrastructure at Busia County Referral Hospital (BCRH). The analysis covers alternative options, assessment methods, scoring, risks, issues, assumptions and a multi-criteria evaluation leading to a recommended option for a full feasibility study. The available options include:

1. Do nothing (status quo)
2. Construction of a New Level 5 Hospital in Matayos
3. Public–Private Partnership (PPP) for Specialized Units
4. Construction of BCRH annex specialized hospital

## 3.2 Analysis of Options

### 3.2.1 Alternative Option 1: Do Nothing (Status Quo)

#### (i) Description

Under this option, no major capital investments are made and current incremental upgrades and routine maintenance continue. Services remain delivered within existing Level 4 capacity, with continued referrals outside the county for specialized care.

#### (ii) Assessment

Assessment methods included review of current service statistics, projected demand growth, and gap analysis and focused on costs of continuing referrals, impact on health outcomes and reputational risk. The following scores were applied;

#### (iii) Results -

<b>Requirement</b>	<b>Prefeasibility Score (out of 10)</b>	<b>Assessment Method</b>
Technical Feasibility	10	No new works required
Financial Feasibility	10	No capital outlay
Social Acceptability	2	Public demand unmet
Environmental Compliance	10	No new impacts
Institutional Capacity	6	Status quo operations

#### (iv) Risks

<b>Risk Description</b>	<b>Likelihood</b>	<b>Impact</b>	<b>Mitigation</b>
Continued high referrals and preventable mortality	High	High	Invest in referral coordination and limited training
Loss of public confidence	High	Medium	Public engagement and service optimization

#### (v) Issues and Assumptions

Issues under this option include continued service gaps, increased out-of-county expenditure, staff demotivation. The option also assumes that no external funding will be expected outside current financial resources available to the facility.

### 3.2.2 Alternative Option 2: Construction of a New Level 5 Hospital (Matayos)

#### (i) Description

Construction of a new, purpose-built Level 5 hospital at Matayos. Includes full infrastructure, staff housing and long-term institutional planning.

#### (ii) Assessment Methods

Land feasibility studies, full ESIA, procurement, and financial modelling for large capital project.

#### (iii) Results - Scoring Table

Requirement	Score (out of 10)	Assessment Method
Technical Feasibility	8	Design and land availability analysis
Financial Feasibility	6	High capital requirement analysis
Social Acceptability	7	Community consultation and resettlement risk
Environmental Compliance	7	Full ESIA required
Institutional Capacity	8	Need for new governance arrangements

#### (iv) Risks

Risk Description	Likelihood	Impact	Mitigation Measures
Land acquisition	High	High	Seek NLC clearance
high capital requirements	High	High	External funding, county funding
long lead time (2–4 year)	High	High	Phased construction and temporary service relocation
Shortage of specialist staff	High	High	Bonded training, incentives, secondment arrangements with MoH
Waste management challenges (medical waste)	HIGH	High	-establishment of a waste management facility -Use of licensed waste handlers -training on waste handling and PPEs contractor specific ESMP

(v) Assumptions

This option assumes that county identifies suitable land and secures larger financing for the project and that an elaborates operational plan is developed in advance.

### 3.2.3 Alternative Option 3: Public–Private Partnership (PPP) for Specialized Units

(i) Description

The County partners with a private entity to finance, build and/or operate selected specialized units (e.g., diagnostics, oncology, dialysis) under a long-term concession or management contract. County retains core clinical services and governance.

(ii) Assessment Methods

Assessment included Market sounding for investor interest, PPP financial modelling, legal review of concession frameworks, and social affordability analysis.

(iii) Results - Scoring Table

<b>Requirement</b>	<b>Score (out of 10)</b>	<b>Assessment Method</b>
Technical Feasibility	7	PPP case studies and technical specifications
Financial Feasibility	8	Leverage private finance reduces public burden
Social Acceptability	2	Concerns over tariffs and access
Environmental Compliance	6	Private ESIA obligations
Institutional Capacity	6	Requires PPP unit and legal frameworks

(iv) Risks

<b>Risk Description</b>	<b>Likelihood</b>	<b>Impact</b>	<b>Mitigation Measures</b>
Complexity of negotiations	High	High	Clear service level agreements
Unaffordability of services for low-income patients	High	High	Cap on tariffs for vulnerable groups
Long-term fiscal commitments	High	High	Clear service level agreements

(v) Assumptions

This option assumes that support will be obtained from National Treasury/PPP Unit and that there will be investor interest as well as a robust regulatory framework for the PPP implementation.

### 3.2.4 Alternative Option 4: Construction of BCRH annex specialized hospital

(i) Description

Construction of BCRH annex specialized hospital to meet Level 5 standards. Key components include: i) Specialized Clinics, ii) Casualty iii) Pharmacy, iv) Laboratory unit, v) Theatres, vi) In-patient Wards, vii) Administrative Offices, viii), ix) Resource Center x) x-ray unit and ultrasound rooms, xi) cardiac unit, xii) chemotherapy unit xiii) burns unit xiv) kitchenette xv) sluice room. The approach proposes a phased construction of the facility to maintain service continuity during construction.

(ii) Assessment Methods

1. Technical review against MoH Level 5 requirements and KDSP II guidelines
2. Financial costing using BOQs and local market rates.
3. Social impact via stakeholder meetings and beneficiary analysis.
4. Environmental screening in line with NEMA guidelines.
5. Institutional capacity assessment (HR, governance, procurement).

(iii) Results - Scoring Table

Requirement	Score (out of 10)	Assessment Method
Technical Feasibility	9	Design/structural assessment and existing works
Financial Feasibility	8	Cost estimates and funding scenario analysis
Social Acceptability	9	Community and stakeholder consultations
Environmental Compliance	9	ESIA and mitigation planning
Institutional Capacity	9	HR plans and training pipeline

(iv) Risks

<b>Risk Description</b>	<b>Likelihood</b>	<b>Impact</b>	<b>Mitigation Measures</b>
Procurement and approval delays	Medium	High	Early procurement planning, clear TORs, stakeholder buy-in
Cost escalation due to inflation and exchange rates	High	High	Contingency allowance, fixed-price contracts where possible
Disruption of services during works	Medium	Medium	Phased construction and temporary service relocation plans
Shortage of specialist staff post-upgrade	Medium	High	Bonded training, incentives, secondment arrangements with MoH
Waste management challenges (medical waste)	HIGH	High	-Use of existing waste management facility(incinerator) -Use of licensed waste handlers -training on waste handling and PPEs contractor specific ESMP

(v) Issues

<b>Issue Description</b>	<b>Impact</b>	<b>Action Required</b>
Need for recurrent budget to sustain specialized services	Operational sustainability risk	Budget planning
Supply chain for specialized equipment	Procurement delays	Framework contracts and local supplier engagement

(vi) Assumptions

This option assumes County Government’s commitment to provide counterpart funding with partners providing partial financing. It also assumes that approvals are received on time and that utilities (grid power, water) can be upgraded within project timeline.

## SECTION 4: PRE-FEASIBILITY RANKING

### 3.1 Ranking Criteria and Weights

The Criteria were weighted as follows:

Criteria	Weight (%)
Technical Feasibility	25
Financial Feasibility	20
Social Acceptability	20
Environmental Compliance	15
Institutional Capacity	20

Scores for each option (out of 10) were derived from the assessment tables above. The weighted totals are computed as  $\text{Score} \times \text{Weight}$  with totals rounded to two decimals.

### 3.2 Ranking Scores

Options	Technical	Financial	Social	Environmental	Institutional	Weighted Total
Option 1: Do Nothing	10	10	2	10	6	7.6
Option 2: New Hospital	8	6	7	7	8	7.25
Option 3: PPP Model	7	9	6	8	6	7.15
Option 4: BCRH annex spec. hospit	9	8	9	8	9	8.65

### 3.3 Evaluation of best alternative option

#### Comparative Evaluation of Top Alternatives

Top three alternatives (excluding 'Do Nothing') are compared below using qualitative analysis across technical, economic, social, environmental and institutional dimensions.

a) Option 2 - New Hospital

Building a new Hospital provides opportunity for Purpose-built facilities and modern layouts, and has potential for campus planning relevant for a modern referral and teaching hospital. However,

the implementation of a new Hospital projects will have very high capital cost, long lead time and may attract land acquisition risks.

b) Option 3 - PPP Model

The adoption of a public-private partnership for the development of medical infrastructure and delivery of services provides private capital and efficiency and reduced public upfront costs. However, complexity of PPPs, affordability concerns for less financially endowed patients, need for strong contract management may keep the specialized services still inaccessible.

c) Option 4- Construction of BCRH annex specialized hospital:

This option has the advantage of shorter timeline of implementation as it leverages existing investments already at the BCRH. It also has lower land acquisition risks and high public acceptability. The disadvantages under this option include services disruption during construction at the current facility and requirements for recurrent budget increases.

**Conclusion: Option 4**, Construction of BCRH annex specialized hospital, scores the highest on balance of technical, social and institutional criteria and is recommended for the full feasibility study.

### 3.4 Cost-Benefit Considerations (Qualitative and Quantitative)

In accordance with standard pre-feasibility practice, all strategic options were assessed qualitatively and comparatively across technical, financial, social, environmental, and institutional criteria to identify the most viable option.

A quantitative cost–benefit estimation was conducted for the preferred option—the *Construction of BCRH annex specialized hospital*—to provide an indicative measure of economic viability. The detailed and fully monetized Cost–Benefit Analysis (CBA), including sensitivity and risk adjustments, will be undertaken at the full feasibility study stage once detailed design and operational data are available.

For the pre-feasibility, conservative annual benefits were estimated for Option 4 to provide an indicative Net Present Value (NPV) using a discount rate of 10% and a 10-year horizon. These figures are indicative and will be refined in the feasibility study.

### 3.4.1 Indicative Cost-Benefit Calculation for Option 4 (Construction of BCRH annex specialized hospital)

Assumptions used for the indicative calculation:

- 1) Initial capital cost: KSh 1,352,122,276 (as estimated in Section 4)
- 2) Annual net benefits (year 1 starting in operation year): KSh 230,127,000 (savings from avoided referrals, increased revenue, and efficiency gains)
- 3) Operational costs increase covered by county budget; net benefit assumes costs already netted
- 4) Discount rate: 10%
- 5) Analysis period: 10 years

Benefit Component	Estimated Annual Value (KSh)	Description / Basis
Avoided Referral Costs	100,000,000	Savings from approx. 4,000 referrals avoided per year (avg. KSh 25,000 per case)
Increased In-County Revenue	120,000,000	Insurance reimbursements earned from enhanced diagnostic, surgical, and specialized services
Improved Productivity / Reduced Morbidity	5,127,000	Economic value of reduced disease burden and mortality
Local Capacity & Training Benefits	5,000,000	Savings from local training and retention of specialists
Total Indicative Annual Benefit	230,127,000	Net of recurrent costs

Indicator	Calculation Basis	Result (KSh)
Net Present Value (NPV)	Present Value (10 years of 230M at 10%) – 1,352m	+61,250,000
Benefit–Cost Ratio (BCR)	Present Value (benefits) ÷ PV (costs)	0.1361
Internal Rate of Return (IRR)**	Discount rate where NPV = 0	≈ 10% (indicative)

The project yields a positive NPV and  $BCR > 1$ , indicating that benefits marginally outweigh costs under conservative assumptions. The investment is therefore economically viable, warranting further detailed analysis at feasibility stage.

## SECTION 5: FEASIBILITY OPTION

Based on the pre-feasibility multi-criteria analysis, the recommended option for full feasibility study is the Construction of BCRH annex specialized hospital. The following subsections sets out the updated costs, TOR, implementation plan and key considerations for the feasibility study.

### 4.1. Estimate Project Cost

S/NO	ITEM	ESTIMATED COST (KSH)	SOURCE
1	Construction	450,000,000	Departments of public works and health
2	Plant & equipment	692,681,020	
3	Human resource	209,441,256	
	Total	<b>1,352,122,276</b>	

### 4. 2. Terms of Reference (TOR) on Feasibility Study

#### 4.2.1 Purpose

To prepare a comprehensive feasibility study and design package for the Construction of BCRH annex specialized hospital, providing the technical, financial, economic, environmental, and social basis for investment decision-making.

#### 4.2.2 Specific Tasks

- a. Detailed site assessment and topographic survey; structural assessment of existing buildings.
- b. Architectural and engineering designs (concept, preliminary and detailed designs) including services design (water, power, HVAC, medical gas).
- c. Detailed BOQ, procurement strategy and cost estimates.
- d. Comprehensive ESIA and Occupational Health & Safety Plan.
- e. Detailed economic and financial analysis (CBA, affordability, funding options and cash flow projections).
- f. Institutional assessment and HR plan, including staffing needs and training plan.

- g. Implementation schedule with phasing to maintain service continuity.
- h. Risk analysis and mitigation plan covering construction and operational phases.
- i. Stakeholder engagement plan and social inclusion measures.
- j. Preparation of tender documents and procurement framework.
- k. Preparation of monitoring & evaluation framework and sustainability plan.
- l. Preparation of final feasibility report, drawings, and all deliverables in editable and PDF formats.

#### **4.2.3 Deliverables**

- i. Inception Report within 2 weeks.
- ii. Interim Design and Costing Report at month 1.
- iii. Draft Feasibility Report and ESIA by month 2.
- iv. Final Feasibility Report including designs, BOQs, ESIA, financial model, procurement plan and implementation schedule by month 3.
- v. Presentation of findings to County Executive and KDSP II approval system.

#### **4.2.4 Study Duration and Team Composition**

Study Duration: 3 months (recommended).

Study Team Composition (suggested):

- i. Team Leader / Health Infrastructure Specialist (Lead Consultant)
- ii. Hospital Architect and Civil Engineer
- iii. Electrical / Mechanical Engineer (medical gas, HVAC, power)
- iv. Medical Equipment Planner (biomedical engineer)
- v. Health Economist / Financial Analyst
- vi. Environmental and Social Safeguards Expert (ESIA)
- vii. Public Health Specialist / Clinical Lead
- viii. Procurement Specialist
- ix. M&E Specialist
- x. Stakeholder Engagement / Social Safeguards Officer

#### **4.2.5 Implementation Plan Considerations**

Phasing is essential to maintain service continuity. Proposed phasing to be considered in the feasibility include:

- 1) Phase 0 – Preparatory (Month 0–2): Final designs, procurement packaging, ESIA clearance, site mobilization.
- 2) Phase 1 – Critical Services (Month 3–9): Construct/upgrade ICU, emergency theatre and diagnostics to quickly reduce referrals.
- 3) Phase 2 – Secondary Wards & Support Services (Month 10–18): Maternity, neonatal ICU, surgical wards, renal unit.
- 4) Phase 3 – Finishing Works & Commissioning (Month 19–24): Final finishes, equipment commissioning, staff recruitment and training.

#### **4.2.6 Monitoring, Evaluation and Sustainability**

The feasibility study will establish a Monitoring & Evaluation framework: Establish KPIs, including reduction in out-of-county referrals, bed occupancy rates, mortality rates for selected interventions, average referral time, staff recruitment targets, and financial performance. Quarterly progress reports and annual evaluations recommended.

Sustainability Measures:

- i. Agreed recurrent budget lines for specialized services and equipment maintenance.
- ii. Engagement with SHA/SHIF to ensure accreditation and adequate reimbursement rates.
- iii. Public-private partnerships for non-core services (laundry, catering, diagnostics) under performance contracts.
- iv. Revenue retention framework for fees while protecting vulnerable patients through exemptions/subsidies.
- v. Capacity building and staff retention strategies (training bonds, career progression).

#### **4.2.7 Risk Management and Contingency Planning**

The feasibility will consider the following and provide for contingency planning:

- i. Financial shortfall

- Phased implementation, donor engagement, contingency reserve
- ii. Procurement delays
  - Robust procurement planning, framework contracts
- iii. Operational sustainability
  - Link with SHA/SHIF, realistic recurrent cost estimates
- iv. Community opposition
  - Continuous stakeholder engagement and grievance redress mechanism

#### **4.2.8 Environmental and Social Considerations**

Key considerations for the feasibility include; proper medical waste management, effluent treatment, air quality during construction, noise control, protection of water sources, occupational health and safety for staff and construction workers, and inclusive access for people with disabilities. An ESIA and EMP will document required measures and monitoring indicators.

#### **4.2.9 Institutional Arrangements and Governance**

The feasibility will examine the existence and readiness of a governance structure for project implementation. Should include a Project Steering Committee (PSC) chaired by the Chief Officer – Health, with representation from County Treasury, Public Works, KDSP II, and community stakeholders. A Project Management Unit (PMU) hosted within the County Department of Health should manage day-to-day implementation, procurement and supervise consultants and contractors.

#### **4.3.10. Financial Plan and Funding Options**

The feasibility will examine potential funding sources including County development budget allocations, KDSP II grants/loans, bilateral donor financing, concessional loans, and PPP arrangements for selected services. The feasibility study will prepare detailed cash flow projections and financing scenarios.

#### **4.3.11 Annexes and Supporting Documents (for Feasibility Stage)**

The feasibility study should include the following annexes:

- i. Detailed BOQs and cost schedules
- ii. Architectural and engineering drawings
- iii. ESIA and stakeholder engagement documentation
- iv. Staffing norms and HR requirement tables
- v. Financial model and sensitivity analysis
- vi. Project implementation schedule and procurement plan
- vii. Minutes of stakeholder consultations and approvals
- viii. Procurement documentation templates

## **CONCLUSION**

The pre-feasibility analysis finds that Construction of BCRH annex specialized hospital is the most balanced and feasible option given technical, social and institutional considerations. A comprehensive feasibility study as outlined above is recommended to refine costs, conduct detailed CBA and prepare procurement-ready designs.

## SECTION 6 APPENDIX

### Appendix 1: Market research document and statistics

AREA	STATISTICS	SOURCES
Poor Maternal and Child Health	Maternal mortality stands at 495 per 100,000 live births, above the national average of 342 per 100,000 live births	KDHS (2022)
Limited Specialized Care: No Level V facility exists in the County	40% of critical cases are being referred outside	County Health Department (2023).
No of obstetric complications	2.68% of pregnant mothers	County Health Department (2023).
Life expectancy	52.5 which is below the national; attributed to healthcare gaps	KDHS (2022)

### Appendix 2: Problem analysis and documentation of requirements

Level 5 Mandatory Service/Clinic	BCRH Current Status	Required
Specialized Burn Care Unit	Absent. Severe burn patients are stabilized in A&E and referred out, incurring critical delays of 3-6 hours.	Provide for a burns unit with capacity for 60 (30 male, 30 female)
At least 3 Functional Theatres	Two functional theatres; below 3-theatre minimum.	Theaters – At least 7 (maternity, general, orthopedic, pediatric, ENT, Dental, ophthalmology)
Pathology Services (incl. Histopathology)	Basic laboratory services are available; comprehensive pathology is absent.	Provide for an advanced pathology lab
Chemotherapy and Radiotherapy	Absent; forces all cancer patients requiring chemotherapy to travel to other counties.	Provide for oncology ward with capacity for 60 (30 male, 30 female)

Specialized Clinics (Cardiology, Oncology, etc.)	Core clinics are active but operate in makeshift spaces; significant absence of sub-specialty clinics.	Provide for 10 specialized clinics
Training Centre for Interns & Specialists	Hosts some training but lacks full KMPDC accreditation as a comprehensive internship site.	Provide for conference rooms
Wards	298	Inpatient bed capacity with at least a total of 500 beds [Medical (30 male, 30 female), Surgical (30 male, 30 female), Pediatric (30 under 5 years and 30 above 5-12 years), Orthopedic (30 male, 30 female), Obstetric (30 Antenatal, 30 post-natal), Gynecology(30 beds), New born unit (20 cots), Burns unit ( 30 male, 30 female, 30 pediatric), Isolation ward (30 male, 30 female)
Theatres		Theaters – At least 7 (maternity, general, orthopedic, pediatric, ENT, Dental, ophthalmology)
Equipment need		Oncology department equipment, burns department, operating theater services Medical plants, ophthalmology, wellness equipment, trauma and orthopedic equipment, laundry

**Appendix 3: Risk assessment report**

RISK CATEGORY	SITE A-BCRH	SITE B-MATAYOS SCH	RISK RATING	REMARKS
Land Acquisitions	The land ownership for the BCRH is	Land ownership for	BCRH land has <b>low</b> risk while	RMP For BCRH; undertake

	assured as it is owned by the county government	the Matayos Site is contested with an active court case	Matayos site has <b>high risk</b> on land acquisition	stakeholder consultation on the site. RMP for Matayos; Obtain a title deed, undertake stakeholder engagement
Major Displacements	The identified site at BCRH involves displacement of some functional areas, the staff there in, and the potential clients.	Matayos site has displacement related to a building housing a few staff.	Displacements at BCRH present <b>low risk</b> . They are staff areas. The functions may suffer during the construction phase/some equipment, materials and clients may have to be moved/  Matayos Site present <b>low risk</b> on displacements. Only one household affected/the building is inhabitable	Service reorganization plan needed at BCRH (operational areas affected have to be moved and continue functioning) Matayos; Other staff houses available with space to accommodate the family using the building.
Climate risk	BCRH has no major climate related risks	Matayos site has no climate related risk	Low risks in both	Develop a risk management plan.
Pollution and discharge of waste	BCRH presents risk related to Asbestos, Debris from potential demolitions, residual biological/chemical	Matayos site presents risks related to Asbestos, debris from demolition of	The BCRH risk is <b>moderate</b> while the Matayos risk is <b>Low</b>	Site, involve experts to examine the extent of risk and make recommendation.

	tools due to relocations	the two buildings		Matayos site has no major issues.
Accessibility	BCRH site is more accessible because of its central position	Matayos site is not centrally placed	BCRH has <b>low risk</b> on accessibility while Matayos has <b>moderate risk</b> on accessibility	Stakeholder engagement is key to identify the preferred site
Destruction of cultural sites/natural habitats	There are no cultural/natural habitats associated with the proposed site at BCRH.	There are a few trees to be cut down as part of site clearance at Matayos site	There is <b>low risk</b> to destruction of cultural/ natural sites at BCRH.  There is <b>low risk</b> to destruction of natural/cultural habitat at Matayos Sub-county hospital.	Design an IP for the sites; to guide the responsible use of natural resources at Matayos
Relevant infrastructure	BCRH has much of the required amenities to support the proposed infrastructure including; existing working space, equipment, staff, road network, water,	Matayos site has relative infrastructure to support the proposed project: it is however inadequate for such a major project and would require higher investments in utilities	<b>Moderate risk</b> at Matayos, <b>low risk</b> at BCRH	Develop a list of required infrastructure resources and how they will be provided
Economic loss	The proposed BCRH site predisposes minor economic loss due to the facilities that are to be demolished.	Matayos Site has no economic loss as the only blocks at the site are condemned and	There is a <b>moderate risk</b> in relation to economic risk on the identified BCRH site	Develop appropriate action plans. Do cost-benefit analysis to justify the site selected on the basis of

	Further, the pavement area has an economic loss. Cot benefit analysis however reveals that the buildings targeted are old	required to be brought down.	There is <b>low risk</b> on economic loss associated with the Matayos site.	benefits being higher than costs
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Name Wypson Kojala .....29<sup>th</sup> November.2025

Designation Chief officer .....Department Health & Sanitation -

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