



INFRASTRUCTURE

MINING & METALS

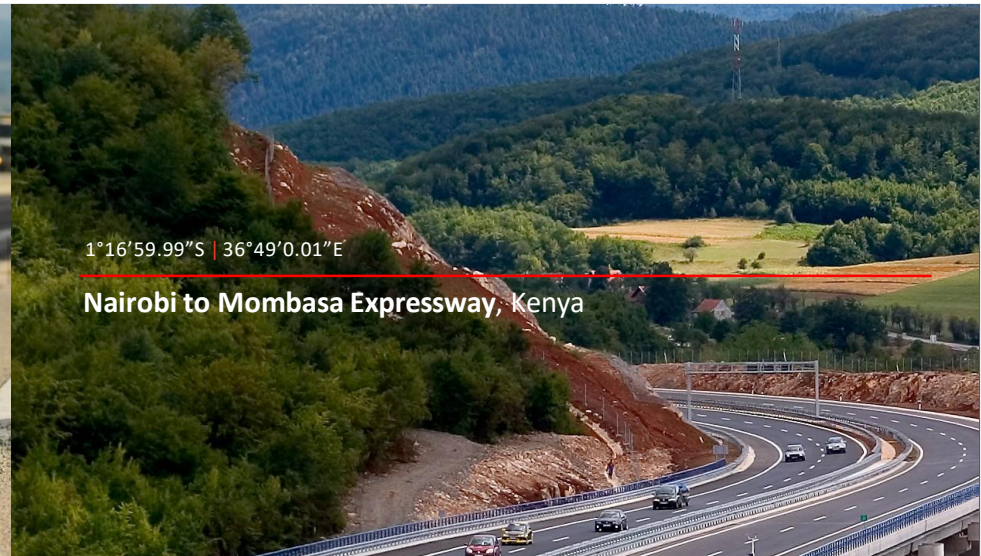
NUCLEAR, SECURITY & ENVIRONMENTAL

OIL, GAS & CHEMICALS



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Nairobi to Mombasa Expressway, Kenya



Introduction to Bechtel

Presentation to KEPSA

19 February 2019





Who We Are

- U.S. privately owned, family-led company with 120 years of experience
- Ranked top U.S. construction contractor by *Engineering News Record* for 20 straight years
- Bechtel has completed over 28,000 kilometers of highways and roads, 100 tunnels totaling 350 km in length, and 25 major bridge projects
- Active on over 400 engineering & construction projects across Africa for over 70 years
- Bechtel has worked on more than 25,000 projects in 160 countries on all seven continents
- 38 major offices worldwide/
40,000 employees



Revenue

in billions of U.S. dollars

2016 | \$32.9

2015 | \$32.3

2014 | \$37.2

2013 | \$39.4

2012 | \$38.0

ENR Global Best Projects Award

Kosovo Motorway project took the top honour in the roads and highways category. The awards recognize projects for their safe and innovative solutions to design and building challenges, international teamwork, contribution to industry and the community, as well as quality of design and construction work.



Bechtel Highlighted Projects

Ivanpah, 2013

California—392 MW solar thermal power plant, one of the largest in the world



Boston Central Artery

Massachusetts—project management on the most complex urban transportation project ever undertaken in the United States



Las Bambas Mine

Chile—Constructing a greenfield copper concentrator project in the Peruvian Andes



High Speed 1, 2007

United Kingdom—Ten-year effort, UK's first high-speed rail and largest infrastructure project



Hamad International Airport

Qatar—2 runways, 592,000m² passenger terminal complex, 64 passenger gates, cargo terminal, aircraft maintenance hangars.



Hong Kong Airport, 1998

Hong Kong—Termed the largest public works upgrade ever undertaken



Khalifa Port and Khalifa Industrial Zone Abu Dhabi

UAE—Managing construction of a new port and industrial development



Gabon National Infrastructure

Executing the build out of national infrastructure to support sustainable economic development



Jubail Industrial City, 2015

Saudi Arabia—30-year contract for world's largest civil project



Queensland LNG Projects

Australia—Designing and building three LNG facilities fed by coal-steam gas on Curtis Island in Queensland





Projects



Albanian Motorway

- 61km of road from Rreshen to Kalimash
- Key Facts:
 - » 29 bridges totalling 4.4km
 - » Maximum bridge length of 520m
 - » Maximum bridge height of 88m
 - » 3 underpasses
 - » 4 overpasses
 - » 4,420 U-beams
 - » 660 pilings



Tacoma Narrows Suspension Bridge

- Services included project management, design and construction management
- Additional scope of 5km of highway with an overpass and three interchanges
- Key Facts:
 - 1.6km deck
 - 850m main span
 - 155m towers
 - Installed caissons, built towers, spun cables, and assembled and installed 46 deck sections (each weighing 408 tonnes)
 - Managed 140-plus subcontracts and lease service contracts



Boston Central Artery

- Largest and most complex urban transport project undertaken in US at the time
- Completed interstate highway system in Boston
- Key Facts:
 - Leonard P. Zakim Bunker Hill Bridge: 440m in length, 82m high towers; the widest cable-stayed bridge in the world at the time
 - Leverett Circle Connector Bridge: 4-lane bridge; 520m long
 - Further additional bridges and interchanges
 - 200 lane-kilometres of interstate highway
 - Deepest underwater connection in North America



Riverside County Transport Commission

- \$1.7bn capital programme working as integrated team
- \$4.6bn of scope added to Bechtel responsibility in 2003
- Bechtel entered into contract in 1988 for project and construction management services and are still present today in same role
- Key Facts:
 - 21 highway and freeway projects including 18 major interchanges
 - Viaducts, bridges
 - HOV lanes, expressways
 - Multimodal transport solutions including commuter rail



Croatian Motorway

- 156km Bregana-Zagreb-Dubrovnik alignment linking Croatia to Pan-European Corridors
- Arranged financing via US EXIM Credit Agency
- Key Facts:
 - 2 large bridges, 45m high and 636m long
 - 40 smaller bridges with concrete piers and precast concrete U-beams
 - Total bridge length of 7.8km
 - 20 overpasses
 - 38 underpasses
 - 1,472 U-beams
 - 3,835 pilings
 - Innovative processes used to stabilise areas prone to caverns and sinkholes



Kosovo Motorway

- 100km Route 7 motorway from Morinë to just north of the capital city Prishtina
- Built in sections via fast-track model, delivered 12 months ahead of plan
- Key Facts:
 - 22 bridges totalling 3.9km
 - Maximum bridge length of 720m
 - Maximum bridge height of 56m
 - 31 underpasses and 33 overpasses totalling 5.6km
 - 571 U-beams
 - 21,500 pilings



Bechtel in Africa

- Bechtel has worked in Africa for more than 70 years, delivering hundreds of transformative and resilient projects, with sustainability at the core
- Our approach includes building the capacity of local workers, businesses, and communities and having a plan to transition local-content programs toward economic development
- Working with Kenyan government for 2.5 years to develop the Expressway project





The Nairobi – Mombasa Expressway

Key Benefits

Expanded Employment: There will be over 5,000 employees that will support the delivery of this project, including non-skilled workers, skilled workers, professional, and management staff.

Safety and Environmental Improvements: This is a new closed system expressway

Accelerated Economic Development: Fast-track and sectional delivery provides early economic generation.

525 km of expressway

48 km of interchanges

189 km of paved local roads

76 Overpasses

21 Underpasses

189 Culverts

85,000,000 cubic meters of Excavation

100,000 Tons of cement

40,000 Tons of steel



4 hours travel time from Nairobi to Mombasa



Direct Benefits

- **Additional Revenue Generation:**
 - Service Areas: There will be dedicated service areas along the alignment that can be concessioned.
 - Utility Ducts: There will be 6x100mm PVC ducts running along the length of the expressway that can be leased.
 - Special Economic Zones: The Bechtel contract includes development of 3 additional Special Economic Zones (SEZ) along the alignment next to strategic interchanges. These SEZ can bring additional revenue to the national and county governments.
- ***Accelerated Economic Development***
- ***Safety along the corridor***
- ***Environmental Improvement***
- ***Improved Trade***





Timeline

Significant milestone	Time
U.S. – Kenya G2G signed	July 2015
Bechtel Meeting with CoS, MoT, and NT to discuss fast-track approach	August 2015
Bechtel provided fast-track model for Nairobi to Mombasa Expressway	October 2015
MoT and KeNHA engagement on financial and technical solutions	December 2015
U.S. financing letters signed with Deputy President at the U.S. Africa Business Forum	Sept 2016
Technical and Commercial Proposal submitted	October 2016
Financing letter of G2G and PPP model	December 2016
Technical comparison of alignment options	February 2017
GoK decision to proceed with negotiations on Bechtel G2G model	March 2017
Negotiation process begins	March 2017
Negotiations of technical and commercial	April-July 2017
Commercial contract signed	August 2017
Start Full ESIA	October 2017
Government of Kenya (National Treasury) agree to a structure	November 2018
Ground Breaking Ceremony and Financing Secured	TBD (3Q/4Q 2019)



Kenya Big Four – Infrastructure the Foundation

Manufacturing

ICT / SEZ

Market Access

Roads, Energy, and Water

Food / Nutrition Security

Enhance Large scale production

Drive small holder productivity

Reduce cost of food

Health

Low Cost Delivery Models

ICT & Access

Energy & Infrastructure

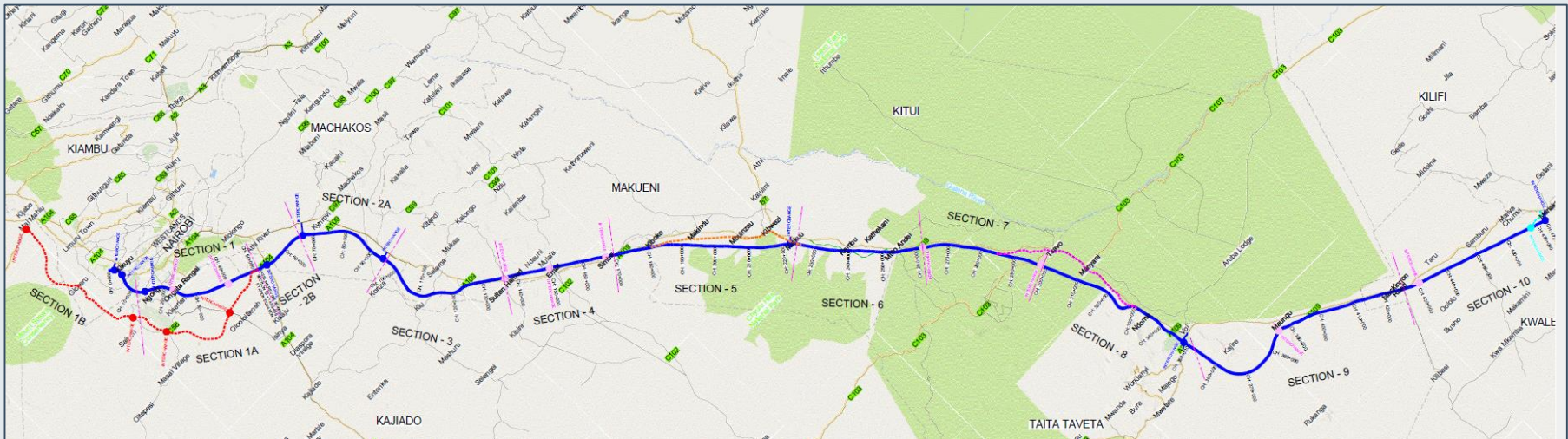
Housing

Land and Right Location

Allocate funds for Infrastructure and energy

Multiple locations with access

Infrastructure





Leaving a Legacy | Our Training Programme

- World-class performance-management tools that are transferable to the local supply chain
- Recognized leadership in sustainable design that will protect both the people and the environment
- Opportunities for partnering with local universities to hire graduates and create internships. Development programs that can include graduate recruitment and mentoring by experienced professionals
- Active engagement with the community to help address issues, such as local youth unemployment and health
- Commitment to local supply chain development
- Bespoke training plans and facilities
- Craft certifications and real-world experience for career development
- Industry-leading standards for quality and safety on construction sites.





Local Businesses and Supplier Engagement

Local content – an enabler for growth:

- Supplier forum events for sourcing of goods and services
- Targeting local available products
- Supporting supplier involvement through training, capacity enhancement and knowledge transfer
- This approach brings benefits to a project beyond the immediate financial:
 - Local knowledge and know-how
 - Supportive social interactions with communities
 - Local workforce/suppliers becoming anchors for future business growth in the region, and
- Email for expressions of interest & contact via **ksupplie@bechtel.com**



Bechtel works with the local community and the local supply chain to develop a capacity building program for long-lasting impact on the industry beyond the project.



ESIA Development

ESIA works commenced in November 2017 and are approaching conclusion. Over 50 professionals involved including those from KenHA, Bechtel, ERM and KWS

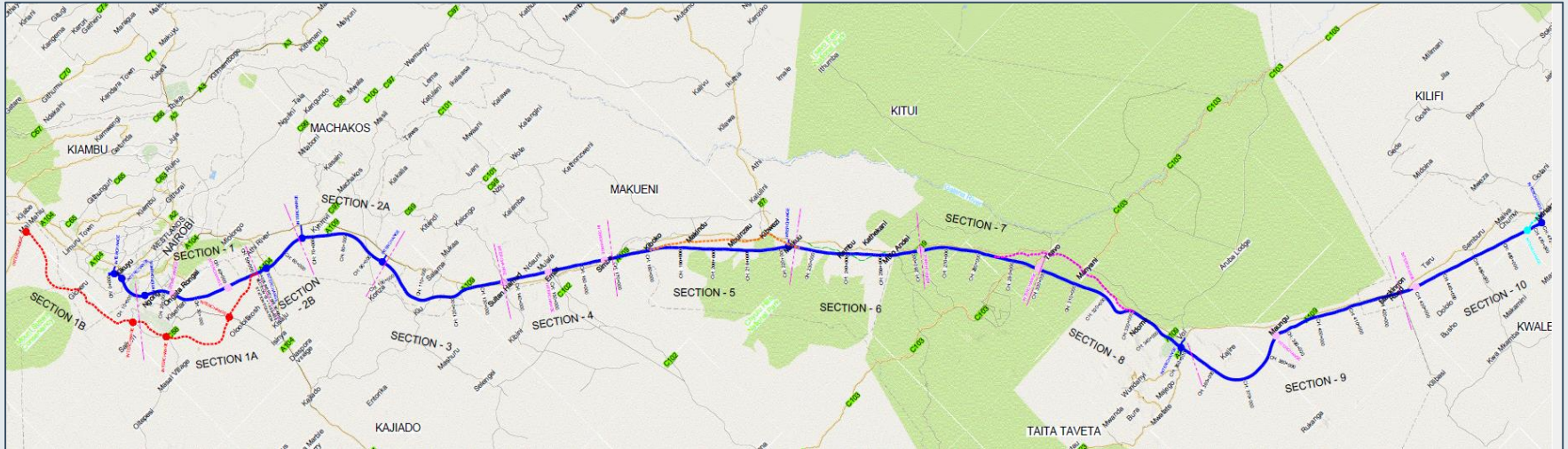
- Stakeholder Engagement – Over 70 meetings including barazas, Governors and Deputies, County Commissioners, Chiefs, Government Agencies, Ranchers and NGOs. Over 2600 people consulted. Largest event included 56 NGO and Rancher groups
- Community Severance – Project includes over 180Km of local and feeder road access. Crossings will be built off-line to minimise impacts during construction.
- Land Acquisition and Resettlement – Resettlement Framework Policy drafted, compliant with Kenyan law and IFC Performance Standard 5. Address physical and economic dislocation.
- Physical Environment – Noise and air sampling and modelling undertaken and used to minimise impacts. Groundwater extraction requirements modelled and mitigations in place. Crushing equipment identified to ensure no dredged sand to be used
- Impacts on terrestrial and aquatic wildlife assessed – Extensive engagement with KWS and NGO's. Field monitoring undertaken for land and aquatic species. KWS believed that this included the first ever aquatic species investigation in the Tsavo river.
- Migratory Modelling – Commenced by world recognised experts at University of Queensland and will complete with KWS data release.





Technical Studies & Design

15+ variants of alignments were developed



- 2015 - initial alignment options were evaluated
- June 2016 – initial concept completed.
- July 2016 – realignment to the north of Nairobi and connection to Kyumvi.
- August 2016 –connection to Machakos and optimization of vertical alignment.
- September 2016 – realignments to eliminate gradients greater than 4%. in Section 3 and 8.
- March 2017 – realignment to the south of the outcrop in Sections 8 & 9 at Voi.
- October 2018 – Agreement on the Nairobi by-pass alignment (red line)



Hybrid PPP under a Phase approach

