

**CAPACITY CONSTRAINTS,
PROJECT PREPARATION &
SERVICE DELIVERY**

SA institute of Civil Engineers 2009

- Water and Environmental Affairs Dept
2008/9 year 250 engineering vacancies
only 39 % filled
- 47% of the current engineers will retire in
next 10 years

Municipal capacity constraints (ISLGS)

- Municipal capacity must be increased
(developmental local government principal)
- Hands on, and not just advice
- Too many simultaneous projects being implemented
- Slow application and approval processes
- Communication must be improved
 - National targets
 - Between stakeholders
 - Community
 - Greater cooperation needed

What is Project Preparation?

- All the technical, social and financial investigations required to ensure that a project can be effectively and appropriately implemented.
- It is a consultative and managed process which controls risk, obtains stakeholder buy-in and maximises development outcomes
- Results in decisions on the allocation of implementation funds and other resources, *if the project is shown to be viable.*

1. Project Preparation

Project selection & initial screening

By means of desktop assessments and site visits, this ensures the wise selection of projects based on specific criteria and includes early identification of key risks which require mitigation.

Pre-feasibility

By means of dedicated professional work packages, this addresses the main project risks and develops a realistic project concept – in some projects, this may be combined with the feasibility phase.

Feasibility

By means of dedicated professional work packages, this resolves any outstanding project risks and undertakes sufficient preliminary design in order to develop a cost estimate and cash flow for project implementation, as well as a preliminary implementation timetable.

Business planning & funding applications

Based on the preparation work completed, this provides potential funders with the necessary information to make an informed decision on the allocation of capital funding.

4. Operation and Maintenance

3. Construction

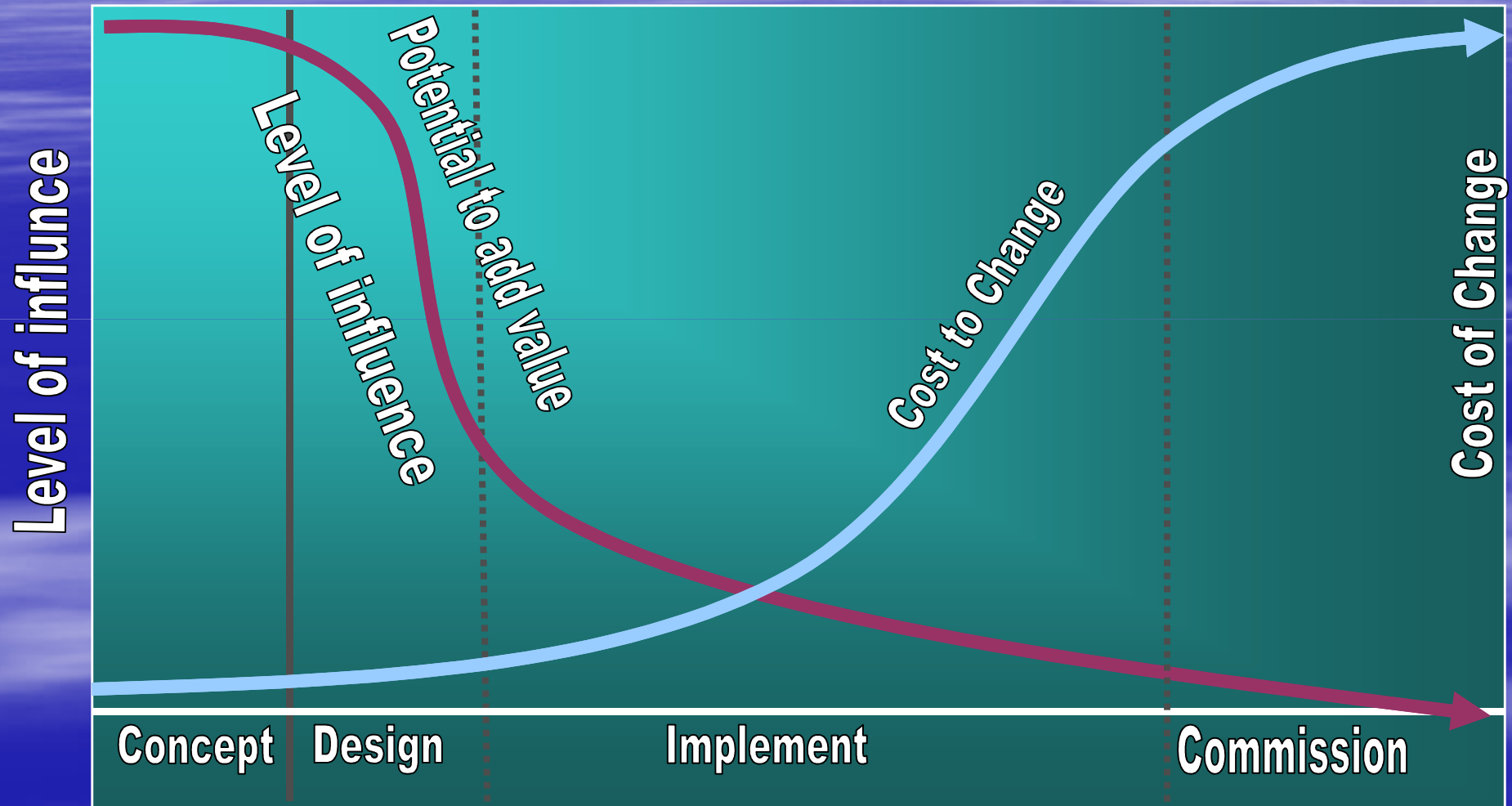
2. Detailed design

Why is effective Project Preparation critical?

- Effective preparation identifies project risks early
- This enables the effective planning and allocation of resources to remove these risks.
- Ineffective preparation means that you are not aware of risks and cannot plan or budget for their removal.
- These risks will then surface once the project is under implementation when significant budget has already been spent.
- The cost to resolve these risks during implementation is very high (see graph below).
- Additional budget must now be secured often with debilitating effects on the projects, many of which now become blocked.

Graph: declining influence and increasing cost of change over time

("Project Management & Control Techniques" : Rory Burke.1999)



ID	Task Name	Year 1 '07	Year 2 '08	Year 3 '09	Year 4 '10	Year 5 '11	Year 6 '12	Year 7 '13	Year 8 '14	Year 9 '15
1	INFORMAL SETTLEMENT UPGRADE	[Solid black bar spanning all years]								
2	PHASE 0 - APPLICATION - PROJECT IDENTIFICATION AND PRIORITISATION	[Thick black arrow spanning from Year 1 to Year 2]								
3	Determine need and demand		□ Municipality Province Private sector							
4	IDP process including reviews		□ Community Municipality and province							
5	Broad identification of projects in IDP		□ Community Municipality and province							
6	Detailed housing sector plans		□ Community municipality province and consultants							
7	Spatial mapping of defined project areas		□ Consultants Province							
8	Initial business plan to DOH for MEC approval									
9	MEC approval of business plan									
10	PHASE 1 - PROJECT INITIATION - FEASIBILITY STUDIES	[Thick black arrow spanning from Year 2 to Year 5]								
11	Receipt of advance payment for phase 2									
12	Conduct detailed land audits									
13	Call for land availability proposals if privately owned									
14	Negotiate Land Availability if state owned									
15	Confirm in principle support from land owners									
16	Appoint consultants for pre feasibility studies									
17	Conclude prelim geotech									
18	Conclude prelim environmental assessment									
19	Conclude Bulk services investigation									
20	Conclude social consultation including relocation assessment									
21	Conclude prelim planning layout to determine potential									
22	Conclude prelim engineering report									
23	Design interim services									
24	Approval of interim services design									
25	Obtain Environmental approval									
26	Obtain Municipal approval									
27	Tender documentation, tender process for interim services									
28	Construct interim services									
29	Conclude preliminary sector alignment									

□ Public private sector

ID	Task Name	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
		'07	'08	'09	'10	'11	'12	'13	'14	'15
30	Prepare project descriptions and submit to DOH				Project Manager Municipality					
31	Decide on contracting strategy (Turnkey, pre planned or development)				Municipality Province					
32	Turnkey tender if necessary				Municipality Province					
33	Appoint agents if necessary				Municipality Province					
34	Apply for conditional approval if necessary				Municipality Agent					
35	Evaluation and conditional approval				DOH					
36	Obtain NHBRC first stage evaluation and enrolment of project				IHBRC					
37	Apply for tranche 2 funding				Municipality Agent					
38	Evaluation, MEC approval and contractual tranche 2				DOH MEC					
39	PHASE 2 - IMPLEMENTATION PLANNING - DETAILED DESIGN									
40	Conclude detailed geotech					Geotech engineer				
41	Conclude detailed topo survey including structure survey					SURVEYOR				
42	Floodline determination					Engineer				
43	Detailed design					Engineer				
44	Services agreements					Implementing Agent / Municipality				
45	Conclude EIA process and obtain ROD					Environmental consultant DAEA				
46	Finalise layout plan and obtain municipal and community approval					Planner				
47	Apply for relocation assistance									
48	Resolve disputes and finalise allocation policy									
49	Prepare DFA application or other establishment route					Planner				
50	Lodge DFA or other establishment application					Planner				
51	DFA pre hearing or other					DTLGA / TRIBUNAL				
52	DFA Judgement or other approval					DTLGA / TRIBUNAL				
53	Cadastral Survey					Land Surveyor				
54	Design approval by authorities					Municipality				
55	Prepare civil engineering tender documents					Engineer				
56	Finalise financial modelling					Implementing Agent / Municipality				
57	Package application for infrastructure funding to DOH					Implementing Agent				
58	Evaluation, approval and contractual by DOH					DOH				

ID	Task Name	Year 6 '12	Year 7 '13	Year 8 '14	Year 9 '15	Year 10 '16	Year 11 '17	Year 12 '18	Year 13 '19
59	PHASE 3 - INFRASTRUCTURE DELIVERY								
60	Tender process Services		Implementing Agent / Municipality						
61	Award of contract Bulk and Internal services		Implementing Agent / Municipality						
62	Contract period								
63	Hand over of services				Contractor / Municipality				
64	Completion certificates				Engineer / Municipality				
65	Open township register				Conveyancer / Registrar				
66	Agree on final allocation procedure		MUNICIPALITY / COMMUNITY						
67	Set up sales office		Implementing Agent / Municipality						
68	Sign up Beneficiaries (usually done at Phase 3)		Implementing Agent						
69	Lodge Beneficiary applications		Implementing Agent						
70	Beneficiary approval			DOH					
71	Transfer erven to approved beneficiaries					Conveyancer			
72	Package application for Housing funds					Implementing Agent			
73	Evaluation, approval and contractual by DOH					DOH			
74	NHBRC enrolment of Houses						NHBRC		
75	PHASE 4 - HOUSE CONSTRUCTION								
76	Tender process houses					Implementing Agent / Municipality			
77	Award of contract House construction					Implementing Agent / Municipality			
78	Contract period								
79	Hand over of Houses							Beneficiary / Inspectorate	
80	Completion certificates							Engineer	

N2 Gateway Project: A case study of poor project preparation

- Political pressure original program 6 months? to complete 22000 units!
- National, provincial and local government lack of clarity on roles and responsibilities
- No approved business plan in place
- Not sufficient land secured
- Geotechnical surveys not completed
- Beneficiaries not identified and processed
- Initial affordability study incorrect (Rental model R160-R650 actual R500-R1200)

N2 Gateway Project

- Project Management
 - No contract ever signed
 - PM 252% over budget (Housing 3.3% comp)
 - Independent evaluation indicted that they did not have sufficient Project Management capacity
 - No 6 on the bidding list
 - Project management firm (10% management fee on 3rd party appointment)

N2 Gateway Project: Budgeting

- Legal claims (R43 Mill)
- Design changes (R20 Mill)
- Geotech (6Mill in one sub-project)
- As at July 2007 (4.2 bill needed only 2.5 committed)
- MIG funding requirements not met and not budgeted for MTEF 2007-2010
- 75-80% defaulters on rental option
- Additional cost R49 000 per unit (R80,900-129,900) (40% under-costed due to poor feases)

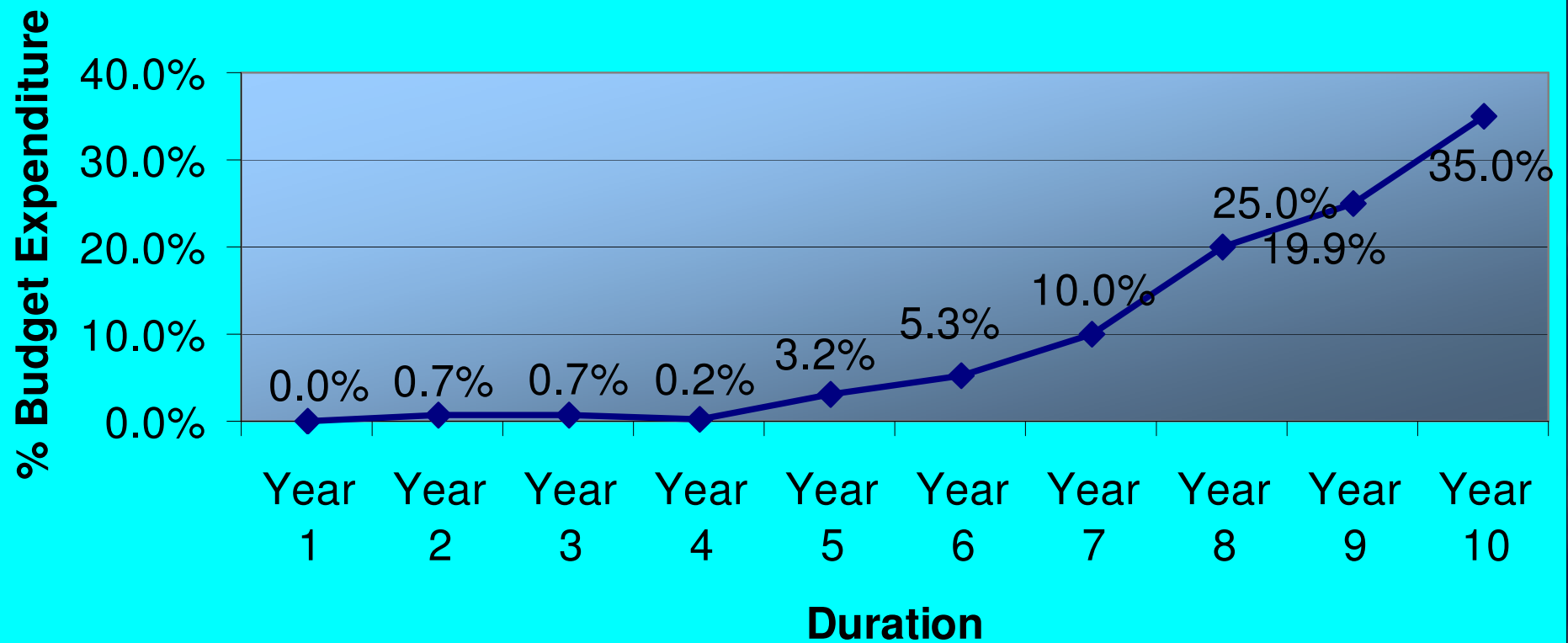


Alexandria Township

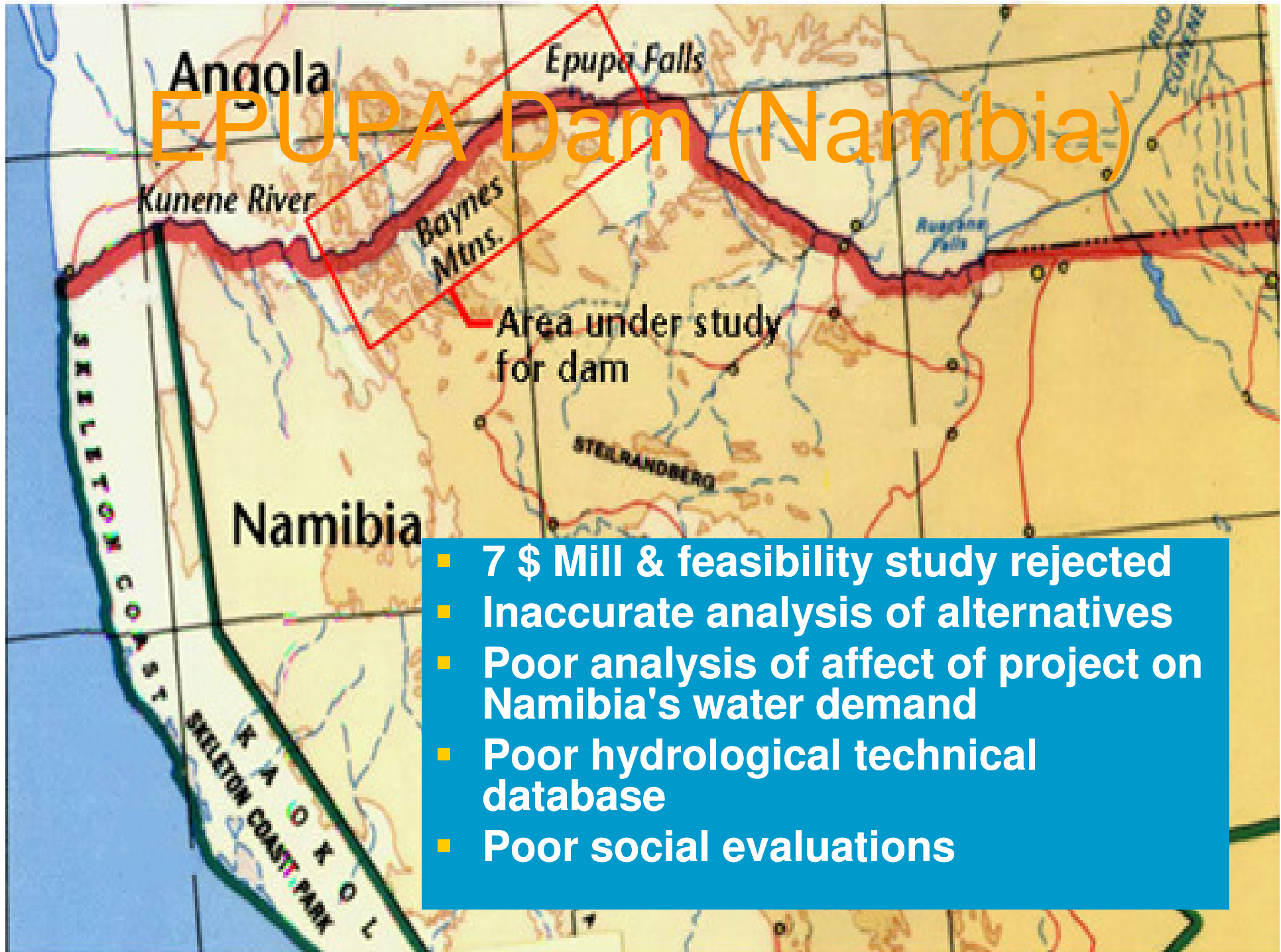
- Poor planning and project management, Project Director 'Julian Baskin'
- 2.8 % of houses completed in 4 years 'a disgrace'? (600 of 21000)
- Huge influx of households, settled on reserves and open areas, relocation became a priority
- Budget is now insufficient
- Not sufficient land available
- Units are now too expensive for residents



Informal Settlement Upgrading: Project Cash Flow Projections



EPUPA Dam (Namibia)



- 7 \$ Mill & feasibility study rejected
- Inaccurate analysis of alternatives
- Poor analysis of affect of project on Namibia's water demand
- Poor hydrological technical database
- Poor social evaluations

NASA: Cheaper, better & faster

- Mars Climate Orbiter failed
- Mars Polar Lander failed
- Estimated \$1 bill in failures



Primary Fund Objective

Provide municipalities with management support and bridge financing for feasibility studies, business plans and applications for funding for infrastructure projects, incl. housing

Key Points cont

- Ukulungisa acts independently, with no vested interest in being appointed for implementation work.
- The fund is a special purpose section 21 company which is not for profit
- All feasibility studies are managed by Project Preparation Trust, a highly respected organisation established in 1993 (*R1.15 Bill in project approvals for 59,500hh & 85 projects,*)

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