

# Jersey Future Hospital Project

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## Outline Business Case

### Appendix 28 – NVP VFM Assessment and Sensitivity report

**Document Control**

<b>Version</b>	<b>Date Issued</b>	<b>Summary of Changes</b>	<b>Author</b>
V1	29.9.17	Document compilation	T Nicholls
V2	11.10.17	Document updated	T Nicholls
V3	24.10.17	Template updated	T Nicholls

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## **Appendix 28 – Cost Benefit Analysis**

### **Methodology**

The outputs below show the NPV's of each option (calculated in the GEM Model) alongside the raw benefits and weighted benefit scores.

These show the ranking of options in terms of:

- NPV
- Raw Benefit Score
- Weighted Benefit Score
- NPV per weighted benefit point

Switching point analysis has then been performed to show the percentage movement which would be required in each option in terms of NPV reduction and weighted benefit score for the ranking to flip.

The NPV per weighted benefit point for each sensitivity test is also shown.

# Cost Benefit Analysis outputs

States of Jersey - Future Hospital  
11/10/2017

	Option 1 Do Nothing	Option 2 Do Minimum	Option 3 Refurb	Option 4 New Build
		<b>6161.12</b>		
<b>Options Results</b>		<b>9.6%</b>	<b>0.5%</b>	<b>12.6%</b>
Option Net Present Value (NPV) £m	6,115	5,955	5,461	5,432
Raw benefits score	39	47	105	117
Weighted benefits score	1.44	1.72	3.88	4.36
<b>Option Ranking</b>				
By NPV	4	3	2	1
By raw benefits score	4	3	2	1
By weighted benefits score	4	3	2	1
<b>Differential findings around 'Do Nothing'</b>				
NPV differential		(2.62)%	(10.69)%	(11.17)%
Raw benefits differential		20.51%	169.23%	200.00%
Weighted benefits differential		19.75%	170.10%	202.85%
<b>Ratios</b>				
NPV per weighted benefit point	4,252	3,458	1,406	1,247
Ranking	4	3	2	1
<b>Sensitivity analysis against best performing option</b>				
<b>NPV change:</b>				
Increase in NPV	(11.30)%			1,247
Revised NPV per weighted benefit point £m	3,772	3,068	1,247	
<b>Weighted benefits change:</b>				
Increase in weighted benefit score	12.73%			1,247
Revised NPV per weighted benefit score £m	3,772	3,068	1,247	
<b>NPV switching point analysis</b>				
NPV £m	6,115	5,955	5,461	5,432
Variance to lowest NPV £m	0	0	0	-
% reduction required	11.2%	8.8%	0.5%	0.0%
Revised NPV £m	5,432	5,432	5,432	5,432
<b>Weighted benefit switch point</b>				
Weighted benefits	1.44	1.72	3.88	4.36
Variance to lowest NPV £m	-	-	-	-
% increase required	202.9%	152.9%	12.1%	0.0%
Revised NPV £m	4.36	4.36	4.36	4.36
<b>NPV per benefit point switch point</b>				
<b>NPV change:</b>				
NPV per weighted benefit score £m	4,252	3,458	1,406	1,247
Variance to lowest NPV £m	0	0	0	-
% reduction in NPV required	-70.7%	-63.9%	-11.3%	0.0%
Revised NPV per weighted benefit score £m	1,247	1,247	1,247	1,247
<b>Weighted benefit score change:</b>				
NPV per weighted benefit score £m	4,252	3,458	1,406	1,247
Variance to lowest NPV £m	0	0	(0)	(0)
% increase in weighted score required	240.9%	177.2%	12.7%	0.0%
Revised NPV per weighted benefit score £m	1,247	1,247	1,247	1,247

## Sensitivity Results

States of Jersey - Future Hospital  
11/10/2017

Option 1	Option 2	Option 3	Option 4
Do Nothing	Do Minimum	Refurb	New Build

### Options Results

Option Net Present Value (NPV) £m	6,115	5,955	5,461	5,432
Raw benefits score	39	47	105	117
Weighted benefits score	1.44	1.72	3.88	4.36

### Ratios

NPV per weighted benefit point	4,252	3,458	1,406	1,247
Ranking	4	3	2	1

### Sensitivity analysis - adjusted NPV

Population Growth +325	5,694	5,570	5,183	5,155
Population Growth +1,000	6,453	6,267	5,713	5,682
Population Growth +1,500	6,977	6,791	6,163	6,129
10% cost increase on new hospital scheme	6,123	5,963	5,491	5,460
10% cost increase on ES schemes	6,116	5,956	5,467	5,439
1 year capex delay - Main scheme (Option 3 & 4)	-	-	5,474	5,444
2 year capex delay - Main scheme (Option 3 & 4)	-	-	5,486	5,455
2 year capex delay - Main scheme and ES Scheme (Option 4)	-	-	-	5,460
Worst Case combo	6,985	6,801	6,222	6,192

### Sensitivity analysis - adjusted NPV per weighted benefit point

Population Growth +325	3,959	3,234	1,334	1,184
Population Growth +1,000	4,488	3,640	1,471	1,305
Population Growth +1,500	4,852	3,944	1,587	1,407
10% cost increase on new hospital scheme	4,258	3,463	1,414	1,254
10% cost increase on ES schemes	4,253	3,459	1,407	1,249
1 year capex delay - Main scheme (Option 3 & 4)	-	-	1,409	1,250
2 year capex delay - Main scheme (Option 3 & 4)	-	-	1,412	1,253
2 year capex delay - Main scheme and ES Scheme (Option 4)	-	-	-	1,254
Worst Case combo	4,857	3,949	1,602	1,422

### Revised ratios - worst case

NPV per weighted benefit point	4,857	3,949	1,602	1,422
Ranking	4	3	2	1