



Appendix Q

Criteria	Metric	Score						
		-3	-1	0	1	2	3	
Economic Merits	<i>Comparison of the economic benefits against the capital and ongoing costs</i>	BC < 0	BC: 0.1- 0.5	BC: 0.5-0.9	BC = 1 (Or NA)	BC: 1.0 - 1.5	BC: 1.5 - 2.0	BC >2.0
Technical Feasibility	<i>Potential design, implementation and operational challenges and constraints.</i>	Major constraints and uncertainties which may render the option unfeasible	Constraints or uncertainties which may significantly increase costs or timeframes	Constraints or uncertainties which may increase costs or timeframes moderately	NA	Constraints that can be overcome with moderate investment of time and resources	Constraints that can be overcome easily	No constraints or uncertainties
Long term performance	<i>Maintenance burden, design life</i>	Significant increase requiring additional resources and / or <10 year design life	Moderate increase in maintenance requirements, <20 year design	Minor increase in maintenance requirements	No change	Can be incorporated in current planned maintenance	Some reduction to current maintenance requirements, > 30 year design life	Considerable reduction in maintenance requirements, >30 year design life
Impact on Emergency Services	<i>Change in demand on emergency services (SES, Police, Ambulance, Fire, RFS etc)</i>	Major disbenefit	Moderate disbenefit	Minor disbenefit	Neutral	Minor benefit	Moderate benefit	Major benefit
Impact on Critical and/or Vulnerable Facilities ⁽¹⁾	<i>Disruption to critical facilities</i>	Significant increase in flood risk	Moderate increase in flood risk	Minor increase in flood risk	No Change	Minor reduction in flood risk	Moderate reduction in flood risk	Significant reduction in flood risk
Impact on Properties	<i>No. of properties flooded over floor. Across all events</i>	Above floor inundated increased	Moderate increase to number of lots affected	Some increase to number of lots affected	None / change acceptable (e.g. non habitable land)	Reduction to number of lots affected	Reduction to number of lots affected, minor reduction to above floor inundation	Above floor inundation reduced, significant reduction in lot affectation
Impact on Flood Hazard / Risk to Life	<i>Change in hazard classification</i>	Significantly increased in highly populated area	Moderately increased in populated area	Slightly increased	No Change	Slightly reduced	Moderately reduced in populated area	Significantly reduced in highly populated area
Community Flood Awareness	<i>Change in community flood awareness, preparedness and response</i>	Significantly reduced	Moderately reduced	Slightly reduced	No Change	Slightly improved	Moderately improved	Significantly improved
Climate Change Adaptability	<i>Performance under future climate change conditions, contribution to mitigation of or adaptation to changing climate</i>	increases risk	Benefits entirely eroded in future	Benefits partially eroded in future	Neutral	Provides some mitigation to changing climate	Provides moderate mitigation to changing climate	Entirely mitigates changing climate
Community and Stakeholder Support / Impacts ⁽²⁾	<i>Level of agreement (expressed via formal submissions and informal discussions)</i>	Strong opposition by numerous submissions	Moderate opposition in several submissions	Individual submissions with opposition	Neutral	Individual submissions with support	Moderate support in several submissions	Strong support by numerous submissions
Environmental and Ecological Impacts	<i>Impacts or benefits to flora/fauna</i>	Likely broad-scale vegetation/habitat impacts	Likely isolated vegetation/habitat impacts	Removal of isolated trees, minor landscapng.	Neutral	Opportunity for planting of isolated trees, minor landscapng.	opportunity for moderate enhancement of disparate area	Opportunity for large scale enhancement / improved connectivity of habitats
Legislative Compliance (including requirement for approvals)	<i>Consistency with legislative or policy requirements</i>	Non compliant	Compliance issues considered possible to overcome	Resource burden to navigate approvals	Neutral	Minor approvals required, compliant	No approvals required, compliant	Improves compliance
Financial Feasibility	<i>Capital and ongoing costs and funding sources available</i>	Significant capital and ongoing costs, or no external funding or assistance available	Moderate capital and ongoing costs, no funding available	High capital and ongoing costs, partial funding available	No relevant	Moderate capital and ongoing costs, partial funding available; or low capital and ongoing costs, no funding available	Low to moderate capital and ongoing costs, partial funding available	Full external funding and management available
Compatibility with existing Council plans, policies or strategic direction	<i>Level of compatibility</i>	Conflicts directly with objectives of several plans, policies or projects	Conflicts with several objectives or direct conflict with one or few objectives	Minor conflicts with some objectives, with scope to overcome conflict	Not relevant	Minor support for one or few objectives	Some support for several objectives, or achieving one objective	Achieving objectives of several plans, policies or projects

ID	Option	Economic Merits	Technical Feasibility	Long term performance	Impact on Emergency Services	Impact on Critical and/or Vulnerable Facilities (1)	Impact on Properties	Impact on Flood Hazard / Risk to Life	Community Flood Awareness	Climate Change Adaptability	Community and Stakeholder Support / Impacts(2)	Environmental and Ecological Impacts	Legislative Compliance (including requirement for approvals)	Financial Feasibility	Compatibility with plans, policies or strategic direction	Total Score	Overall Rank
SGBA	Implement the recommendations of the South Golden Beach levee audit.	BC = 1 (Or NA)	No constraints or uncertainties	Can be incorporated in current planned maintenance	Minor benefit	No Change	None / change acceptable (e.g. non habitable land)	No Change	No Change	Neutral	Neutral	Removal of isolated trees, minor landscaping.	Minor approvals required, compliant	Moderate capital and ongoing costs, no funding available	Some support for several objectives, or achieving one objective	7	24
AC	Further consideration of Avocado Court drainage modification.	BC >2.0	Constraints that can be overcome with moderate investment of time and resources	Minor increase in maintenance requirements	Minor Benefit	No Change	Above floor inundation reduced, significant reduction in lot affectation	Moderately reduced in populated area	No Change	Provides some mitigation to changing climate	Neutral	Neutral	Minor approvals required, compliant	Moderate capital and ongoing costs, partial funding available; or low capital and ongoing costs, no funding available.	Some support for several objectives, or achieving one objective	14	15
NCD	Further consider viable options to implement the recommendations of the New City Road drainage assessment.	BC = 1 (Or NA)	Constraints that can be overcome easily	Minor increase in maintenance requirements	Neutral	No Change	None / change acceptable (e.g. non habitable land)	No Change	No Change	Neutral	Neutral	Removal of isolated trees, minor landscaping.	Minor approvals required, compliant	Low to moderate capital and ongoing costs, partial funding available	Minor support for one or few objectives	4	25
SC	Further detailed assessment of Saltwater Creek upgrade assessment and mitigation options for Mullumbimby.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Moderate Benefit	Minor reduction in flood risk	Above floor inundation reduced, significant reduction in lot affectation	Moderately reduced in populated area	No Change	Provides some mitigation to changing climate	Strong support by numerous submissions	Likely isolated vegetation/habitat impacts	Resource burden to navigate approvals	High capital and ongoing costs, partial funding available	Some support for several objectives, or achieving one objective	15	11
FDC	Implement debris control measures for Federation Bridge and Billudgel Railway Bridge.	BC = 1 (Or NA)	Constraints that can be overcome easily	Can be incorporated in current planned maintenance	Minor Benefit	No Change	Reduction to number of lots affected, minor reduction to above floor inundation	Moderately reduced in populated area	No Change	Neutral	Strong support by numerous submissions	Neutral	Minor approvals required, compliant	Low to moderate capital and ongoing costs, partial funding available	Some support for several objectives, or achieving one objective	16	4
BM	Further consideration of Billudgel infrastructure improvements.	BC: 1.0 - 1.5	Constraints that can be overcome easily	Minor increase in maintenance requirements	Moderate Benefit	Minor reduction in flood risk	Above floor inundation reduced, significant reduction in lot affectation	Moderately reduced in populated area	No Change	Provides moderation mitigation to changing climate	Individual submissions with support	Removal of isolated trees, minor landscaping.	Resource burden to navigate approvals	Moderate capital and ongoing costs, partial funding available; or low capital and ongoing costs, no funding available.	Minor support for one or few objectives	13	20
CDM	Development a whole of catchment drainage model and overland flow path investigation.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Minor benefit	Minor reduction in flood risk	Reduction to number of lots affected	No Change	Moderately improved	Neutral	Strong support by numerous submissions	Neutral	Neutral	Low to moderate capital and ongoing costs, partial funding available	Minor support for one or few objectives	16	4
WFG	Develop guidance on the design and installation of fencing traversing waterways and channels.	BC = 1 (Or NA)	No constraints or uncertainties	Some reduction to current maintenance requirements, > 30 year design life	Neutral	No Change	None / change acceptable (e.g. non habitable land)	Slightly reduced	Slightly improved	Neutral	Moderate support in several submissions	Opportunity for planting of isolated trees, minor landscaping.	Neutral	Low to moderate capital and ongoing costs, partial funding available	Minor support for one or few objectives	13	20
RW02	Develop a sediment transport model to investigate modification to the rock walls, as part of the Coastal Management Program for the Brunswick Estuary.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Neutral	No Change	None / change acceptable (e.g. non habitable land)	No Change	No Change	Neutral	Strong support by numerous submissions	Neutral	Neutral	Low to moderate capital and ongoing costs, partial funding available	Not relevant	14	15
RM01	Council and the SES to update the Local Flood Plan based on findings of the FRMS.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Moderate Benefit	Minor reduction in flood risk	None / change acceptable (e.g. non habitable land)	Moderately reduced in populated area	Slightly improved	Neutral	Neutral	Neutral	Neutral	Full external funding and management available	Some support for several objectives, or achieving one objective	15	11
RM02	Byron Shire Council and SES to consider the findings and recommendations of the FRMS in the development of the Flood Warning Network for North Byron.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Major Benefit	Minor reduction in flood risk	None / change acceptable (e.g. non habitable land)	Moderately reduced in populated area	Moderately improved	Neutral	Strong support by numerous submissions	Neutral	Neutral	Low to moderate capital and ongoing costs, partial funding available	Some support for several objectives, or achieving one objective	18	2
RM03	More detailed assessment of potential raising of River Street to provide improved flood immunity and evacuation.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Major Benefit	Minor reduction in flood risk	None / change acceptable (e.g. non habitable land)	Moderately reduced in populated area	No Change	Neutral	Individual submissions with opposition	Neutral	Neutral	Low to moderate capital and ongoing costs, partial funding available	Minor support for one or few objectives	11	23
RM05	Identify key roads and implement automatic warning signs and depth indicators.	BC = 1 (Or NA)	No constraints or uncertainties	Some reduction to current maintenance requirements, > 30 year design life	Moderate Benefit	Minor reduction in flood risk	None / change acceptable (e.g. non habitable land)	Moderately reduced in populated area	Moderately improved	Neutral	Neutral	Neutral	Neutral	Low to moderate capital and ongoing costs, partial funding available	Some support for several objectives, or achieving one objective	16	4
RM06	Engage with the community to prepare an ongoing flood education program, with appropriate evaluation by Council and SES following implementation.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Moderate Benefit	No Change	None / change acceptable (e.g. non habitable land)	Moderately reduced in populated area	Significantly improved	Neutral	Neutral	Neutral	Neutral	Low to moderate capital and ongoing costs, partial funding available	Some support for several objectives, or achieving one objective	14	15
RM07	Undertake an Evacuation Assessment for Mullumbimby.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Major benefit	No Change	None / change acceptable (e.g. non habitable land)	Moderately reduced in populated area	Moderately improved	Neutral	Strong support by numerous submissions	Neutral	Neutral	Moderate capital and ongoing costs, partial funding available; or low capital and ongoing costs, no funding available.	Some support for several objectives, or achieving one objective	16	4
PM01	Further investigate raising eligible residential properties to reduce flood damages.	BC: 1.0 - 1.5	Constraints that can be overcome easily	No change	Moderate Benefit	Minor reduction in flood risk	Above floor inundation reduced, significant reduction in lot affectation	Slightly reduced	No Change	Neutral	Strong support by numerous submissions	Neutral	Neutral	Moderate capital and ongoing costs, partial funding available; or low capital and ongoing costs, no funding available.	Minor support for one or few objectives	15	11
PM02	Consider establishing a Voluntary House Purchase scheme for eligible properties.	BC: 1.0 - 1.5	Constraints that can be overcome with moderate investment of time and resources	No change	Moderate Benefit	Minor reduction in flood risk	Reduction to number of lots affected, minor reduction to above floor inundation	Moderately reduced in populated area	Slightly improved	Provides some mitigation to changing climate	Strong support by numerous submissions	Neutral	Neutral	High capital and ongoing costs, partial funding available	Not relevant	13	20
PM03	Changes to land use zoning should consider flood compatibility based on the recommendations of the FRMS.	BC = 1 (Or NA)	No constraints or uncertainties	Can be incorporated in current planned maintenance	Moderate benefit	No Change	Reduction to number of lots affected	Slightly reduced	No Change	Provides moderation mitigation to changing climate	Individual submissions with support	Neutral	Neutral	Low to moderate capital and ongoing costs, partial funding available	Achieving objectives of several plans, policies or projects	16	4
PM04	Flood Planning Levels revised based on the recommendations of the FRMS.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Minor Benefit	Minor reduction in flood risk	Reduction to number of lots affected	Moderately reduced in populated area	Slightly improved	Provides moderation mitigation to changing climate	Neutral	Neutral	Improves compliance	Full external funding and management available	Achieving objectives of several plans, policies or projects	20	1
PM05	Revise the Flood Planning Area based on the recommendations of the FRMS.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Minor benefit	No Change	None / change acceptable (e.g. non habitable land)	Slightly reduced	Slightly improved	Provides moderation mitigation to changing climate	Neutral	Neutral	Resource burden to navigate approvals	Low to moderate capital and ongoing costs, partial funding available	Achieving objectives of several plans, policies or projects	14	15
PM06	Council consider updating the DCP to incorporate the recommendations detailed in the FRMS.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Neutral	No Change	None / change acceptable (e.g. non habitable land)	Slightly reduced	Slightly improved	Provides some mitigation to changing climate	Strong support by numerous submissions	Neutral	Neutral	Full external funding and management available	Achieving objectives of several plans, policies or projects	Actions involving updates to the DCP have been grouped together.	
PM07	Provide more detailed guidance on the principles of wet proofing, appropriate design and materials, with direct reference to available guidelines.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Neutral	No Change	Above floor inundation reduced, significant reduction in lot affectation	Slightly reduced	Moderately improved	Provides some mitigation to changing climate	Neutral	Neutral	Neutral	Full external funding and management available	Achieving objectives of several plans, policies or projects	Actions involving updates to the DCP have been grouped together.	
PM08	Undertake more detailed assessment of properties which may benefit from property level protection and include a requirement for an assessment of property level protection as part of the DCP2014 planning matrix criteria FL4.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Minor Benefit	No Change	Above floor inundation reduced, significant reduction in lot affectation	Slightly reduced	Slightly improved	Provides some mitigation to changing climate	Neutral	Neutral	Neutral	Low to moderate capital and ongoing costs, partial funding available	Achieving objectives of several plans, policies or projects	Actions involving updates to the DCP have been grouped together.	
PM09	Section 10.7 (5) certifies to provide further detail of flood behaviour. Consideration to providing property-level flood information via an online GIS platform.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Moderate Benefit	No Change	Above floor inundation reduced, significant reduction in lot affectation	Slightly reduced	Significantly improved	Neutral	Moderate support in several submissions	Neutral	Neutral	Moderate capital and ongoing costs, partial funding available; or low capital and ongoing costs, no funding available.	Achieving objectives of several plans, policies or projects	18	2
PM10	Implement the recommendations regarding appropriate fill areas in the DCP2014.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Minor benefit	No Change	Reduction to number of lots affected, minor reduction to above floor inundation	Moderately reduced in populated area	No Change	Provides moderation mitigation to changing climate	Strong support by numerous submissions	Neutral	Neutral	Low to moderate capital and ongoing costs, partial funding available; or low capital and ongoing costs, no funding available.	Achieving objectives of several plans, policies or projects	Actions involving updates to the DCP have been grouped together.	
PM11	Byron Shire Council compliance team investigate illegal builds south of North Heads Road.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Minor benefit	No Change	Reduction to number of lots affected	Slightly reduced	No Change	Provides some mitigation to changing climate	Strong support by numerous submissions	Neutral	Improves compliance	Moderate capital and ongoing costs, partial funding available; or low capital and ongoing costs, no funding available.	Achieving objectives of several plans, policies or projects	14	15
IC	Form a committee, comprising council, state, emergency services and community member representatives to oversee the implementation of the FRMP.	BC = 1 (Or NA)	No constraints or uncertainties	No change	Minor benefit	No Change	None / change acceptable (e.g. non habitable land)	No Change	Moderately improved	Neutral	Strong support by numerous submissions	Neutral	Improves compliance	No relevant	Not relevant	15	11

ID	Section	Option	Economic Merits	Technical Feasibility	Long term performance	Impact on Emergency Services	Critical and/or Vulnerable	Impact on Properties	Flood Hazard / Risk to Life	Community Flood Awareness	Climate Change Adaptability	and Stakeholder Support /	ntal and Ecological Impacts	Compliance (including requirements)	Financial Feasibility	y with existing Council	Total Score	Overall Rank
PM04	11.6.4	Flood Planning Levels revised based on the recommendations of the FRMS.	0	3	0	1	1	1	2	1	2	0	0	3	3	3	20	1
PM09	11.6.9	Section 10.7 (5) certificates to provide further detail of flood behaviour. Consideration to providing property-level flood information via an online GIS platform.	0	3	0	2	0	3	1	3	0	2	0	0	1	3	18	2
RM02	11.5.2	Byron Shire Council and SES to consider the findings and recommendations of the FRMS in the development of the Flood Warning Network for North Byron.	0	3	0	3	1	0	2	2	0	3	0	0	2	2	18	2
RM05	11.5.5	Identify key roads and implement automatic warning signs and depth indicators.	0	3	2	2	1	0	2	2	0	0	0	0	2	2	16	4
PM06, PM07, PM08 (part), PM10	11.6.6, 11.6.7, 11.6.8, 11.6.10	Council consider updating the DCP to incorporate the recommendations detailed in the FRMS; Provide more detailed guidance on the principles of wet proofing, appropriate design and materials, with direct reference to available guidelines; include a requirement for an assessment of property level protection as part of the DCP2014 planning matrix criteria FL4; Implement the recommendations regarding appropriate fill areas in the DCP2014.	0	3	0	0	0	3	1	2	1	0	0	0	3	3	16	4
CDM	11.4.6	Development a whole of catchment drainage model and overland flow path investigation.	0	3	1	1	1	1	1	2	1	3	0	0	1	1	16	4
PM08 (part)	11.6.8	Undertake more detailed assessment of properties which may benefit from property level protection	1	3	0	1	0	3	1	1	1	0	0	0	2	3	16	4
FDC	11.4.6	Implement debris control measures for Federation Bridge and Billinudgel Railway Bridge.	0	2	1	1	0	2	2	0	0	3	0	1	2	2	16	4
RM07	11.5.7	Undertake an Evacuation Assessment for Mullumbimby.	0	3	0	3	0	0	2	2	0	3	0	0	1	2	16	4
PM03	11.6.3	Changes to land use zoning should consider flood compatibility based on the recommendations of the FRMS.	0	3	1	2	0	1	1	0	2	1	0	0	2	3	16	4
PM01	11.6.1	Further investigate raising eligible residential properties to reduce flood damages.	1	2	0	2	1	3	1	0	0	3	0	0	1	1	15	11
SC	12.1.4	Further detailed assessment of Saltwater Creek upgrade assessment and mitigation options for Mullumbimby.	0	3	0	2	1	3	2	0	1	3	0	-1	-1	2	15	11
IC	12.3.2	Form a committee, comprising council, state, emergency services and community member representatives to oversee the implementation of the FRMP.	3	1	0	1	0	3	2	0	1	0	0	1	1	2	15	11
RM01	11.5.1	Council and the SES to update the Local Flood Plan based on findings of the FRMS.	0	3	0	2	1	0	2	1	0	0	0	0	3	3	15	11
PM05	11.6.5	Revise the Flood Planning Area based on the recommendations of the FRMS.	0	3	0	1	1	1	2	1	2	0	0	-1	2	2	14	15
RM06	11.5.6	Engage with the community to prepare an ongoing flood education program, with appropriate evaluation by Council and SES following implementation.	0	3	0	2	0	0	2	3	0	0	0	0	2	2	14	15
AC	12.1.3	Further consideration of Avocado Court drainage modification.	3	1	-1	1	0	3	2	0	1	0	0	1	1	2	14	15
PM11	11.6.1	Byron Shire Council compliance team investigate illegal builds south of North Heads Road.	3	1	-1	1	0	3	2	0	1	0	0	1	1	2	14	15
RW02	11.4.3	Develop a sediment transport model to investigate modification to the rock walls, as part of the Coastal Management Program for the Brunswick Estuary.	0	3	0	1	1	1	0	2	0	3	0	0	2	1	14	15
BM	12.1.2	Further consideration of Billinudgel infrastructure improvements.	1	2	-1	2	1	3	2	0	2	1	-1	-1	1	1	13	20
WFG	11.4.4	Develop guidance on the design and installation of fencing traversing waterways and channels.	0	3	2	0	0	0	1	1	0	2	1	0	2	1	13	20
PM02	11.6.2	Consider establishing a Voluntary House Purchase scheme for eligible properties.	1	1	0	2	1	2	2	1	1	3	0	0	-1	0	13	20
RM03	11.5.4	More detailed assessment of potential raising of River Street to provide improved flood immunity and evacuation.	0	3	0	3	1	0	2	0	0	-1	0	0	2	1	11	23
SGBA	11.4.1	Implement the recommendations of the South Golden Beach levee audit.	0	3	1	1	0	0	0	0	0	0	-1	1	0	2	7	24
NCD	11.4.5	Further consider viable options to implement the recommendations of the New City Road drainage assessment.	0	2	-1	0	0	0	0	0	0	0	-1	1	2	1	4	25

¹ Critical facilities are those properties that, if flooded, would result in severe consequences to public health and safety. These may include fire, ambulance and police stations, hospitals, water and electricity supply, buses/train stations and chemical plants. Vulnerable facilities refer to those properties with vulnerable occupants, such as nursing homes or schools.