

Appendix B Draft Channel Duplication Environmental Impact Statement public notification submissions received under the Environment Protection and Biodiversity Conservation Act 1999

Submitter number	Submitter type	Submitter ID	Submitter description of the issue	GPC response
1	Private submitter	E1.01	<p>The economic necessity of this project is questionable. The need for the project might have been able to be justified if exports were actually increasing and the port was operating at full capacity. This is not the case. Gladstone Port's own fact sheet on the project states: "Based on current and predicted shipping demand over the next five years from existing and soon to be completed industries within the Gladstone region, there is no immediate requirement for any physical capital dredging to take place." GPC also admits that the duplication of the Channel will not directly increase vessel numbers through the Port.</p> <p>The whole process is an unnecessary waste of resources which could be better spent reviewing the Port to transition to the renewable economy.</p>	This submission comment has been addressed in AEIS Section 1.5.
		E1.02	<p>The Project will cause the loss of hundreds of hectares of seagrass and shorebird habitat, this is unacceptable in a World Heritage Area. The continued economic expansion of Gladstone Port is incompatible with the World Heritage Values of Gladstone harbour. While things have been different in the past we must start putting limits to growth in these very sensitive and valuable areas. For the area of Gladstone Harbour from Hamilton Point to Graham's Creek, this project plus the previous Western Basin Dredging and Disposal Project cumulatively remove around 50% of the seagrass from the northern section of the harbour. This is a very serious and substantial loss of habitat within the Great Barrier Reef World Heritage Area. There is no established way to successfully replant seagrass.</p> <p>When does the loss of seagrass habitat stop? When 25%; 50% or 100% is gone for reclamation/ development?</p>	<p>This submission comment has been noted.</p> <p>The potential Project impacts on seagrass are addressed in the Project EIS (Section 9.9) and AEIS (Sections 9.4.2 to 9.4.7).</p> <p>The potential Project impacts on shorebird habitat are addressed in the Project EIS (Section 9.17) and AEIS (Sections 9.8.1 to 9.8.4).</p> <p>The Project significant residual adverse impacts on seagrass meadows and migratory shorebird habitat will be offset (refer AEIS Appendix E4).</p>
		E1.03	<p>Details of the proposed offsets must be provided PRIOR to Project approval, so that decision makers can be certain that the proposed offsets are achievable BEFORE approving the Project. It is not clear that offsets for 275.37ha of threatened migratory shorebirds and Beach stone curlew (resident shorebird) foraging habitat; 156.41ha of seagrass and associated dugong habitat and 48.62ha of HES wetlands can be found in the Port Curtis region. These offset areas MUST be identified and secured PRIOR to project approval being given.</p>	This submission comment has been addressed in AEIS Appendix E4.

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		E1.04	The claim that GPC “has a good environmental record” is laughable given the debacle that ensued the last time that GPC did major capital dredging. After the event Gladstone Harbour was described as an “environmental disaster” by the Senate inquiry into the management of the Great Barrier Reef in 2014. The Draft EIS documents claim that World Heritage Values will not be altered - based on the project documents and our previous experience with capital dredging, how can we be sure that the same issues with turbidity and fish kills will not happen again?	This submission comment in relation to the Project mitigation measures to be implemented has been addressed in AEIS Appendices F to H, and compliance with mitigation measures and actions is addressed in the AEIS Appendix G (Sections 5.1 and 6.7), and AEIS Appendix F (Sections 5.2 and 6.7).
		E1.05	Gladstone Ports Corporation may be intending to put its best foot forwards on this but the community expects that GPC has learned from its mistakes and will be conducting the dredging in a different manner. This needs to be clearly articulated and communicated. For instance, the bund wall design is very similar, and while GPC intends to supervise the construction more closely, it may be that the fundamentals of the design need to be changed.	This submission comment has been noted. The independent review of the Western Basin reclamation area bund wall findings and recommendations have been incorporated into the AEIS commitments (refer AEIS Appendix I).
		E1.06	GPC needs to demonstrate to the community that serious environmental harm will not result from this proposal. They need to do this in a comprehensive and open manner and need to specifically address how this time will be different and why.	GPC will comply with the Project EIS approval requirements, Commonwealth and Queensland Government legislation, policies, standards and guidelines, Project environmental approval conditions, Project EMP, Dredging EMP, Environmental Monitoring Procedure and AEIS commitments (refer AEIS Appendices F to I). Compliance with the above requirements will ensure the Project does not result in serious environmental harm.
2	Private submitter	E2.01	The economic necessity of this project is questionable. The need for the project might have been able to be justified if exports were actually increasing and the port was operating at full capacity. This is not the case. Gladstone Port’s own fact sheet on the project states: “Based on current and predicted shipping demand over the next five years from existing and soon to be completed industries within the Gladstone region, there is no immediate requirement for any physical capital dredging to take place.” GPC also admits that the duplication of the Channel will not directly increase vessel numbers through the Port. The whole process is an unnecessary waste of resources which could be better spent reviewing the Port to transition to the renewable economy.	This submission comment has been addressed in AEIS Section 1.5.

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3	Private submitter	E3.01	<p>The economic necessity of this project is questionable. The need for the project might have been able to be justified if exports were actually increasing and the port was operating at full capacity. This is not the case. Gladstone Port's own fact sheet on the project states: "Based on current and predicted shipping demand over the next five years from existing and soon to be completed industries within the Gladstone region, there is no immediate requirement for any physical capital dredging to take place."</p> <p>GPC also admits that the duplication of the Channel will not directly increase vessel numbers through the Port. The whole process is an unnecessary waste of resources which could be better spent reviewing the Port to transition to the renewable economy.</p>	This submission comment has been addressed in AEIS Section 1.5.
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		E7.02	<p>The Project will cause the loss of hundreds of hectares of seagrass and shorebird habitat, this is unacceptable in a World Heritage Area, considering such a large amount has already been lost. The continued economic expansion of Gladstone Port is incompatible with the World Heritage Values of Gladstone harbour. While things have been different in the past we must start putting limits to growth in these very sensitive and valuable areas. For the area of Gladstone Harbour from Hamilton Point to Graham's Creek, this project plus the previous Western Basin Dredging and Disposal Project cumulatively remove around 50% of the seagrass from the northern section of the harbour. This is a very serious and substantial loss of habitat within the Great Barrier Reef World Heritage Area. There is no established way to successfully replant seagrass.</p> <p>When does the loss of seagrass habitat stop? When 25%; 50% or 100% is gone for reclamation/ development?</p>	<p>This submission comment has been noted.</p> <p>The potential Project impacts on seagrass are addressed in the Project EIS (Section 9.9) and AEIS (Sections 9.4.2 to 9.4.7).</p> <p>The potential Project impacts on shorebird habitat are addressed in the Project EIS (Section 9.17) and AEIS (Sections 9.8.1 to 9.8.4).</p> <p>The Project significant residual adverse impacts on seagrass meadows and migratory shorebird habitat will be offset (refer AEIS Appendix E4).</p>
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		E7.04	<p>The claim that GPC “has a good environmental record” is laughable given the debacle that ensued the last time that GPC did major capital dredging. After the event Gladstone Harbour was described as an “environmental disaster” by the Senate inquiry into the management of the Great Barrier Reef in 2014.</p> <p>The Draft EIS documents claim that World Heritage Values will not be altered - based on the project documents and our previous experience with capital dredging, how can we be sure that the same issues with turbidity and fish kills will not happen again? Of course World Heritage Values will be altered by the simple fact of removing seagrass.</p>	<p>This submission comment in relation to the Project mitigation measures to be implemented has been addressed in AEIS Appendices F to H, and compliance with mitigation measures and actions is addressed in the AEIS Appendix G (Sections 5.1 and 6.7), and AEIS Appendix F (Sections 5.2 and 6.7).</p>
		E7.05	<p>Gladstone Ports Corporation may be intending to put its best foot forwards on this but the community expects that GPC has learned from its mistakes and will be conducting the dredging in a different manner. This needs to be clearly articulated and communicated. For instance, the bund wall design is very similar, and while GPC intends to supervise the construction more closely, it may be that the fundamentals of the design need to be changed.</p>	<p>This submission comment has been noted.</p> <p>The independent review of the Western Basin reclamation area bund wall findings and recommendations have been incorporated into the AEIS commitments (refer AEIS Appendix I).</p>
		E7.06	<p>GPC needs to demonstrate to the community that serious environmental harm will not result from this proposal. They need to do this in a comprehensive and open manner and need to specifically address how this time will be different and why.</p>	<p>GPC will comply with the Project EIS approval requirements, Commonwealth and Queensland Government legislation, policies, standards and guidelines, Project environmental approval conditions, Project EMP, Dredging EMP, Environmental Monitoring Procedure and AEIS commitments (refer AEIS Appendices F to I).</p> <p>Compliance with the above requirements will ensure the Project does not result in serious environmental harm.</p>

Submitter number	Submitter type	Submitter ID	Submitter description of the issue	GPC response
8	Private submitter	E8.01	<p>The economic necessity of this project is questionable. The need for the project might have been able to be justified if exports were actually increasing and the port was operating at full capacity. This is not the case. Gladstone Port's own fact sheet on the project states: "Based on current and predicted shipping demand over the next five years from existing and soon to be completed industries within the Gladstone region, there is no immediate requirement for any physical capital dredging to take place."</p> <p>GPC also admits that the duplication of the Channel will not directly increase vessel numbers through the Port. The whole process is an unnecessary waste of resources which could be better spent reviewing the Port to transition to the renewable economy.</p>	This submission comment has been addressed in AEIS Section 1.5.
		E8.02	<p>The Project will cause the loss of hundreds of hectares of seagrass and shorebird habitat, this is unacceptable in a World Heritage Area. The continued economic expansion of Gladstone Port is incompatible with the World Heritage Values of Gladstone harbour. While things have been different in the past we must start putting limits to growth in these very sensitive and valuable areas. For the area of Gladstone Harbour from Hamilton Point to Graham's Creek, this project plus the previous Western Basin Dredging and Disposal Project cumulatively remove around 50% of the seagrass from the northern section of the harbour. This is a very serious and substantial loss of habitat within the Great Barrier Reef World Heritage Area. There is no established way to successfully replant seagrass. When does the loss of seagrass habitat stop? When 25%; 50% or 100% is gone for reclamation/ development?</p>	<p>This submission comment has been noted.</p> <p>The potential Project impacts on seagrass are addressed in the Project EIS (Section 9.9) and AEIS (Sections 9.4.2 to 9.4.7).</p> <p>The potential Project impacts on shorebird habitat are addressed in the Project EIS (Section 9.17) and AEIS (Sections 9.8.1 to 9.8.4).</p> <p>The Project significant residual adverse impacts on seagrass meadows and migratory shorebird habitat will be offset (refer AEIS Appendix E4).</p>
		E8.03	<p>Details of the proposed offsets must be provided PRIOR to Project approval, so that decision makers can be certain that the proposed offsets are achievable BEFORE approving the Project. It is not clear that offsets for 275.37ha of threatened migratory shorebirds and Beach stone curlew (resident shorebird) foraging habitat; 156.41ha of seagrass and associated dugong habitat and 48.62ha of HES wetlands can be found in the Port Curtis region. These offset areas MUST be identified and secured PRIOR to project approval being given.</p>	This submission comment has been addressed in AEIS Appendix E4.

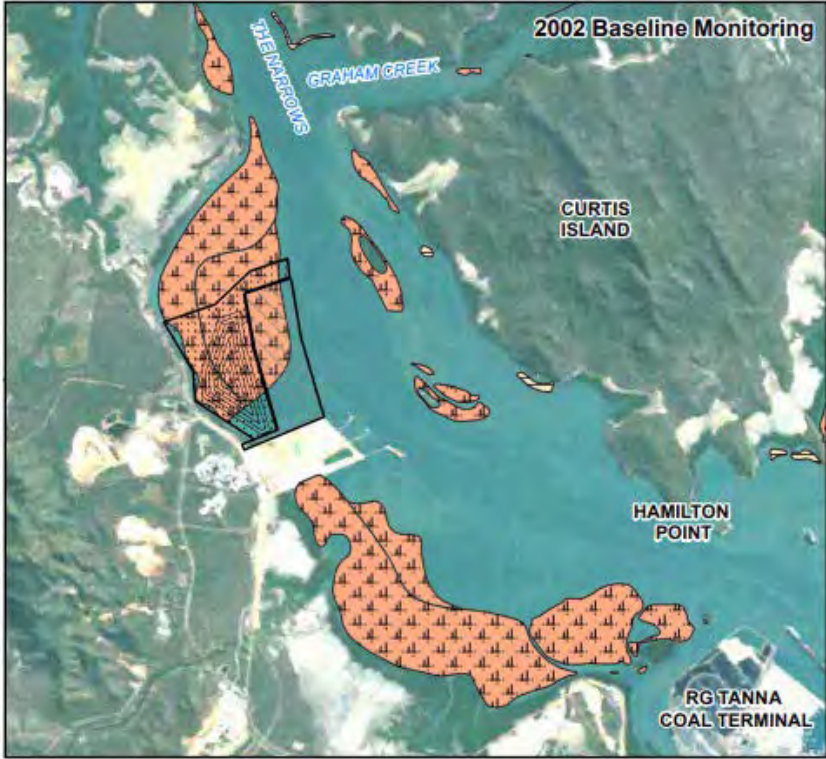
Submitter number	Submitter type	Submitter ID	Submitter description of the issue	GPC response
		E8.04	<p>The claim that GPC “has a good environmental record” is laughable given the debacle that ensued the last time that GPC did major capital dredging. After the event Gladstone Harbour was described as an “environmental disaster” by the Senate inquiry into the management of the Great Barrier Reef in 2014.</p> <p>The Draft EIS documents claim that World Heritage Values will not be altered - based on the project documents and our previous experience with capital dredging, how can we be sure that the same issues with turbidity and fish kills will not happen again?</p>	<p>This submission comment in relation to the Project mitigation measures to be implemented has been addressed in AEIS Appendices F to H, and compliance with mitigation measures and actions is addressed in the AEIS Appendix G (Sections 5.1 and 6.7), and AEIS Appendix F (Sections 5.2 and 6.7).</p>
		E8.05	<p>Gladstone Ports Corporation may be intending to put its best foot forwards on this but the community expects that GPC has learned from its mistakes and will be conducting the dredging in a different manner. This needs to be clearly articulated and communicated. For instance, the bund wall design is very similar, and while GPC intends to supervise the construction more closely, it may be that the fundamentals of the design need to be changed.</p>	<p>This submission comment has been noted.</p> <p>The independent review of the Western Basin reclamation area bund wall findings and recommendations have been incorporated into the AEIS commitments (refer AEIS Appendix I).</p>
		E8.06	<p>GPC needs to demonstrate to the community that serious environmental harm will not result from this proposal. They need to do this in a comprehensive and open manner and need to specifically address how this time will be different and why.</p>	<p>GPC will comply with the Project EIS approval requirements, Commonwealth and Queensland Government legislation, policies, standards and guidelines, Project environmental approval conditions, Project EMP, Dredging EMP, Environmental Monitoring Procedure and AEIS commitments (refer AEIS Appendices F to I).</p> <p>Compliance with the above requirements will ensure the Project does not result in serious environmental harm.</p>
9	Organisation (Gladstone Conservation Council)	E9.01	<p>ECONOMICS</p> <p>We question the economic necessity of this project. We understand the need for the project if exports were actually increasing and the port was operating at full capacity. This is not the case.ⁱ</p> <p>Gladstone Port's own fact sheet on the project states:</p> <p><i>“Based on current and predicted shipping demand over the next five years from existing and soon to be completed industries within the Gladstone region, there is no immediate requirement for any physical capital dredging to take place.”ⁱⁱ</i></p> <p>Indeed, the Executive Summary of this Draft EIS states:</p>	<p>This submission comment has been addressed in AEIS Section 1.5.</p>

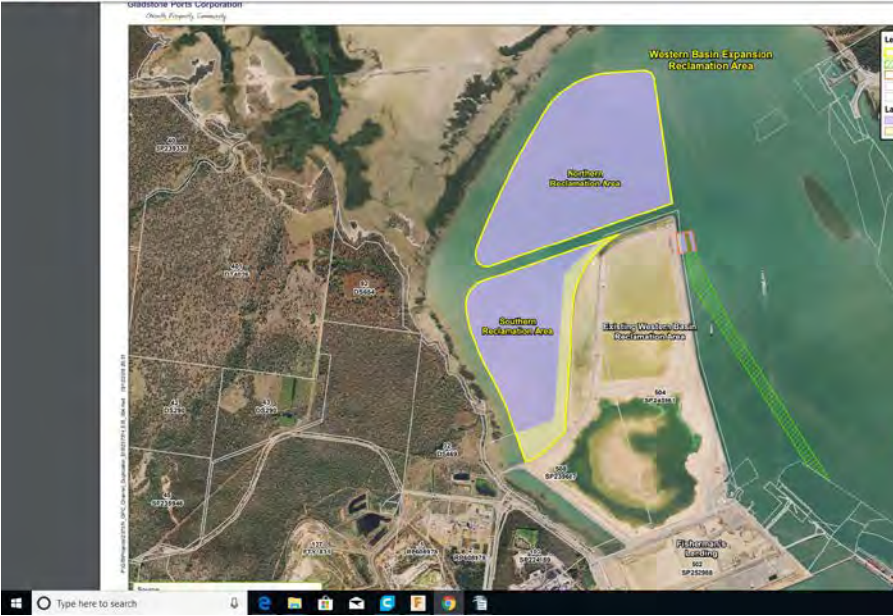
Submitter number	Submitter type	Submitter ID	Submitter description of the issue	GPC response
			<p><i>It is important to note that while the Project will facilitate an improvement in the existing and future vessel movement efficiency, and a reduction in the likelihood of vessel incident risk, the duplication of the Gatcombe and Golding Cutting Channels will not have any direct influence on increasing commercial vessel movement numbers within the Port.</i>ⁱⁱⁱ</p> <p>Therefore we believe that the whole process is an unnecessary waste of resources which could be better spent reviewing the Port to transition to the renewable economy - which is inevitable given current and predicted global trends in the energy market.^{iv}</p> <p>It seems peculiar that the Wiggins Island project has been included as a justification for the economic expansion of Gladstone Port as the project is in receivership and likely to remain so^v</p> <p><i>Chapter 1 - Introduction</i> makes the claim that:</p> <p><i>The Port of Gladstone's trade will increase over the next decade with gradual increases in operational throughputs of the three liquefied natural gas (LNG) plants on Curtis Island and the Wiggins Island Coal Terminal (WICT).</i>^{vi}</p> <p>We would like to see some hard evidence from a reputable and independent economic forecaster that this is in fact the case. The tables in Chapter 1 are based on "GPC internal database records" which are not available to public scrutiny in terms of their assumptions and evidence base. The time to apply for approval for this project is when there is an actual economic case, not many years beforehand in order to stockpile the approval, and avoid future more stringent environmental laws.</p> <p>We understand that larger vessels are becoming more common, but until this becomes a significant safety issue in the harbour, or a serious throughput issue, there remains no justification for this project, especially as the trend has remained flat in recent years.</p> <p>No amount of rhetoric about a 'four pillar economy' or 'resource opportunity areas' will interfere with the fact that the fundamentals of thermal coal production are becoming more tenuous by the day, and even metallurgical coal is subject to some new promising technology which would replace it with more environmentally friendly options.</p>	
		E9.02	<p>WORLD HERITAGE VALUES</p> <p><i>"The Great Barrier Reef is a listed cultural heritage item that potentially may be impacted by the Project activities. The area's United Nations Educational, Scientific and Cultural Organization and National listings relate to the size and diversity of ecosystems, therefore, the heritage values of the Great Barrier Reef will be protected through Project mitigation measures which aim to protect ecological values within the Project impact areas"</i>^{vii}</p>	<p>The importance of the Port of Gladstone as one of four priority ports within the GBRWHA is discussed in the Project EIS Sections 1.4.4.2 and 1.9.2.6, and the AEIS Section 9.12.3.</p> <p>A summary of the Project impacts on MNES and MSES, including the World Heritage values of the Port of Gladstone</p>

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			<p>We believe that the continued economic expansion of Gladstone Port is incompatible with the World Heritage Values of Gladstone harbour. While we accept that things have been different in the past, we must start putting limits to growth in these very sensitive and valuable areas.</p> <p><i>"The outstanding universal value (OUV) of the GBRWHA that have the potential to be impacted by the Project at the local level (i.e. local expression of OUV) include marine water quality, dugong, seagrass meadows, shorebirds and migratory birds. Of these locally expressed values, only the local expression of shorebirds and migratory birds contributes significantly to the overall OUV of the GBRWHA. The Project will not result in the loss of one or more World Heritage and National Heritage values, and these values will not be notably altered, modified, obscured or diminished by Project activities."</i>^{viii}</p> <p>We dispute this assertion vehemently based on the project documents and our previous experience with capital dredging.</p> <p>It is obvious that the Project activities will notably alter, modify, obscure and diminish one or more World Heritage and National Heritage values through the loss of hundreds of hectares of seagrass and shorebird habitat, therefore, again, appropriate offsets or alternative dredge spoil disposal sites/methods must be found before the Project can be approved.^{ix}</p>	<p>and adjoining areas, is provided in the AEIS Section 9.15.3.</p> <p>The Project significant residual adverse impacts on MNES and MSES will be offset (refer AEIS Appendix E4).</p>
		E9.03	<p>ENVIRONMENT</p> <p>We dispute the claim that GPC <i>"has a good environmental record"</i>^x given the debacle that ensued the last time that GPC did major capital dredging. After the event Gladstone Harbour was described as an <i>"environmental disaster"</i> by the Senate inquiry into the management of the Great Barrier Reef in 2014.^{xi}</p> <p>GPC needs to demonstrate to the community that serious environmental harm will not result from this proposal. They need to do this in a comprehensive and open manner and need to specifically address how this time will be different and why.</p> <p>For instance, it is admitted that</p> <p><i>"There is potential for impacts related to oxidation of PASS material and subsequent increase in acidity and migration of metals/metalloids into the marine water."</i>^{xii}</p> <p>Given that during the previous dredging, keeping the soil wet was insufficient to prevent acid contamination of waterways, we are unconvinced that we will not have a similar issue this time. We note that there is significantly less potential ASS in the area which is proposed to be dredged this time, but believe it is still a significant risk.^{xiii}</p>	<p>This submission comment has been noted.</p> <p>The independent review of the Western Basin reclamation area bund wall findings and recommendations have been incorporated into the AEIS commitments (refer AEIS Appendix I).</p> <p>GPC will comply with the Project EIS approval requirements, Commonwealth and Queensland Government legislation, policies, standards and guidelines, Project environmental approval conditions, Project EMP, Dredging EMP, Environmental Monitoring Procedure and AEIS commitments (refer AEIS Appendices F to I).</p> <p>The potential Project impact and risks associated with PASS material are discussed in Chapter 5 of the Project EIS and AEIS, and the mitigation measures included in the AEIS Dredging</p>

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			<p>Also, the claim is made that <i>“The Project coastal processes and hydrodynamic modelling results indicate that water level impacts will be negligible”^{xiv}</i></p> <p>Water quality impacts were certainly not negligible last time the GPC undertook capital dredging, and we would like to see clear evidence as to how this time will be different. There is a lot of assertion, and little evidence. We understand that GPC may be putting its best foot forwards on this (or intending to) but the community will rightly expect that GPC has learned from its mistakes and will be conducting the dredging in a different manner. This needs to be clearly articulated and communicated. For instance, we understand that the bund wall design is very similar, and while GPC intends to supervise the construction more closely, it may be that the fundamentals of the design need to be changed.</p> <p>This project has significant environmental impacts on an area within the Great Barrier Reef World Heritage Area:</p> <p><i>“The construction of the WBE reclamation area and BUF will result in the permanent loss of 278.2ha, or 0.89% of the mapped Port Curtis Directory of Important Wetlands in Australia wetland area and the permanent loss of 48.62ha, or 0.16% of the mapped Queensland high ecological significance wetlands within Port Curtis”^{xv}</i></p> <p>We note the continued trend of 'Death by a thousand cuts' where 1% and 1% and 1% is lost, adding up to a cumulative degradation of the ecological community. It seems that the loss of visual amenity is treated the same way^{xvi} - we would argue that the dominant landscape is still the natural one.</p> <p>Because this is a World Heritage Area, we should be treating the cumulative loss of visual amenity with far more seriousness.</p> <p>Cumulative impact is addressed in the Executive Summary with the following vague inadequate generality:</p> <p><i>“Mitigation measures are proposed, to manage the potential for cumulative impacts, should such events occur at the same time as the Project.”^{xvii}</i></p> <p>These measures need to be outlined before project approval is given, so that decision makers are aware of the measures proposed to manage the potential for</p>	<p>EMP and Project EMP (refer AEIS Appendices F and G) will be implemented to minimise the potential Project PASS impacts.</p> <p>Compliance with the above requirements will ensure the Project does not result in serious environmental harm.</p> <p>Project water level impacts (e.g. from the proposed WBE reclamation area) relate to potential changes in the Port marine water levels (e.g. changes to the level of HAT within marine waters of the Port) (refer AEIS Appendix D (Section 4.3)).</p> <p>Project water level impacts are different to Project water quality impacts which have been addressed in Chapter 8 of the Project EIS and AEIS.</p> <p>Project mitigation measures to minimise potential environmental impacts are provided in the AEIS Appendices F to H.</p>

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			cumulative impacts, prior to giving project approval and determining appropriate approval conditions. ^{xviii}	
		E9.04	<p>SEAGRASS</p> <p>Why is Seagrass important? The GHD Marine Ecology Assessment Report (2009) which was commissioned for the Western Basin Dredging and Disposal Project stated the following:</p> <p><i>“The seagrass meadows of Queensland are known to provide a valuable nursery habitat for commercial and recreational fisheries species, as well as being important food resources for threatened species such as marine turtles and dugong ... Seagrass meadows also display measurable responses to changes in water quality, which make them potential indicators for estimating the relative health of ecosystems...”^{xix}</i></p> <p>Since they are so important, it makes sense to protect as much of them as we can, but statements such as the following in the current draft EIS are disingenuous:</p> <p><i>“The most notable potential impact to seagrass meadows from the Project is the direct and permanent loss of seagrass meadows as a result of the WBE reclamation area (i.e. 156.41ha of coastal seagrass habitat as per the 2017 surveys). This loss of seagrass represents approximately 4.85% of the total area of coastal seagrass recorded in Port Curtis in the 2017 survey.”^{xx}</i></p> <p>If you refer to the GHD report referenced above, there is a map on page 15 of the document which shows the extent of seagrass as measured in 2002. (Map 1) This clearly shows that for the area of Gladstone Harbour from Hamilton Point to Graham's Creek, this proposed project plus the previous Western Basin Dredging and Disposal Project cumulatively remove around 50% of the seagrass from the northern section of the harbour. This is a very serious and substantial loss of habitat within the Great Barrier Reef World Heritage Area.</p> <p>Map 1: Page 15 of GHD Marine Ecology Assessment Report (2009)</p>	<p>This submission comment has been noted.</p> <p>The potential Project impacts on seagrass are addressed in the Project EIS (Section 9.9) and AEIS (Sections 9.4.2 to 9.4.7 and 9.8.1 to 9.8.4).</p> <p>The Project significant residual adverse impacts on seagrass meadows will be offset (refer AEIS Appendix E4).</p>

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			 <p data-bbox="665 1107 1317 1139">Map 2: Chapter 2 p37 of the Draft EIS – Channel Duplication</p>	

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			 <p data-bbox="674 914 1563 1026">If an appropriate offset cannot be secured prior to project approval, an alternative disposal site needs to be considered, or alternatively consider replanting an equivalent amount of seagrass in Port Curtis.^{xxi} We note however that there is no established methodology for replanting seagrass.</p> <p data-bbox="674 1034 1563 1058">The loss of this habitat cannot be restored.</p> <p data-bbox="674 1082 1563 1129">Appendix Q1 Dredging Environmental Management Plan states at Page 63 under 'Actions':</p> <p data-bbox="674 1137 1563 1265"><i>"Where practical scheduling the timing of dredging to reduce the potential likelihood for turbid plumes to impact on sensitive receptors such as avoiding the late spring and early summer periods (together with other less extreme summer periods), which represent key periods for seagrass growth and resilience building."</i>^{xxii}</p> <p data-bbox="674 1289 1563 1393">The words <i>"Where practical"</i> should be removed. Timing of dredging to reduce the potential likelihood for turbid plumes to impact on sensitive receptors must be scheduled to avoid the late spring and early summer periods, to avoid disturbance during key periods for seagrass growth and resilience building. This is especially</p>	<p data-bbox="1574 1082 2022 1185">The submission comment in relation to implementing environmental windows has been addressed in the AEIS Section 9.14 (environmental windows).</p> <p data-bbox="1574 1193 2022 1393">The use of the term 'where practical' is considered appropriate given the proposed Project dredging timeframes are approximately 40 weeks for initial dredging and Stage 1 dredging, and approximately 25 weeks for Stage 2 dredging, and if the Project dredging is</p>

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			significant, given the large area of seagrass that will be affected by this project, if approved. ^{xxiii}	undertaken as a singular campaign the timeframe is approximately 65 weeks.
		E9.05	<p>WETLAND VALUES</p> <p><i>"The construction of the WBE reclamation area and BUF will result in the permanent loss of 278.2ha, or 0.89% of the mapped Port Curtis Directory of Important Wetlands in Australia wetland area and the permanent loss of 48.62ha, or 0.16% of the mapped Queensland high ecological significance wetlands within Port Curtis."</i>^{xxiv}</p> <p>These are significant areas of ecologically important wetlands [within the Great Barrier Reef World Heritage Area]. If they are to be permanently lost as a result of the project, then equivalent areas of Important Wetlands and Queensland high ecological significance wetlands must be found as offsets within Port Curtis before the Project can be approved.^{xxv}</p>	This submission comment has been addressed in Channel Duplication Project Draft Offset Strategy (refer AEIS Appendix E4).
		E9.06	<p>OFFSETS</p> <p><i>"GPC proposes to provide its offset obligation post EIS, during the detailed design phase of the Project."</i>^{xxvi} (emphasis added)</p> <p><i>"A Project offset framework has been developed for the EIS, and a more detailed Project offset strategy and delivery plan will be developed and implemented by GPC to mitigate the above significant residual adverse impacts on ecological values."</i>^{xxvii} (emphasis added)</p> <p>This is unacceptable. Details of the proposed offsets must be provided prior to Project approval, so that decision makers can be certain that the proposed offsets are achievable before approving the Project. It is not clear that offsets for 275.37ha of threatened migratory shorebirds and Beach stone curlew (resident shorebird) foraging habitat; 156.41ha of seagrass and associated dugong habitat and 48.62ha of HES wetlands can be found in the Port Curtis region. These offset areas must be identified and secured prior to project approval being given.^{xxviii}</p>	This submission comment has been addressed in Channel Duplication Project Draft Offset Strategy (refer AEIS Appendix E4).

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		E9.07	<p>WATER QUALITY</p> <p>Discharge of the separation water from the dredge spoil dump should be monitored continuously and not rely on monitoring at arbitrary locations in the harbour to pick up on problems. Instead, this should be treated like any other industrial point source emission and have the pollution quantified precisely and continuously with strict exceedance limits. Industry are to hold all runoff water and confirm "safe" pollutant levels prior to release into the receiving environment.</p> <p>Discharge has to STOP if the pollutants constitute elevation above natural levels. It is unacceptable to rely on the environment to dilute contaminants to safe levels. This strategy backfired badly during the Western Basin dredging and is not to be repeated.</p>	<p>This submission comment has been addressed in the Project Environmental Monitoring Procedure (refer AEIS Appendix H (Section 6.8)).</p> <p>GPC will comply with the Project Environmental Monitoring Procedure (refer AEIS Appendix H) and the ERA 16 development permit conditions which will include water quality licence discharge limits for the tailwater discharges from the Western Basin and WBE reclamation areas to marine waters.</p>
		E9.08	<p>POTENTIAL CONTAMINATION</p> <p><i>"During the WB and WBE reclamation area activities land contamination has the potential to occur from the storage and use of oils, fuels, chemicals and hazardous materials for the operation of machinery, vehicles and other equipment. Mitigation of the potential effects from any spills or leaks will include plant maintenance, availability of spill kits and appropriate training in the use of spill kits."</i>^{xxix} and</p> <p><i>"The potential impacts related to the groundwater resources during the construction and maintenance phases include potential spillage associated with the storage and use of oils, fuels, chemicals and hazardous materials for the operation of machinery, vehicles and other equipment as well as potential contamination from ASS disturbance."</i>^{xxx}</p> <p>[Given the location within the Great Barrier Reef World Heritage Area], all oils, fuels, chemicals and hazardous materials stored in the WB and WBE reclamation areas should be stored in impervious bunded areas to prevent spillages entering the local environment, [and] reliance should not be placed on spill kits alone.^{xxxi}</p>	<p>This submission comment has been addressed in the Dredging EMP (refer AEIS Appendix F (Section 9.9.1)) and the Project EMP (refer AEIS Appendix G (Section 8.10)).</p>

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		E9.09	<p>COASTAL PROCESSES AND HYDRODYNAMICS</p> <p><i>"The most significant changes will occur in the immediate vicinity of the WBE reclamation area. Further coastal processes and hydrodynamic modelling of the WBE reclamation area bund wall and construction sequences will be undertaken during the detailed design phase of the Project, and a monitoring program will be implemented to manage any observed impacts in the channels and along the shoreline adjacent to the new reclamation area."</i> ^{xxxii} The proposed <i>"Further coastal processes and hydrodynamic modelling of the WBE reclamation area bund wall and construction sequences"</i> should be carried out before the EIS is approved, so that decision makers can take into account any likely impacts during the decision making process, and condition any approvals accordingly.</p> <p>Baseline monitoring should be occurring now, so that <i>"any observed impacts in the channels and along the shoreline adjacent to the new reclamation area"</i> can be accurately measured. This is especially the case, seeing as in <i>Water Quality</i> on page 10 it states:</p> <p><i>"Velocity impacts will be significant in channels adjacent to the WBE reclamation area"</i>. ^{xxxiii}</p>	<p>This submission comment has been addressed in AEIS Section 8.2 (potential impacts from the proposed WBE reclamation area on coastal processes and hydrodynamics) and the Channel Duplication Project Coastal Processes and Hydrodynamics Technical Report (refer AEIS Appendix D (Sections 4.3.2 and 4.5.1)).</p>
		E9.10	<p>FISH AND OTHER MARINE REPTILES</p> <p><i>"Whilst the direct loss of inshore habitat from the establishment of the WBE reclamation area and BUF has the potential to impact on fisheries and other marine reptile values, due to the extent of other Port Curtis seagrass meadows, mangrove communities and other inshore areas identified as having fisheries importance, this Project direct loss of inshore habitat will not result in any significant impacts on Port Curtis fish, other marine reptiles and fisheries values."</i> ^{xxxiv}</p> <p><i>"The most notable potential impact to marine turtles from the Project is the direct and permanent loss of coastal seagrass habitat as a result of the WBE reclamation area."</i> ^{xxxv}</p> <p><i>"The most notable potential impact to marine mammals from the Project is the direct and permanent loss of coastal seagrass habitat as a result of the establishment of the WBE reclamation area."</i> ^{xxxvi}</p> <p>When does the loss of seagrass habitat stop? When 25%; 50% or 100% is gone for reclamation/ development? If there was a guarantee that the loss of 4.85% as a result of this project was the maximum to be lost, then perhaps it could be tolerated, however, without such a guarantee then appropriate offsets or an alternative disposal site should be investigated before the Project is approved. ^{xxxvii}</p>	<p>This submission comment has been noted.</p> <p>The potential Project impacts on seagrass are addressed in the Project EIS (Section 9.9) and AEIS (Sections 9.4.2 to 9.4.7).</p> <p>The potential Project impacts on shorebird habitat are addressed in the Project EIS (Section 9.17) and AEIS (Sections 9.8.1 to 9.8.4).</p>

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		E9.11	<p>MIGRATORY SHOREBIRDS</p> <p><i>"The WBE reclamation area will result in permanent loss of approximately 275.37ha of migratory potential shorebird foraging habitat (99.74% of the direct disturbance area). The habitat within the WBE reclamation area is foraging habitat in close proximity to a number of important roosting habitats for migratory shorebird species, and is therefore likely important foraging habitat for birds utilising these roosts. Loss of foraging habitat due to establishment of the WBE reclamation area has the potential to impact on migratory shorebirds via the potential to cause disruption to roosting and foraging behaviour. As a result, adverse impacts on the survival of migratory shorebirds and their breeding success may potentially occur if shorebirds are unable to find suitable alternative foraging sites within close proximity to current suitable roosting sites."</i> ^{xxxviii}</p> <p>Again, a huge area of important habitat for threatened species is to be permanently lost as a result of the project. Appropriate offsets or an alternative site must be found before the Project can be approved.^{xxxix}</p>	This submission comment has been addressed in Channel Duplication Project Draft Offset Strategy (refer AEIS Appendix E4).
		E9.12	<p>AIR QUALITY</p> <p><i>"Predicted ground-level concentrations of particulates, and dust deposition rates are predicted to comply with the relevant air quality objectives at the location of sensitive receptors, provided a 75% control due to watering is achieved to reduce dust emissions due to haulage along the bund walls and other unsealed roads.....During dredging, predicted ground-level concentrations of PM10 are predicted to exceed at some residential locations in Targinnie. Additional management measures such as the use of chemical suppressants on haulage routes could assist in preventing elevated dust concentrations during this stage of the Project."</i> ^{xi}</p> <p>Exceedance of PM10 levels for some Targinnie residents is unacceptable, due to the implications for human health. Watering of haul roads greater than the suggested level of 75% will be required. It may be necessary to progressively seal all haul roads as the project progresses to prevent these unacceptable impacts on Targinnie residents, especially considering the three year duration of the Project.^{xli}</p>	This submission comment has been addressed in AEIS Section 12.2 (potential construction impacts – dust emissions during construction of bund walls) and Section 12.3 (dredged material placement – dust emissions).
		E9.13	<p>GREENHOUSE GAS EMISSIONS</p> <p><i>"The total GHG emissions associated with the Project are calculated as 262,059t of carbon dioxide equivalent, with all significant GHG emissions assumed to be associated with the Project's construction of which the dredging activities accounted for the majority of emissions (67%). The most practical opportunities for the mitigation of GHG emissions are predominantly fuel efficiency initiatives such as equipment selection and maximising payload weight in dredging operations."</i> ^{xlii}</p> <p>This is a huge amount of carbon dioxide equivalent generated by the Project and needs to be sequestered through GHG abatement credits obtained via the carbon credit market eg for reforestation.^{xliii}</p>	Submission comment has been noted. GPC will report GHG emissions under the NGER program for Project activities which GPC will be the controlling entity.

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		E9.14	<p>FAUNA MANAGEMENT PLAN</p> <p>The EIS is very comprehensive and seems to have covered the impacts on a wide range of bird species but with specific reference to the Fauna Management Plan [we] would raise the following points:</p> <p>The Fauna Management Plan says <i>at page 46</i>:</p> <p><i>“If practicable, construction of the WBE reclamation area and BUF will be scheduled to occur outside of the critical migratory bird visitation periods”.</i>^{xliv}</p> <p>This statement should be changed to read:</p> <p><i>“construction of the WBE reclamation area and BUF will be scheduled to occur outside of the critical migratory bird visitation periods”.</i>^{xlv}</p> <p>ie. remove the words “if practicable”</p> <p>We understand that factors such as weather conditions can affect construction but if construction is delayed and would continue into the migratory shorebird visitation period i.e. September then it should be postponed until the next March to September period. These vague statements really mean nothing and gives [GPC] carte blanche to do anything they want.^{xlvi}</p> <p>Construction of the WBE reclamation area and BUF must be scheduled to occur outside of the critical migratory bird visitation periods, to avoid disturbance to these birds.^{xlvii}</p>	<p>The submission comment in relation to implementing environmental windows has been addressed in the AEIS Section 9.14 (environmental windows).</p> <p>The use of the term ‘where practical’ is considered appropriate given the proposed Project dredging timeframes are approximately 40 weeks for initial dredging and Stage 1 dredging, and approximately 25 weeks for Stage 2 dredging, and if the Project dredging is undertaken as a singular campaign the timeframe is approximately 65 weeks.</p>
			<p>The Fauna Management Plan says <i>at page 48</i>:</p> <p><i>“Where practicable, the construction of the WBE reclamation area bund wall that is nearest to the coastline will be scheduled to occur from March to September (i.e. outside of the critical migratory bird visitation periods for the majority of species visiting Port Curtis) (as presented in Appendix 3 (Timing of Migration) of the Gladstone Ports Corporation Report for Migratory Shorebird Monitoring Port Curtis and the Curtis Coast Annual Summer Survey 2016). Migratory birds are still likely to be present in the area outside of the March to September period, therefore measures relating to migratory shorebirds and their habitat will be implemented as required during the construction period (i.e. not restricted to these months).”</i>^{xlvi}</p> <p>Again, the words “Where practicable” should be removed. Construction of the WBE reclamation area and BUF must be scheduled to occur outside of the critical migratory bird visitation periods, to avoid disturbance to these birds.^{xlix}</p>	<p>The Project EMP and Dredging EMP (refer AEIS Appendices F and G) contain a fauna management plan, other Project fauna mitigation measures are provided within the following sub plans of the EMPs:</p> <ul style="list-style-type: none"> ■ Pest and weed management plan ■ Vegetation management plan ■ Noise and vibration management plan ■ Water quality management plan and Environmental Monitoring Procedure ■ Waste management plan.
			<p>The Fauna Management Plan says <i>at page 48</i>:</p>	<p>A pre-construction flora and fauna survey will be undertaken prior to Project</p>

Submitter number	Submitter type	Submitter ID	Submitter description of the issue	GPC response
			<p><i>“birds are still likely to be present in the area outside of the March to September period, therefore measures relating to migratory shorebirds and their habitat will be implemented as required during the construction period (i.e. not restricted to these months)”.</i>ⁱ</p> <p>We would like to see what the measures relating to migratory shorebirds will be. Again [this is] just a general statement which means nothing.ⁱⁱ</p> <p>The Fauna Management Plan says at page 48:</p> <p><i>“Any works occurring within sensitive habitats (e.g. shorebird habitat) will be conducted in the presence of a fauna spotter catcher. The fauna spotter catcher will have the authority to initiate a ‘stop-work’ order within the buffer zone of an active breeding place (i.e. 50m for all raptor, owl, and conservation significant species; 30m for all other species). In this event, the spotter catcher will determine the appropriate management of the breeding place in accordance with the management measures included in the FMP (as developed following the pre-construction survey) and in accordance with all relevant permits and approvals.”</i>ⁱⁱⁱ</p> <p>This is commendable but what does <i>“appropriate management of the breeding place”</i> mean? It says that these measures will be developed following a pre-construction survey but they should be published beforehand and included in the FMP before work commences so that interested parties can scrutinise the measures to determine if they are adequate.ⁱⁱⁱ</p>	<p>construction commencing. The findings of the survey will be incorporated into the Project vegetation management plan and fauna management plan, including additional mitigation measures to address specific flora and fauna impacts identified as part of the pre-construction flora and fauna survey.</p> <p>The spotter catcher involved in Project construction activities will identify any additional mitigation measures to be implemented as part of Project EMP and Dredging EMP.</p>
			<p>The Fauna Management Plan says at page 49:</p> <p><i>“Key personnel will be provided mandatory training in the potential Project fauna impacts, sensitive receptors and mitigation measures to be implemented”.</i>^{iv}</p> <p>Who will conduct this training?^{iv}</p>	<p>Project environmental training will be undertaken by appropriately qualified and/or experienced staff.</p>
		E9.15	<p>CONCLUSION</p> <p>During consultation with colleagues and interested parties, the consensus view is that this Draft EIS for the proposed Channel Duplication is unnecessarily vague and proposes a range of measures to be determined after the approval has been given.</p> <p>This is clearly unacceptable as the community can only judge these measures if we are given them ahead of time. At this point we could not make a judgement as to how effective any mitigation measures will be, because we have been given insufficient detail.</p> <p>The Draft EIS should be returned to the proponent with a requirement to flesh these matters out in detail so that the community can make a judgement as to whether they will be effective.</p> <p>We also believe that the whole process is a waste of the community's time, given that there is no economic necessity for the project.</p>	<p>This submission comment has been noted.</p> <p>The AEIS has included detailed EMPs and commitments which are at an appropriate level for assessment as part of the EIS process.</p> <p>The Dredging EMP and Project EMP will be further developed during the Project detailed design phase and the post EIS environmental applications.</p>

Submitter number	Submitter type	Submitter ID	Submitter description of the issue	GPC response
			<p>Why then is it going ahead? It can only be that the Gladstone Ports Corporation wishes to 'stockpile the approval' ahead of ever more stringent environmental laws. This is morally wrong and needs to be stopped.</p> <p>We believe that no approval should be given until both an economic case and fully detailed mitigation measures have been provided to the community and fully consulted upon.</p>	

References

Note that unreferenced commentary should be attributed to Gladstone Conservation Council.

- i Here is the link to GPC's actual throughput:
<http://content1.gpcl.com.au/viewcontent/CargoComparisonsSelection/CargoOriginDestination.aspx?View=G&Durat=F&Key=2018> as of 6/5/19
- ii https://www.gpcl.com.au/SiteAssets/Development/Dec14_GPC_ChannelDuplication_FactSheet.pdf as of 6/5/19
- iii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 2 as of 6/5/19
- iv <https://www2.deloitte.com/insights/us/en/industry/power-and-utilities/global-renewable-energy-trends.html?id=gx%3A2el%3A3dc%3A4direnergy%3A5awa%3A6di%3A09132018> as of 6/5/19
- v <https://www.theaustralian.com.au/business/dataroom/battle-of-wiggins-island-in-court/newsstory/932c9a2667ce4c11f2e4387552a1bd32> as of 6/5/19
- vi <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/chapter-01-introduction-26mar19.pdf> Page 1-2 as of 16/5/19
- vii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 18 as of 7/5/19
- viii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 13 as of 7/5/19
- ix Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- x <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 3 as of 6/5/19
- xi <https://www.couriermail.com.au/news/queensland/senate-report-says-gladstone-harbour-an-environmentaldisaster-recommends-halt-to-dumping-and-dredging-to-protect-great-barrier-reef/newsstory/0cf8e2c2b19802666d60579a2e5d235a> as of 6/5/19
- xii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 9 as of 6/5/19
- xiii <https://www.couriermail.com.au/news/queensland/gladstones-dredging-stops-again/newsstory/abb30e02f3ecf331eb0d83d43d138878?sv=706c5b469ddd578ded7395ed29e1ac19> as of 6/5/19
- xiv <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 10 as at 6/5/19
- xv <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 11 as at 6/5/19
- xvi <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 8 as at 6/5/19
- xvii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 20 as at 7/5/19
- xviii Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xix <http://eisdocs.dsdip.qld.gov.au/Port%20of%20Gladstone%20Western%20Basin%20Dredging/EIS/appendix-qmarine-ecology-report.pdf> Page 10 as at 6/05/19
- xx <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 11 as at 6/5/19
- xxi Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xxii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/appendix-q1-dredgingenvironmental-management-plan-26mar19.pdf> Page 63 as of 21/05/19

- xxiii Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xxiv <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 11 as at 6/5/19
- xxv Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xxvi <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/chapter-09-natureconservation-26mar19.pdf> Page 332 as at 7/5/19
- and <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/chapter-01-introduction-26mar19.pdf> Page 1-39 as at 16/5/19
- xxvii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 22 as at 7/5/19
- xxviii Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xxix <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 9 as at 7/5/19
- xxx <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 14 as at 7/5/19
- xxxi Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xxxii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 9 as at 7/5/19
- xxxiii Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xxxiv <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 11 as at 7/5/19
- xxxv <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 12 as at 7/5/19
- xxxvi <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 13 as at 7/5/19
- xxxvii Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xxxviii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 12 as at 7/5/19
- xxxix Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xl <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 15 as at 7/5/19
- xli Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xl ii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/executive-summary-26mar19.pdf> Page 15 as at 7/5/19
- xl iii Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xl iv <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/appendix-q2-projectenvironmental-management-plan-26mar19.pdf> Page 46 as at 21/05/19
- xl v Fauna management Plan analysis provided by Allan Briggs of Birdlife Capricornia.
- xl vi Fauna management Plan analysis provided by Allan Briggs of Birdlife Capricornia.
- xl vii Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- xl viii <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/appendix-q2-projectenvironmental-management-plan-26mar19.pdf> Page 48 as at 21/05/19
- xl ix Comment provided by Mike Moller of Wide Bay Burnett Environment Council
- l <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/appendix-q2-projectenvironmental-management-plan-26mar19.pdf> Page 48 as at 21/05/19
- li Fauna management Plan analysis provided by Allan Briggs of Birdlife Capricornia.
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- li ii Fauna management Plan analysis provided by Allan Briggs of Birdlife Capricornia.
- li iv <http://content.gpcl.com.au/ViewContent/ChannelDuplication-Draft-EIS-April2019/appendix-q2-projectenvironmental-management-plan-26mar19.pdf> Page 49 at 21/05/19
- li v Fauna management Plan analysis provided by Allan Briggs of Birdlife Capricornia.