Guidelines for fishers – common questions to ask when a new sewerage treatment plant (STP) is being proposed or an existing plant upgraded

(Note: some questions marked with a * are explained on the following pages)

1) Have the requirements of relevant legislation, planning instruments, guidelines been addressed/ considered?*

2) Have all opportunities for effluent re-use been identified? If effluent re-use is not considered to be a viable option, a thorough justification should be provided*

3) How many STPs/outfalls will there be?

4) Where will new STPs be located?

5) Where will the discharge points (where effluent is released) be and how deep?

6) What is the type of reticulation network and where will it be located?*

7) How will the sewage be treated, what will be the level of treatment and why?*

8) What will be the actual quality of effluent that will be released or discharged from the STP and does it meet relevant guidelines? How does it compare to other STPs in the area?*

9) How much effluent will be discharged by the STP?

10) How many people does the STP service and what area? Does this include the extra people who visit the area in peak holiday periods (i.e. peak tourist/holiday loads)?

11) Has there been an assessment of the aquatic habitat (seagrasses, mangroves, saltmarsh, rocky shores, reefs etc and water quality) abundance and distribution of animals including fish, prawns and other key commercial and recreational species? Have there been or will there be discussions with DPI Fisheries, local fishers, aquaculturalists?*

12) Has there been any discussions with Department of Primary Industries (DPI) - Fisheries, seafood industry, regarding key fishing grounds, location of oyster leases etc?

13) Is there a detailed assessment of aquatic impacts of the proposal (plants, animals, water quality) and assessment of impacts on the seafood industry e.g. impacts on the migration of fish and prawns? What things are in place to ensure impacts do not occur?*

14) How will these impacts be determined and how will they be monitored*?

15) How often will overflow events occur (i.e. raw sewage entering receiving waterways), what will be done to prevent this happening and have impacts to the aquatic plants and animals and water quality been assessed?*

16) Is there any provision for wet weather storage i.e. to store the raw sewage that overflows in wet weather so it can be eventually pumped back to the treatment plant so it does not enter these waterways?

17) How will the effluent spread and where will it go (e.g. will it go near oyster leases or areas where prawns are cooked or cooled)? Have detailed models been developed in consultation with the fishing industry who are experts on the conditions e.g. tides etc*

18) Will the proposal deter people from buying seafood e.g. seafood that has been caught in effluent?

19) Is there any potential to impact on share prices in the fishery. How will this be addressed?

20) Has the total (cumulative) impact of all STPs in the area combined been assessed? (impact on aquatic habitat, water quality and operation of commercial seafood industry).

21) What is the potential that upgrading an STP or creating a new STP may have for encouraging new development into the area and for these areas to be serviced by the STP? Has this extra potential capacity been accounted for and if it has not, it needs to be assessed in terms of the proposed impacts to the aquatic environment and seafood industry.

22) When is the public consultation period, the community information sessions and what plans are there to talk to the seafood industry e.g. fishers? (Need to engage/ talk to DPI – Fisheries, commercial and recreational fishers to determine key fishing grounds, location of and extent of aquatic habitat, hydrodynamic conditions like currents, tides etc).

Background/further information

1) **Compliance with the following legislation, guidelines, policies** should either directly or indirectly result in habitat protection, protection of fish, shellfish, water quality and or fishing operations in the area of the proposed STP

a) Legislation

- Fisheries Management Act, 1994 and Fisheries Management Amendment Act 1997 (including any Fish Habitat Protection Plans applicable to the region - authorities and local councils must take into account the strategies in the plans to make sure these habitats are protected).
- Protection of the Environment Operations Act, 1997.
- Native Vegetation Act 2003.
- Threatened Species Conservation Act, 1995.
- Rivers and Foreshores Improvement Act 1948.
- Environment Protection and Biodiversity Conservation Act 1999.

b) Policies

State Environmental Planning Policies i.e. SEPPS. (These are currently being changed by the Department of Infrastructure, Planning and Natural Resources)

- SEPP No. 14 Coastal Wetlands.
- SEPP No. 71 Coastal Protection.
- SEPP No. 62 Sustainable Aquaculture Strategy.

Any new STPs or changes to existing STPS must not impact on areas that have been approved for safe shellfish harvesting by NSW Food Authority. NSW Food Authority is classifying the 90 shellfish areas across the state (as conditionally approved, restricted harvest etc) which will feed into DPI-Fisheries Sustainability Assessments for the oyster industry. These Sustainability Assessments will be factored into Local Environmental Plans in your area so that they recognise these take these approved harvesting areas.

- Coastal Policy 1997.
- Any of the Healthy Rivers Commission's Statement of Joint Intents that are applicable for your area.

c) Some of the Guidelines that need to be considered and complied with

- Department of Environment and Conservation's *Environmental Guidelines: Use of Effluent by Irrigation.*
- The Australian and New Zealand Environment and Conservation Council (ANZECC) - National Water Quality Strategy including:
    - Australian Water Quality Guidelines for Fresh and Marine Waters.
    - Guidelines for Groundwater Protection in Australia.
    - Guidelines for Sewerage Systems – Effluent Management (NB: effluent is the liquid part of the sewage that has come out of the STP).
- The objectives of the ANZECC Guidelines must be considered.
    - "Avoid risk to health".
    - "Maximise the reuse of effluent (for both the value of water and the nutrients)." (i.e. **identify all opportunities for reuse of effluent**. Councils can apply for funds under the Australian Government Water Initiative as of June 2005. http://www.nrm.gov.au/water-fund/index.html).
    - "Minimise adverse impacts to land and the contamination of surface and groundwater when effluent is used in land applications" (make sure that when effluent is reused and pumped

onto land, that it does not make the water quality in the groundwater or rivers and streams worse).

- "Maintaining agreed water quality objectives for receiving waters when discharging to surface waters".

2) Re-use

It is a requirement of the objectives of the ANZECC guidelines (above) to consider all opportunities for re-use. Councils can apply for fund under the Councils can apply for funds under the Australian Government Water Initiative as of June 2005. http://www.nrm.gov.au/water-fund/index.html)

6) Reticulation network

This is the types of pipes and pumps that will be used to transport the sewerage e.g. gravity systems, low pressure etc. Low pressure systems usually have less impacts on the environment.

7) Level of treatment

Primary treatment is very basic, really only taking out the sludge; secondary also removes some nutrients, most bacteria (faecal coliforms, enterococci) and suspended solids; tertiary is best and removes most of the remaining nutrients, and suspended solids). Viruses can impact on shellfish and endocrine disruptors which include things like hormones that go down the sewerage system, can badly impact on fish breeding patterns etc.

8) Quality of the effluent released

How high will it be in nitrogen, phosphorous, suspended solids, faecal coliforms, biological oxygen demand or BOD (usually, the lower the better e.g. lower BOD is better as it means more oxygen will be left for the fish and other aquatic plants and animals), etc.

11) Assessment of aquatic environment

Baseline surveys need to be conducted i.e. surveys of what is already there so any changes to may occur due to the proposed STP can be identified through ongoing monitoring), both during the construction and operation phases and consequences for the commercial seafood industry.

13) Assessment of aquatic impacts of the proposal

This should include an assessment of:

- the cumulative nitrogen and phosphorus load (the additional amount of nitrogen and phosphorous in the waterway from the new STP as well as from other inputs), impacts on phytoplankton, zooplankton (the food base for all fish and prawns), potential for stimulation of algal blooms/ aquatic weeds (can be toxic to shellfish and can hinder fishing operations). There should also be an assessment of the localised impact of releasing effluent with a potentially higher nutrient content.

- the impact of human hormones and endocrine disruptors contained in the STP effluent on the aquatic ecosystem (fish, shellfish, prawns etc).

- the effects from the discharge of effluent on salinity levels and temperature and any consequences for fish/ prawn movement / fish migration patterns. i.e. effluent with low salinity can create a fresh water barrier to migration of aquatic organisms.

- impact of big discharges of effluent at certain peak times of the day on aquatic organisms.

- potential soil erosion during construction and operation or other impacts on water quality or aquatic habitat and plans to address any impacts that may occur. This should include the potential for disturbance of Acid Sulphate soils during construction and mitigation measures proposed.

14) Monitoring

Need ongoing monitoring program (construction and operation) to assess the actual impacts of the proposal, in regard to the aquatic environment and consequences for the commercial seafood industry. Following from this, there needs to be a commitment to remediation or compensation (if remediation not possible) to mitigate unexpected impacts experienced (i.e. impacts that are either greater than identified in the EIS or not identified in the EIS at all). This should be agreed prior to project approval.

This should include:

- monitoring programs for system performance including a program for monitoring the outfall (i.e. monitoring to make sure that the effluent is of a certain quality and to record how often overflow events actually do occur).

- water quality and soil monitoring (including acid that may leach into waterways from acid sulphate soils).

15) Over flow events/ discharges of raw sewerage

This may occur from wet weather events when raw sewage can enter receiving water ways and affect shellfish, fish and other aquatic organisms. Is there any provision for wet weather storage i.e. to store the raw sewage that overflows in wet weather so it can be eventually pumped back to the treatment plant so it does not enter these waterways? Also may occur from power failure, leaking pipes, peak tourist loads. Needs to be assessed in terms of likelihood and impacts to aquatic plants and animals, water quality and operation of seafood industry.

17) Location and dilution of plume

Need to determine where the effluent plume will go, how it will dilute so that it meets ANZECC guidelines, whether it will come into contact with oyster leases/ areas for cooking and cooling of prawns, slurrying / washing of fish etc.

Need to make sure the models represent the real conditions of the receiving waterway/s i.e. field measurements need to be taken of the tidal currents, other currents, temperature, salinity etc to

validate the models (i.e. to check they correctly predict the real currents etc) over a long enough period of time to account for seasonal variations. This needs to be done in consultation with commercial fishers who are experts on these conditions.

The accuracy and error associated with the models must be stated.