Northern Territory Planning Scheme: Scheme Amendment Report

Proposed introduction of Rapid Creek Flood Response SU (Specific Use) Zone and associated Guideline Document.

April 2018
## Table of Contents

1. **Introduction** ................................................................................................................................. 3  
   1.1  Background ................................................................................................................................. 3  
   1.2  Site and Locality Description ................................................................................................... 4  

2. **Description of Proposed Amendment** .......................................................................................... 6  
   2.1  Rapid Creek Flood Response SU Zone provisions ...................................................................... 6  
   2.1.1  Application of the SU Zone .................................................................................................... 6  
   2.1.2  Clause 1. Zone Purpose ......................................................................................................... 7  
   2.1.3  Clause 2. Land Use .............................................................................................................. 7  
   2.1.4  Clause 3. Single Dwelling Development .............................................................................. 8  
   2.1.5  Clause 4. Flood Protection ..................................................................................................... 8  
   2.1.6  Clause 5. Design Certification ............................................................................................... 10  

3. **Statement of Strategic Intent** ........................................................................................................ 10  
   3.1  Northern Territory Planning Scheme ......................................................................................... 10  
   3.2  Darwin Mid Suburbs Area Plan .................................................................................................. 11  

4. **Servicing** ....................................................................................................................................... 14  

5. **Conclusion** ..................................................................................................................................... 15  

Attachment A – Rapid Creek Flood Response SU Zone: Amending Text. ......................... 15  
Attachment B – Rapid Creek Flood Study Update– Flood Modelling Results 2018;  
Rev 6 04/04/2018, Jacobs. ................................................................................................................. 15  
Attachment C – Correspondence from A/Executive Director NTES, 23 March 2018. 15
1 Introduction

This application seeks to amend the Northern Territory Planning Scheme (NTPS) to introduce the Rapid Creek Flood Response SU (Specific Use) zone provisions and associated Guideline Document only to the Schedules to Clause 2.4 and Clause 2.8 of the NTPS respectively. This will provide a framework for the flood mitigated redevelopment of residential properties affected by the 1% AEP flood risk from Rapid Creek at a multiple dwelling residential density. The zone will only be in effect for specific properties on the finalisation of subsequent scheme amendments to include specific properties within the SU zone. At that time, development applications will then be able to be lodged in accord with the zone requirements.

The proposed provisions reflect the concepts and planning principles as set out in the Darwin Mid Suburbs Area Plan (DMSAP), Concept C Residential Areas Affected by Riverine Flooding and Primary Storm Surge from Rapid Creek, as incorporated as policy into the NT Planning Scheme in July 2016 and further flood modelling for the area.

1.1 Background

Rapid Creek in the Northern suburbs of Darwin has a history of flooding that can impact on residential areas located within the flood plain. In particular, isolated areas in the suburb of Millner can be subject to flash flooding within a short time of heavy monsoonal rainfall. Updated Rapid Creek flood mapping released in 2014 identified 67 residential properties located (wholly or partially) within the area inundated in a 1% AEP (Q100) event with depths of flooding up to 0.8m above natural ground level. Portion of this area was also identified as within a ‘High Hazard’ area related to the potential effect of flooding. The flood potential and impact of Rapid Creek has been subject to a number of additional studies including the Rapid Creek Flood Plain Risk Management Discussion Paper, SKM; 03/01/2014, Rapid Creek Flood Study Update – DEM and TUFLOW Model Development Report, Jacobs; 21/04/2016 and Rapid Creek Flood Study Update – Flood Modelling Results Rev 6, Jacobs 04/04/2018.

The Darwin Region Flood Mitigation Advisory Committee has further investigated options for flood mitigation to reduce the potential for and consequences of Rapid Creek flooding events. This has resulted in a number of recommendations addressing infrastructure, maintenance, flood proofing, community awareness, and planning and development measures (Darwin Region Flood Mitigation Advisory Committee Report, 2015).

Recommendation 6 of the Darwin Region Flood Mitigation Advisory Committee Report includes the construction of a detention basin in the upper catchment. This is based on modelling that indicates reductions in the flood level between Trower Road and McMillans Road, but not avoidance of inundation of the most flood affected properties in the Millner locality. Based on this outcome the Darwin Mid Suburbs Area Plan proposes the introduction of specific zoning to encourage flood mitigated redevelopment in the affected area. The Rapid Creek Flood Response Zone has
been prepared to meet this objective and if implemented will provide reduced flood risk as the area is progressively redeveloped with site and floor levels that take into account current flood modelling.

1.2 Site and Locality Description

As identified above this amendment only proposes the introduction of the Rapid Creek Flood Response SU zone provision to the NTPS with subsequent amendment(s) then required to include specific properties within this SU zone. The properties that will be considered for inclusion in the zone are set out in the DMSAP, Residential Areas Plan (P12) as Concept C. A copy of this plan is below. These properties primarily front Rapid Creek Road in the suburb of Millner, extending to adjoining properties in side streets and across Trower Road to the north.

The lots are currently within zone SD (Single Dwelling Residential) as are the majority of lots within the immediate locality. Development in the area is characterized by single residential dwellings on lots in the range of 700m² to 1200m² with direct street frontage and access. Rapid Creek Road provides the main vehicle access in the area, linking to Trower Road. Lots are also served by a regionally linked pedestrian path network between the local/regional commercial centres, public transport routes and extensive open space associated with Rapid Creek and nearby coastal foreshore. The area is generally fully developed and has the character of a well-established residential area.

The subject area has experienced a varied level of exposure to flood impact in previous events from inundation of property, impacting on dwellings and access. Further information on past flooding and predicted future potential impacts are contained in the flood reports referenced in 1.0 above and the DMSAP Needs Assessment (April 2016).
2 Description of Proposed Amendment

The objective of the Rapid Creek Flood Response Specific Use (SU) Zone is to encourage redevelopment of private residential properties that remain within mapped risk areas for riverine flooding and primary storm surge to mitigate that risk in a manner that improves safety and integrates with surrounding development.

Concept C of the DMSAP Residential Area Strategies sets out a series of objectives and acceptable responses for the future development of this area. In summary these support the redevelopment of the subject lots at an increased density up to that applicable under Zone MD. This is subject to any development mitigating the flood risk to that property, reducing any associated risk to residents and the community, integrating redevelopment with surroundings and ensuring development outcomes are consistent with the policy intent.

These objectives and acceptable responses are given effect in the proposed Rapid Creek Flood Response Specific Use Zone to be introduced by this amendment. A copy of the consolidated zone provisions is at Attachment A, with an explanation of these below. The proposed SU zone complies with the policy of the DMSAP with the exception of Objective C.5 which relates to the provision of safe evacuation paths for all residents. NT Emergency Services (NTES) has since advised DIPL Land Development that it is not supportive of compliance with this requirement for public safety reasons and the SU zone is consistent with this advice.

The amendment proposal also includes the introduction of the Rapid Creek Flood Study Update – Flood Modelling Results Rev 6, Jacobs 04/04/2018 (Attachment B) as a Guideline document to the scheme under Clause 2.8.

2.1 Rapid Creek Flood Response SU Zone provisions

This section identifies the proposed SU zone provisions and provides an explanation of the objective and operation of the clause.

2.1.1 Application of the SU Zone

The proposed SU zone text provides that:

“The zone does not currently apply to any lots“

The implication of this is that for a parcel of land to come under the zone and be subject to the zone provisions a rezoning of the land will be required from SD to this SU zone on the NTPS maps. This does not form part of this amendment and is a matter to be initiated by individual or groups of landowners to come into effect following establishment of this zone. Those properties that will be considered for rezoning to this SU zone are set out in Concept C of the DMSAP Residential Area Strategies.
2.1.2 Clause 1. Zone Purpose

“The purpose of this zone is to facilitate re-development for residential purposes in a manner that:

a) mitigates the 1% AEP riverine flooding and storm tide risk to proposed and existing development;

b) reduces risk to the community and improves resident safety during a flood event;

c) provides for a range of housing options to a maximum height of two storeys; and

d) the scale, character and architectural style of infill development should be compatible with the streetscape and surrounding development.”

This zone purpose reflects the requirements of an appropriate planning strategy to address the remaining flood risk in the area. It is consistent with Concept C of the DMSAP reflecting identified acceptable responses to the issue. The preparation of appropriate development responses to these objectives is further detailed in specific provision of the SU zone as set out below.

Consistent with the NTPS, as set out in Clause 6.14 ‘Land subject to Flooding and Storm Surge’, the zoning approach adopts a reference to a 1% AEP flood event as the design event which development is required to address.

2.1.3 Clause 2. Land Use

“2. Land subject to this zone is to be used with or without consent in accordance with the provisions of Zone MD (Multiple Dwelling Residential), and is also subject to compliance with the flood risk clauses listed in this zone.”

This clause sets the land use and development potential of land that is to be included in the zone and provides for future development to be compliant with zone MD (Multiple Dwelling Residential). For land within Concept C of the DMSAP and that is subsequently included within this zone, this amends the development potential of the land from that applicable under zone SD to zone MD, although subject to additional conditions responding to the flood potential.

The primary purpose of zone MD is to provide for a range of housing options to a maximum height of two storeys above ground level. Further, the zone provides that infill development should be compatible with the streetscape of surrounding development and that where a single dwelling is proposed on a lot of less than 600m² this is integrated in terms of design and site layout with adjacent development and street infrastructure. In this regard the purpose of the zone and the building scale that is permitted is similar to that for SD development but with a greater range of dwelling types at an increased density permitted.
Table A to clause 7.1.1 of the NTPS sets the dwelling density for zone MD at 1 dwelling per 300m² of lot area. Clause 7.1.2 limits the height of any such dwelling to 2 storey and 8.5m as is common to development in zone SD. Residential setbacks are controlled by Clause 7.3 of the scheme and are common to residential buildings permitted in the SD and MD zone.

Part 5 of the scheme addresses subdivision and provides under clause 11.1.1 that land within zone MD, as would-be applicable to this SU zone, can be subdivided to a minimum lot size of 300m², subject to detailed design requirements also set out in that part of the scheme.

2.1.4 Clause 3. Single Dwelling Development

“3. Notwithstanding paragraph 2 of this zone a single dwelling requires consent.”

The purpose of this clause is to ensure that the development of a single dwelling on land subject to this zone will require a development permit and be assessed against the specified flood protection requirements. As a single dwelling is a permitted use generally within the MD zone this clause clarifies the application of the zone provisions to such development. This clause will apply for any single dwelling development including redevelopment of an existing lot or where a lot within the zone is subdivided in accord with the MD zone provisions.

2.1.5 Clause 4. Flood Protection

“4. An application to develop land must include documentation prepared by a suitably qualified registered and practicing engineer recognised under the National Engineering Register that:

(a) meets the requirement for the minimum finished site level at any point (except required access ramps) to be equivalent to the defined flood height for that site; either the 1% AEP riverine flood level (established under Appendix C of the Rapid Creek Flood Study Update – Flood Modelling Results 2018) or the primary storm tide level, whichever is the highest;

(b) demonstrates via a structural design report that the development will be capable of withstanding hydrostatic and hydrodynamic forces of flood waters impacting on the specific site, and where applicable, is in accordance with the Building Code of Australia requirements for construction of buildings in flood hazard areas;”

Clause 4 generally addresses the requirements of an application for development under the SU zone to ensure that a proposal complies with the site and potential flood conditions. While each application will require a site specific design report the preparation of this will be assisted by flood research and modelling undertaken to date for the area.

Clause 4 (a) will require the finished ground level, or slab level of a non-habitable building, to be at least equivalent to the defined flood height for the property at any point. This will reduce the risk of inundation of a site during a 1% AEP flood event, or lower, and as the area is progressively redeveloped should result in properties being
recognised as flood free. Compliance with this clause will require variable amounts of fill across a site and between sites depending on current development and natural ground levels. While a single defined flood height level is provided for each site minor variations across the site in terms of the finished level may arise where part of a site is already above the flood level. The fill level is also proposed as a minimum level and additional fill to this to obtain a flat site is an acceptable response. This will not however alter the determination of the maximum height of dwellings pursuant to the current scheme requirements. Clause 4 (b) addresses the standards required to be complied with in terms of the method of filling of sites and the retention of that fill.

The defined flood heights for sites as are required to be complied with are referenced in the Rapid Creek Flood Study Update - Flood Modelling Results 2018 report in respect to riverine flooding or available from the Water Resources Division of the Department of Environment and Natural Resources in respect to storm surge flooding.

The clause also acknowledges the need for vehicle or pedestrian access ramps to be below the defined flood level within the property as they slope from the unfilled road reserve at the site boundary to the finished site level.

Clause 4 (c). Minimum Finished Floor Level

(c) “meets the requirement for the minimum floor height of all habitable rooms to be 300mm above the defined flood height for that site; either the 1% AEP riverine flood level (established by the Rapid Creek Flood Study Update – Flood Modelling Results 2018) or the primary storm tide level whichever is the highest - to avoid doubt, this includes the requirement to adapt any retained existing development to comply with this clause;”

This clause addresses the requirement for all habitable rooms in a development, including any existing and retained, to have a minimum floor height that provides a freeboard of 300mm above the defined flood height in a 1% AEP event. The clause refers to the defined flood height of either a riverine flood or primary storm surge, as properties in the north of the Concept C plan (DMSAP) are in a transition area where the storm surge modelling indicates a higher flood level than riverine flooding.

This freeboard requirement provides additional protection for residents that recognises in part both the margin of error in flood modelling and the disturbance to the surface of flood waters that may occur in a flood event. To avoid the requirement for each applicant to undertake a site specific flood modelling exercise the required 1% AEP riverine flood event levels are provided in the Flood Modelling Results 2018 Guideline document. Storm surge levels are produced by the Water Resources Division of the Department of Environment and Natural Resources. Compliance with these levels will require certification through the planning and building process to satisfy the requirement of this clause.

Clause 4 (d). Stormwater Management
(d) “presents a stormwater management plan for the subject site and which addresses the conveyance of any pre-existing stormwater flows from an adjoining or adjacent property to the street or a public drainage system.”

The above clause 4. requirements in respect to site fill have the potential to result in the need for fill on property boundaries abutting existing established premises and/or road reserves. This may impact on the existing flow of stormwater across one or more property boundaries to the public drainage system or road reserve. This clause requires that each application for development will need to be accompanied by a stormwater management plan that addresses predevelopment stormwater flows so that there is no detrimental impact on adjoining properties.

2.1.6 Clause 5. Design Certification.

5. “Prior to site preparation or the commencement of works, a design package certified by a suitably qualified registered and practicing engineer recognised under the National Engineering Register that demonstrates compliance with the requirements outlined in clause 4 of this zone must be provided.”

This clause recognises the staged nature of the planning consent and building process and provides for certified detailed construction designs to address the requirements of Clause 5 to be prepared and submitted following issue of a development permit. This reduces the upfront requirements and costs in the consent process but will still require the provision of a level of documentation at the development application stage that is sufficient to satisfy the Development Consent Authority that the proposal will meet the objectives and specific outcomes of the scheme.

3 Statement of Strategic Intent

The proposal to introduce a new Specific Use zone to address flood risk issues from Rapid Creek for selected properties directly responds to the policy framework of the DMSAP as incorporated into the NTPS. It is also consistent with Part 2 of the planning scheme which addresses the Planning Principles and Framework which the scheme is designed to achieve.

3.1 Northern Territory Planning Scheme

Under Part 4.1, administration of the planning scheme is identified as contributing to the built, rural and natural environment supporting the diverse lifestyle and the social, cultural and economic development of the Territory and promoting, amongst other issues “safe communities”. This underpins the proposed amendment’s primary purpose to encourage redevelopment in the subject area in a manner that reduces flooding risk and thereby increases the safety and resilience of the community.

Part 4.2 of the scheme which relates specifically to the Darwin Region provides for orderly and appropriate development with one of the focus areas being more
compact and higher density development in appropriate locations proximate to facilities and services in new urban areas and on infill sites in established areas. The establishment of this SU zone will provide the framework for an increase in density in residential development in an area that is well serviced and located with respect to community facilities and infrastructure. The area also provides a high amenity environment for such development given the extensive areas of open space in the locality and the outlook available from much of the land identified to be included in the zone.

At this strategic level the proposed amendment is consistent with a number of the objectives of administration of the planning scheme.

3.2 Darwin Mid Suburbs Area Plan

The Darwin Mid Suburbs Area Plan (DMSAP) was included in schedule 2 to the NTPS in July 2016 as a plan pursuant to clause 2.7. This clause provides that determinations under the planning scheme must have regard to such plans and planning concepts and to ensure that a proposed use or development is consistent with them.

The DMSAP establishes future development objectives for residential areas and maps properties affected by riverine flooding and primary storm surge in the Rapid Creek catchment. The Plan further identifies properties as subject to ‘Concept C’ and as sites within a potential area for change and having a Planning Principle of Multiple Dwelling Residential.

Concept C further sets out a series of objectives and acceptable responses for the future development of this area. In summary, these support the redevelopment of the subject lots at an increased density up to that applicable under Zone MD. This is subject to any development mitigating the flood risk to that property, reducing any associated risk to residents and the community, integrating redevelopment with surroundings and ensuring development outcomes are consistent with the policy intent.

While these clauses can be applied to development within the subject area as a result of the inclusion of the policy in the scheme, it cannot override the zoning of the land. Hence this amendment is required to introduce the SU zone and facilitate the flood mitigated development of the land at an MD density. Development under this zoning will then be subject to assessment against the full suite of Concept C objectives as are outlined below.
Objective 1 is addressed through the proposed zone which ensures that future development reduces the risk of flooding in a 1% AEP event. This approach is consistent with the acceptable response as the proposed SU zone also provides that any MD development is undertaken consistent with the performance criteria and standards that apply more generally within zone MD.

As part of the development of this SU zone further flood modelling has been undertaken to evaluate the effect of filling the Concept C subject area to the flood level on land in the locality. These outcomes are published in “Rapid Creek Flood Study Update – Flood Modelling Results (Rev 6 04/04/2018)”. This confirms that the effect of filling of this part of the flood plain will make minimal difference to levels across the flood plain. The zone provisions also identify the need for future development applications to address the management of stormwater to ensure that pre-existing flows from private property to roads or the public drainage system are maintained. This will work in conjunction with standard requirements for the preparation of stormwater management plans for development that would be facilitated by the zoning.
This objective is addressed by clauses 3 and 4 of the proposed zone which are consistent with the identified acceptable responses. Clause 4 requires any application for planning consent to include concept documentation in respect to materials, design, finished fill and floor levels and retention, with clause 5 specifying the requirement for certified design pre construction.

The response to this objective of the DMSAP has evolved since the preparation of the DMAS acceptable responses with a greater emphasis now placed on the implementation of Household Emergency Plans and a NT Emergency Services (NTES) response in the event of an emergency evacuation. This recognises the early warning system now available to residents, a need to manage general public access to the area during a flood event and public safety concerns with encouraging residents to move about in the event of a flood.

This position is reflected in the correspondence from NTES (29/03/2018) which identifies that compliance with objective C.5 is not supported for reasons of public safety. Given this position of NTES, the SU zone provisions do not require the provision of a flood safe vehicle evacuation path as part of development proposals.
Notwithstanding, with any future development in the area under the SU zoning having to achieve minimum floor levels there is a significantly reduced risk of flooding to properties and a related increased public safety overall. Combined with this, the early warning system will enable sufficient notice for residents to activate their Household Emergency Plans and to leave the area if needed, or move vehicles to a flood free area of the road system, if they require to do so prior to flood waters restricting access. It has also been identified that there is a need to restrict public access to roads in the area during a flood event from a public safety perspective. Additionally, the movement of vehicles can be a contributor to flood surface disturbance and potential increased inundation to existing premises not constructed to the required flood level. In resolution of this, the proposed approach is for NTES to manage the emergency response required in the event that evacuation is required.

![Image: Avoid accommodation for vulnerable groups or storage of hazardous materials which could pose a risk during a time of flood.]

This objective is addressed in existing provisions of the NTNS Part 4 which provides specific development requirements for “Land subject to flooding and storm surge”.

![Image: Redevelopment that integrates with surrounding development.]

The acceptable responses to this objective are addressed in existing clauses of the NTNS which provide performance criteria for MD development. The assessment of all applications under the zone will also include these DMSAP policy provisions. In combination this will provide a planning framework that will encourage development that integrates with surrounding development and does not unduly impact on the existing character and residential amenity of the area.

As is demonstrated the objectives and acceptable responses of the DMSAP Concept C are reflected in or not compromised by the proposed zone provisions. As such the amendment proposal is also considered consistent with the strategic intent of the planning framework.

### 4 Servicing

The availability of infrastructure to service the area to which the SU zone would be applicable has been assessed generally through preparation of the Darwin Mid Suburbs Needs Assessment. This identifies that trunk services are sufficient and any
upgrades if required will be incremental and related to services to individual developments. Such service upgrades will need evaluation both during a rezoning process to include a site within the SU zone and in consideration of a development application for a site. The PWC and Local Council are consulted in both of these processes.

In respect to stormwater management from the site this will be detailed as part of any development application with specific considerations to ensure maintenance of existing stormwater flows as required by Clause 4 (d).

5 Conclusion

The proposed amendment will provide for the introduction of the Rapid Creek Flood Response Specific Use Zone to the NTPS. On final approval of this amendment the proposed clauses will form part of the scheme, but will not apply to any land. The Rapid Creek Flood Study Update – Flood Modelling Results Rev 6, Jacobs 04/04/2018 will also be introduced as a guideline document to the scheme. To give effect to the zone, landowner(s) will then be required to make application to rezone their properties to this SU zone. This can be undertaken on an individual or joint property basis.

The proposed SU zone has been developed in accordance with the DMSAP Residential Strategies Concept C and if implemented will meet the objectives of this Concept through provision of flood mitigated redevelopment of the area at an MD density in a manner that integrates with surrounding development.

Approval of the proposal for exhibition is requested.

Attachment A – Rapid Creek Flood Response SU Zone: Amending Text.

Attachment B – Rapid Creek Flood Study Update – Flood Modelling Results 2018; Rev 6 04/04/2018, Jacobs.

Attachment C – Correspondence from A/Executive Director NTES, 23 March 2018.