

INGELSIDE PRECINCT – A Sustainable Future.



This project is “cute” but it looks like an under-development, especially if compared to the proposal near Cooks Cove near Sydney Airport . From Penrith to Greater Parramatta / Olympic Park, and Burwood there is new developments along the train line. In Burwood they have apartment tower of 45 storeys and houses in the surrounding suburb. Penrith has a large development of 5 or 6 storey near the Train Station.



INGELSIDE compared to Frenchs Forest Town Centre with its proposal for 12 storey apartment towers in the TOWN CENTER “cluster” (and then medium density housing surrounding it) is hardly a “ Priority Growth Centre “ but an “ under-development “ .

THE YES ANSWER (promote URBAN GROWTH)

= review Precinct Plan

THE NO ANSWER (promote the RURAL LANDSCAPE feel , even if density increased)

= review Precinct Plan

THE Rural Landscape PLAN

= review Precinct Plan

If the RURAL LANDSCAPE has Heritage Value, and Community Farm (like in Blue Mountains) has merit, then the INGELSIDE PRECINCT PLAN needs a review.

The WALTER BURLEY GRIFFIN landscape design of the Sandstone Hillside of Castlecreagh in Sydney may be an “ inspiration for INGELSIDE “ with roadways cut into the landscape, and buildings designed to “ blend “ with the landscape (it may use modern earth-covered buildings) .

The alternative RURAL LANDSCAPE PLAN “ SUSTAINABLE FUTURE “ concept, could include more RURAL LANDSCAPE features. HOW ?

In the Adelaide Hills, in the 1980's or before a “ valuable farm-land “ was threatened with URBAN RE-ZONING so they used “ Development Off-set “ to re-locate the URBAN DEVELOPMENT to Inner Adelaide.

So in INGELSIDE to preserve the RURAL LANDSCAPE a “ development off-set “ is an option to “ apply “. It transfers the “ UP-LIFT RE-ZONING “ of 3,000 (Circa) to Town Centre areas north of Narrabeen Lakes (the city limit in Cumberland Plan era when Sydney had a Population target of 2 million people. Now the target is 8 million people, an 80 % increase in population on current levels. So increasing the “ HOUSING SUPPLY “ in INGELSIDE, and the AFFORDABILITY SOLUTIONS is important.

But as the RURAL LANDSCAPE “ VISUAL ASSESSMENT report suggests the RURAL LANDSCAPE is important, but somehow “ ill-defined “.

The Example on internet of Winery Buildings in West Australia's Margret River area, and Winery Buildings in New Zealand, including the CLOUDY BAY winery buildings show what can be done in a rural landscape.

Of 704.8 hectares slated to comprise this plan, Table 1 from the *Ingleside draft land use and infrastructure strategy* document shows the land use outcomes identified in the Structure Plan, and states that:

"...• 40% of the total Precinct area is proposed for development;
• 30% of the total area is proposed for conservation; and
• 30% of the area is unlikely to change, and any development will be subject to standard development controls. ..."

The Housing Developments are slated to be, Houses on Larger lots (with 2,000m² min. lot size - 50 hectares allocated to yield 250 dwellings, Houses (12 to 13 dw per ha - 550m² average, maximum height 8.5m * - 123 hectares allocated to yield 1,530 dwellings and Low Rise Apartments/Townhouses (25 to 27 dw per ha - 300m² average , maximum height 10.5m * - 63 hectares allocated to yield 1,580 dwellings. A further 36 dwellings are slated for the Neighbourhood Centre (maximum height 11m) for which 1.8 hectares has been allocated. The estimated population for these 3, 396 new homes is 9000 people.

The small lot, attached and semi-detached housing are slated to be located around activity nodes and public transport routes. The larger lots will adjoin areas of heritage and environmental importance.

.

The YES answer.

If we compare Cooks Cove area with INGELSIDE, we find COOKS COVE has better regional transport, and Warriewood Valley Land Release in 1990 described the Transport on Northern Beaches as Lacking in Public Transport, but with Ferry Service at Manly.

The “ SELECTIVE “ use of mid-rise apartment towers, possibly with a landscape feature / vertical garden / horizontal garden feature on many levels can “ lower the visual impact of a GLASS TOWER “ set in the Hillside.



Instead of Single houses, consider stacking house size apartments vertically from 3 storey high to 6 storey, then consider Towers above 7 storey high. This concept has been suggested in past as a “ sustainable housing way to increase “ Communal Open Space “ in the Neighbourhood.

Finding “ FARM BUILDING “ types that “ blend into “ multi-dwelling structures is a “ BIMBY “ way to have local design culture, instead of “ Project Home Standard Answers “ .

Using the BIMBY model of the PRINCE/s FOUNDATION is a way to have “ local flavour “. So Consider the Riverview / Lane Cove area HOUSING TYPES along site some “ larger lot “

examples.



A tall “green apartment tower” is also an option as it is not on the coast, If Frenchs Forest can have a cluster of 12 storey towers, why can’t INGELSIDE share the “density” with its own cluster of GREEN TOWERS .

The other option is to consider GREEN ROOF housing. This could have Ecologically Significant plants growing on the roof. This “GREEN ROOF” could assess various sub-sites in INGELSIDE.

The Tasmanian Luxury Resort designed by Aspect Studios of Sydney has a “GREEN ROOF” with courtyards carved out below. So it is possible to have a CANOPY of grasses, Native Orchids and a building below (even Pittwater Council library building uses that technique) . This may overcome the “LOST LAND” due to the NATIVE ORCHIDS in the Ingelside area.



A large green roof will cover most of the building as an extension of the land behind. Courtyards are set into the roofspace.

The village green is intended as a community meeting place and for outdoor events such as markets and performances.

“Working together with the project team we’ve created a genuine world-class destination, a place for both locals and visitors, a destination we hope will be a wonderful asset for the people of Tasmania,” Mr Silvester said.

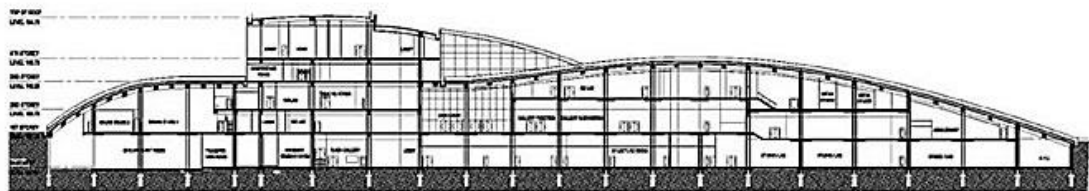
Aspect Studios director Sacha Coles said the project was a tremendous opportunity for the region. “With its plunging cliff lines and rolling fields, it defines the local character of place and is a unique emblem for the sublime beauty of Tasmania,” Mr Coles said.



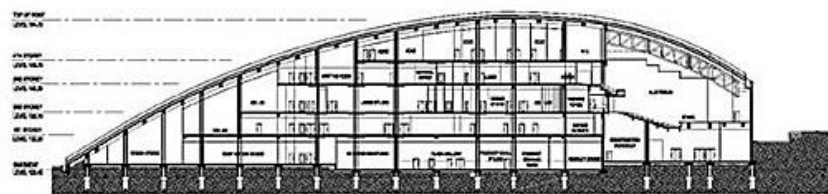
The other solution is to allow increased height in NON-Orchid areas. (This logic was used at the Carton United Brewery Site opposite UTS tower Broadway, where the building height is up to 35 storey, but it has preserved a heritage part of the Brewery Building)



The Nanjing Technical University Building with its GREEN ROOF could be inspiration for a “FARM Inspired” building that is a multi-level, apartment complex “



SECTION A-A



SECTION B-B



The Development Off-Set may be apartments in Ingelside “ created with a higher site density “ , and possibly part “ earth-covered “ and part normal apartment (overall 6 storey high but looks like 3 storey high) .

AFFORDABLE HOUSING

The Greater Sydney Commission's draft North District Plan has mandated a target of 5% – 10% of floorspace for affordable housing, while page 15 of the *Ingleside draft land use and infrastructure strategy* document states "*The Department of Planning and Environment and Council are committed to the providing affordable housing within the Ingleside Precinct to support the anticipated increase in the number of key workers required over the next 30 years.*"

Key workers are identified in the document as teachers, police officers and hospital staff; those who method, costings or subsidies that may apply of the 'affordable housing' is yet to be determined: do far more for far less, wage-wise.

The form,

"Investigations into methods for delivering affordable housing are continuing. Further work will determine the amount of affordable housing that can be accommodated within Ingleside Precinct. The findings of this work will be made available during the statutory public exhibition." page 15, *Ingleside draft land use and infrastructure strategy*.

There is a need for affordable housing in the area, even one middle aged guy told me at an exhibition event for Ingleside.

Then I read Rob Stokes MP's talk about negative gearing. Housing Supply is not the sole answer to "affordable housing" solutions, it seems better transport is part of the answer say Reserve Bank of Australia. Ingleside has "defective public Transport" that could be improved with a regional "improvement plan".

Providing a Future Regular Regional Bus on Mona Vale Road is a likely option, and allowing 2 car lanes + Bus Lane on Mona Vale Road. If population grows 80 % (see Daniel Bennett on Sydney Green Grid). Then consider how a future elevated Light Rail can operate on the Mona Vale Road Corridor.

The other is a TRAIN STATION linked to Frenchs Forest and Central Coast. You may laugh, until the "30 minute city" vision of Malcolm Turnbull PM and Greater Sydney Commission is re-imagined to include Central Coast and Woolongong. Faster Trains to outer suburban areas can reduce travel times, without increasing CO₂ emissions from car travel. Imagine a 1 hr 45 min journey cut by 45 mins or more ?

1. This differs from Sydney Alliance who suggest a target of 30 %, and Inner West Council that has a target of 15 % in new construction projects.
2. *Increasing the URBAN DENSITY to 10,000 new dwellings is an option to consider, and that could include "extra Urban Density" at Ingleside. This may help pay for the Public Transport Service (Light Rail or Train). The LIGHT RAIL option may be cheaper, and should be considered in detail on the Chatswood to Frenchs Forest route , and Mona Vale Road Route to North Shore / North-West*

1. The WATERLOO Social Housing site, that has a proposed 10,000 new dwellings concept for the “re-birth” of the Waterloo area. It comes complete with a new TRAIN SERVICE to the location, which is less than 400 m from REDFERN STATION. This could be used as a potential “ANSWER” for FRENCHS FOREST “Town Centre. It has a proposal to be 30 % Social Housing, and 70 % normal . So in the Frenchs Forest Site the mix could be 15 % social, 15% affordable, 15 % hospital housing (patients, family visiting), 15 % HOSPITAL STAFF. This is “theoretical” but in Britain affordable housing can be 50 % of a project.
2. The Height Limit could be increased to 25 storeys, using the REDFERN example of HIGH RISE located adjacent to terrace housing without a buffer zone of “green space” , being OK ?



3. But in a "rural setting" this may be inappropriate unless it was a "GREEN TOWER" design. The "image" could be part "Social Housing", part "affordable housing" and part "apartment hotel" and part "market price apartments". This mix has worked well for a Hospital Site re-development in Surry Hills for over 20 years. The building Design is different in Surry Hills, but the social mix has worked OK, it even has Crisis accommodation for Youth, and Women in Crisis.
4. Using an Earth-Covered Building design, so the 10.5 m high structure is covered with earth (Green Roof) could allow "environmental Land" to be "created" with social housing below. This may lower the "LAND COST" and so the "affordable housing" construction costs.
5. A separate alternative is look at the Medium Density Housing Code, and how it could be used to provide an extra "3,000" plus dwellings in the Ingelside area. Using the "Green Roof" (Earth-Covered building technique may give the overall area a "sustainable vision" more like a RURAL LANDSCAPE ... which is the Current Land Zoning.
6. The "affordable Housing" component is targeted at about 15 % plus, in Inner West Council area.. The hospital staff could be provided "subsidised housing" as part of the job. The "residential accommodation" could be SPACE for PATIENTS and FAMILY FRIENDS to stay. As there is a Hospital at Mona Vale with a "Private / NGO expressions of Interest" it could be relevant to Mona Vale and Frenchs Forest, especially if good public transport connects Ingelside to Frenchs Forest.
7. Affordable Community facilities may also be important. In past Ingelside area had disabled horse-riding. So setting aside space for "therapy Gardens / Community Garden/ Community Farm" can be considered as part of the "RURAL LANDSCAPE" image.
8. If "Farm Building" style can have "taller building" adapted to housing spaces then "relax the 10.5 m or 8.5 m height limit, so it is easier to provide "affordable housing solutions". In Denmark, they have converted an old silo into Housing Apartments



If the White is inappropriate, then consider Vertical Gardens and Sandstone Texture.,

HERITAGE TRACTOR FARM and COMMUNITY FARM (City Farm)

9. To achieve this the Dwelling mix may be changed, to include greater “ density “ to have more min. lot size - 50 hectares allocated to yield 250 dwellings, Houses (12 to 13 dw per ha - 550m² average, maximum height 8.5m * - 123 hectares allocated to yield 1,530 dwellings and Low Rise Apartments/Townhouses (25 to 27 dw per ha - 300m² average , maximum height 10.5m * - 63 hectares allocated to yield 1,580 dwellings. A further 36 dwellings are slated for the Neighbourhood Centre (maximum height 11m) for which 1.8 hectares has been allocated. The estimated population for these 3, 396 new homes is 9000 people.

By changing thmmunity Farme allotment design more space for a Heritage Farm, Community Farm, Therapy Garden may be available. In Inner West is CALLAN PARK that once was a working farm, and then a Mental Hospital with farm paddocks. In Blue Mountains is Heritage Gardens in Leura, and Community Farm in Katoomba area.

In North-East USA is a Heritage Farm that is part of a Rural Community. It has a Community Farm Lot, Tractor Farm and space to grow Hops for Local Beer makers.

So to do this “ HERITAGE FARM “ project takes space . The benefit can be spread to residents of Northern Beaches as a whole, not just the people of Mona Vale.

So consider if the Density can be changed to emphasise RURAL FARM and Horse-riding spsce, etc.

Consider the 123 hectares yielding 1,530 dwellings can be done in 10 ha to 23 ha space, and 100 hectares is “ shared space RURAL FARM / HERITAGE FARM SPACE,

This is what happened in USA, and it got support from the National Organisation that “ protect Public Lands in USA “ . They rejected the “ Sports Fields Land-Use “ and instead supported a HERITAGE FARM that was near the river, so some of the land was “ conservation land “ and the rest was a “ HERITAGE FARM “ .

Consider the 63 hectares – that yields 1580 dwellings. Will the dwelling “ alternative design “ fit into 10 hectares or 13 hectares ? . The remaining 50 hectares can be a RURAL LANDSCAPE , TRACTOR FARM and/or , “ HERITAGE or MODERN “ GLASS HOUSE “ Cultivation.

Consider the 2 hectares for Neighbourhood Centre. Will the “ Converted Silo “ example be appropriate and house 36 dwellings. Could another “ Converted Silo “ or two more be “ appropriate “ ?

Consider Earth-Covered Housing to increase “ Housing Density” but retain the Landscape, and space for Native orchids to grow. This TASMANIA example is targeting the LUXURY RESORT and “ Farmhouse Cooking “ visitor.



The NO answer = Low DENSITY

= HERITAGE TRACTOR FARM

In this model the urban proposed areas in INGELSIDE are “ development off-set “ to a Series of Town Centers north of Narrabeen Lakes which “ purchase” the “development off-set” and the “ vendors “ agree to preserve the Farmlands as Working Farm / Community Farm / Hobby Farm Lands in INGELSIDE. Some Town-Planners may see it as Bio=diversity Off-set in reverse .

. The preservation of VALUABLE Farmland (vineyard lands) threatened with urban re-zoning in Adelaide Hills has been preserved by a “ development –off-set “ of the “ urban zoning value “ elsewhere. This dates back to 1980’s .A Sydney based University Town Planning Expert can explain how it is done.

This may require a new MONA VALE PLAN that includes TALL TOWERS to the edge of TOWN ? and North Narrabeen ? Or it can consider the Medium Density Code.

In this in INGELSIDE option the SUNLAND sites (Ingleside + Warriewood Valley) are assessed for suitability as Bushland Habitat. To achieve this outcome a “ development off-set “ can be created outside of INGELSIDE (and if increased heights are allowed in the Precinct) .

TRANSPORT

ACTIVE TRANSPORT

To encourage “ sustainable transport “ the use of horse is included in the “ local area” transport so the local shops have a place to “ tie up “ the horse.

Bicycle pathways are thru the streets, or streets are “ shared Pathways “ so are slower moving laneways.

ELECTRIC CARS and BUSSES and LIGHT RAIL



– Electric Cars and Busses are an option to consider, as in Seattle, USA the local Govt is buying 1500 electric cars in 2017. They have a Light Rail network that is 80% elevated or in subway and 20 % on street.

The “ Sustainability Consultant Report “ supports the “ Charging Station “ for Electric vehicles (that may include visiting electric vehicles) .

If a train line was “ too expensive “ to Northern Beaches then consider a LIGHT RAIL LINE from Chatswood to Frenchs Forest to Mona Vale via Mona Vale Road. It may also consider a route to St Ives and Gordon / Hornsby.

BUS SERVICE - extending the B-line to INGELSIDE

RMS instead talks about a 2 lane each way widening of Mona Vale Road. The “ safety lane could be widened to be a Priority Bus Lane from the start, making the solution more “ resilient “ from the start. This uses Northern Beaches Council’s support for EAST-WEST BRT on Warringah Road to Mona Vale Road. The RMS report on Mona Vale Road done years ago predicts it will need a regional bus operating between Mona Vale area and Macquarrie University / NorWest Business Park area.

As Northern Beaches Council claims that Frenchs Forest area needs a East-West Bus Rapid Transit, so for INGELSIDE consider extending the B-line from Mona Vale to Ingelside (with potential Commuter Car-Park Space (Large ?) . Also a feeder bus – cross regional route like the 440 between Bronte and Rozelle. (e.g. Ingelside to Palm route going at regular intervals. The 440 runs every 20 mins or 30 mins).

TRAIN STATION at INGELSIDE

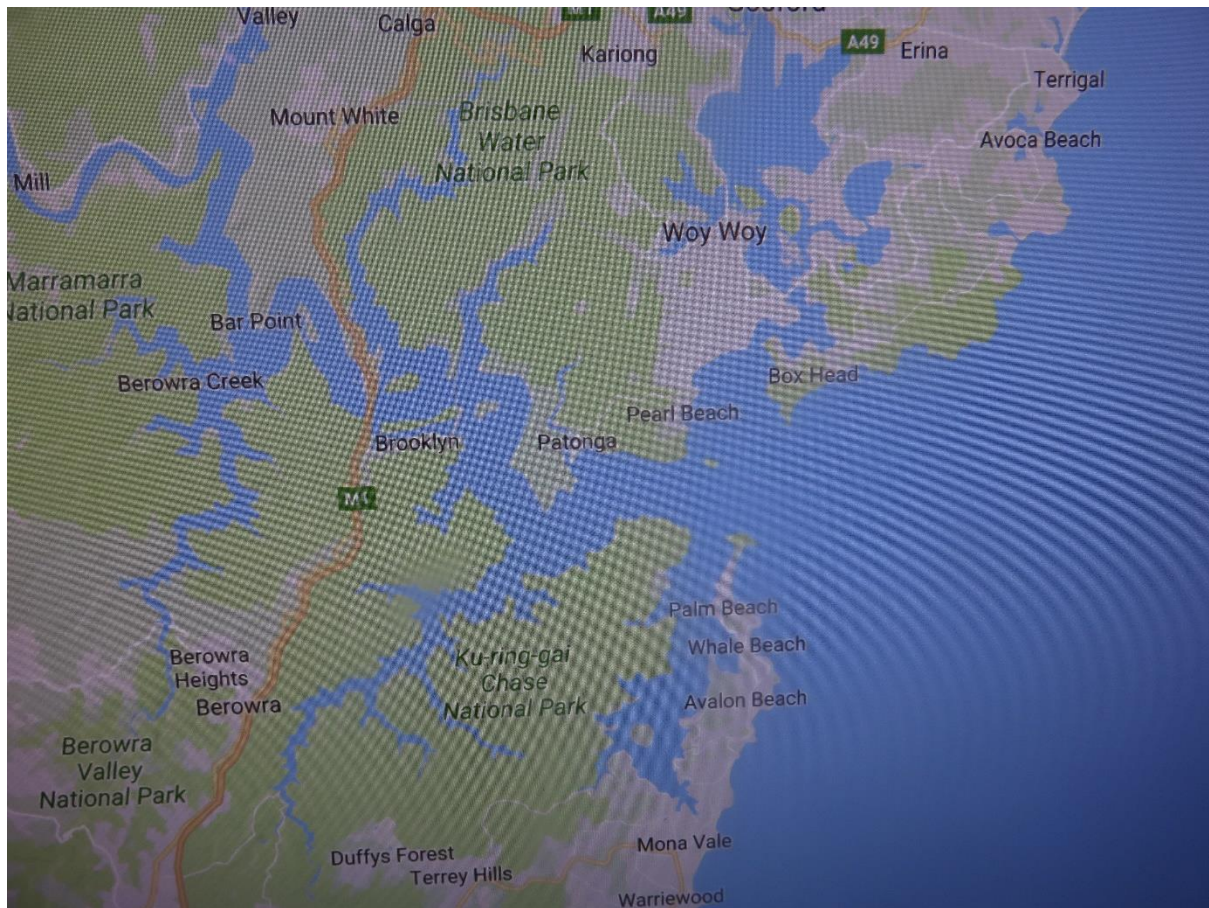
As Jason Falinski MP (Federal MP for Mackellar) has promoted the idea of a RAIL LINE to Northern Beaches to Frenchs Forest, the potential capacity suggested is 45,000 people per hour. This would provide a diversion / alternative to the MOSMAN car route that takes just 2,000 cars per hour, over 4 car lanes.

So to have a 45,000 passenger load, the TRAIN LINE is extended from Chatswood to Frenchs Forest to Ingelside Town Centre. This is part of the Electric Train concept of John Bradfield. This give the option of Higher Density Housing at Ingelside. The TRAIN creates greater capacity to move people long distances with a sustainable electric powered vehicle.

The need to extend the Train Line is seeking a reliable 45,000 passenger load .

Next is the OPTION of extending to Central Coast via a bridge between Northern Beaches and Central Coast (with a TUNNEL option a technical alternative) .

Extending to CENTRAL COAST is EXPENSIVE, so it may not happen in the near future. But if “ 30 minute city “ is important then FASTER REGIONAL TRAINS may be part of the “ SOLUTION “ .



The Obvious Route North is near the existing Motorway or Train Line near Brooklyn.

But the ability to connect via Northern Beaches with a bridge (from WEST HEAD to PEARL BEACH area) or long tunnel will be a challenge.

The ability to reduce tunnel costs in the project overall may influence the design. The M1 motorway has gone thru the BUSHLAND near Berowra, so the challenge is to “ travel thru Bushland to West Head “ then bridge to Central Coast (or tunnel)

The TRAIN to CENTRAL COAST via NORTHERN BEACHES has Affordable Housing (Comparison) advantages, and travel-time closer to the “ 30 minute city “ vision . Now the trip from Central Coast can be 1 hour 45 minutes by train.

ECOLOGICAL CORRIDORS and GREEN INFRASTRUCTURE

funding thru Northern Beaches Council area

Native wildlife advocates have noted that the draft plan, at '3.8.3 Proposed Mona Vale Road fauna crossings' per *Ingleside draft biodiversity assessment part c* that the proposed fauna crossings will be constructed at the same time as the road upgrades:

- Mona Vale Road East - RMS proposes widening the existing culvert between the Katandra Wildlife Sanctuary and Ingleside Chase Reserve to improve fauna connectivity across Mona Vale Road East. The exact number and design of crossings will be determined by RMS with advice from biodiversity specialists during development of the concept design.
- Mona Vale Road West - The proposed road upgrade to Mona Vale Road West would provide a fauna connection between the Ku-ring-gai Chase National Park and Garigal National Park at several locations. RMS is investigating a fauna overpass and other options to facilitate movement within the project area. The proposed location for the fauna overpass is to the east of Kimbriki Road and the underpasses would be distributed along the length of the project. The exact number of crossings will be determined by RMS during the development of the concept design and will be exhibited with the environmental assessment.

In INGELSIDE Precinct there should there be a large Habitat Area for Koala and other native fauna ? as an extension of habitat for the Barrenjoey Habitat (which is an unsustainable habitat size), The Population is Listed as Threatened with extinction in early 1990's.

SHOULD fertile lowlands (Warriewood Valley area ?) have provided extra habitat in 1990's instead of URBAN DEVELOPMENT ZONING ???? ????

The Bayview Golf Course may be assessed for Koala, and other Native Fauna habitat, instead of being converted to " spare land " to Housing Lands.

The forest destruction has occurred since the 1920's in the Pittwater area. Aboriginal Archeological records of Angophra Reserve in Avalon prove the variety of native fauna that once was available in the area.

This may allow the " creation of additional native fauna habitat for Koala " with special attention to " nutrient rich water supply "

But as INGELSIDE Area is currently Rural Landscape, maybe a " development off-set " is a preferable " Landscape Solution " with the " off-set " being created in the URBAN area of Northern Beaches (north of Narrabeen Lakes) .

The NSW CHIEF SCIENTIST REPORT – on declining population of Koalas 2016.

. Key elements of a whole-of-government koala strategy should be to:

- prioritise data gathering and research about populations, habitat and threats, including the cumulative impacts of multiple threats, to inform better planning and management decisions*
- review and align the various legislative and management arrangements to ensure improved outcomes for koalas across different land uses and tenures*
- work across tenures to identify and implement on-ground actions that improve connectivity and resilience against threats*
- identify incentives for best practice new development and ongoing land use in all cases where koala populations may be adversely affected across tenures, industries and land users*
- establish a framework for on-going coordination and cooperation of land managers, policy makers, researchers and the community to deliver the defined actions.*

While many of the recommendations in this report aim to understand and address threats to koala populations, it is also important to support those who respond when the threats cannot be mitigated. Fauna rehabilitation groups play a critical front-line role in assisting the recovery of individual koalas, most commonly injured by car strikes, dog attacks or fire.

Successful implementation of a NSW koala strategy should lead to the following outcomes:

- we will know which koala populations have the potential for long term viability*
- we will have evidence that threats to these populations have been identified and mitigated*
- the community will feel confident that new development and ongoing land use will not threaten key koala populations*
- our scientific knowledge of koala populations, dynamics and health will be substantially increased*
- the number of koalas will become stable and then start to increase.*

A NSW koala strategy should provide clear benefit to key koala populations in NSW.

However, in identifying and protecting koala habitat and managing key threats, this strategy will also benefit other native species and NSW landscapes more broadly.

RECOMMENDATIONS

This review makes 11 recommendations to inform the development of a NSW koala strategy.

Recommendation 1

That Government adopt a whole-of-government koala strategy for NSW with the objective o

stabilising and then starting to increase koala numbers.

Recommendation 2

That Government initiate a program to improve data on the number, location and occurrence

of koalas in NSW, including trends over time, taking advantage of new sensor and communication technologies and data analytics within 12 months of receipt of this report.

Recommendation 3

That Government publish a state-wide predictive koala habitat map within three years of

receipt of this report, with immediate priority given to improving coverage of the north coast.

Recommendation 4

That Government improve outcomes for koalas through changes to the planning system.

Recommendation 5

That Government improve outcomes for koalas through the Biodiversity Conservation Bill

and associated Regulations.

Recommendation 6

That Government investigate models for guiding and incentivising collaborative best practice

for new development and ongoing land use occurring in areas of known koala populations

across tenures, industries and land users.

Recommendation 7

That Government agencies identify priority areas of land across tenures to target for koala

conservation management and threat mitigation.

Recommendation 8

That Government, through the Office of Environment and Heritage, convene two symposia

within 12 months of receiving this report: one for scientists active in koala research and land

managers to develop a koala research plan; and one focussed on koala rehabilitation to

identify actions to optimise the delivery of and support for the network of koala rehabilitation

groups and carers.

Recommendation 9

That Government establish the Australian Museum as a preferred repository for koala

genetic samples in NSW, and all data and metadata associated with these samples should

be deposited into the SEED Environmental Data Portal (extended if necessary to include flora and fauna).

Recommendation 10

That Government facilitate the exchange of information among land managers, local government, the research community and the broader community.

Recommendation 11

That Government draws on knowledge and shares information with local community members through a program that supports localised engagement between liaison people and residents and industry.

The majority of the Precinct is zoned Rural Landscape (RU2) under Pittwater Local Environment Plan (LEP) 2014, which has a range of permissible uses. Ownership is a mix of public and private ownership, with approximately one third in State Government ownership.

The Minister for Planning and Council have agreed to undertake a Precinct Planning Process for the Ingleside Precinct to confirm development potential and to establish development controls to enable development consistent with that potential.

The “paper trail” Includes a Threatened Species Listing in 2017 for Koala and Squirrel Glider that is perfect alibi, or a SCAM.

To overcome the SCAM a “development Off-set” can be used to convert SUNLAND’s Urban Lands in Ingleside and Warriewood Valley, to provide (first assess suitability) as additional Native Fauna Habitat area (for Koala)

In Phillip Island, Victoria they converted farmland to KOALA HABITAT. The Koala’s of Phillip Island provided the “stock” that allowed Victoria to go from near Extinction in (Circa) 1910 to a more sustainable population on Mainland Victoria, including the Otway Ranges.

The Development Off-Set may be apartments in Ingleside “created with a higher site density”, and possibly part “earth-covered” and part normal apartment (overall 6 storey high but looks like 3 storey high) .

APPENDIX ::

Sydney’s population is forecast to increase by 80 per cent by 2054, with an additional three million people living and working in the metropolitan area.

As population density increases, our challenge is to shape the built environment so as to ensure that Sydney remains one of the world’s most distinctive and liveable cities.

In acknowledging that green space is a key hallmark of liveability, the Office of the Government Architect (OGA) proposed the creation and consolidation of a network of high-quality green areas that connect town centres, public transport networks and major residential areas. Now known as the Sydney Green Grid and regarded as an integral part of the Metro Strategy and most recent District Plans for Sydney, this network aims to anchor sustainable development while maximising quality of life and well-being.

Although Sydney has many green and water enriched spaces, what is missing – and this is the aim of this project – is an overarching schema that approaches them in a connected way. Success in doing so will ensure that their contribution to our quality of life, the environment and the economy are maximised, rendering a working-whole that is far greater than the sum of its parts.

Some places are already well served, and here the task is making sure it remains of high quality and is managed effectively. Other places suffer from a lack of green space, and here we need to extend the current network and create new open space where it is lacking.

Green infrastructure

The Green Grid is a green infrastructure, design-led strategy that includes the full range of open spaces from national, regional and local parks through the harbour, ocean beaches, wetlands, rivers and creeks, to playgrounds, playing fields, golf courses and cemeteries.

Interconnected linkages are fostered within the wider public realm through enhancing creek corridors, transport routes, suburban streets, footpaths and cycleways. The Green Grid is therefore an open-space interconnecting network that will keep the city cool, encourage healthy lifestyles, enhance biodiversity and ensure ecological resilience.

When we see green infrastructure as an asset, as integral to Sydney's metabolism as its roads, rail lines and storm water pipes, and valued for the whole range of social, health, environmental, economic and educational benefits it brings to Sydney, the importance of an integrated approach to management, enhancement and extension becomes paramount. It's an infrastructure asset that requires the same kind of protection, investment and innovation we afford more familiar types of built infrastructure.

Green infrastructure has an increasingly important role to play as we face the challenges of population and urban growth on the one hand and climate change on the other. Well-designed and planned green infrastructure will help absorb flood water, cool the urban environment, clean the air, provide space for local food production and ensure the survival of Sydney's fauna and flora as well as providing space for recreation, sport and leisure.

The Sydney Green Grid underscores the value of green and open space as pivotal to the choices we make when promoting economic growth, health and well-being. As a network, it will provide links and connections between places, encourage walking and cycling, highlight landscape and heritage, and support local economies. By providing informal places for people to visit and interact, social capital is both created and enhanced. Future investment in parks and recreation will play a vital role in Sydney's ability to attract business and create jobs.

How was the Green Grid initiated?

Inspired by the All London Green Grid, the OGA undertook a pilot project in Parramatta to assess the provision of open space at regional, district and local levels. The OGA interrogated open space deficiencies and determined where additional open space was required in order to ensure equity of access. In so doing, the office proposed an interconnected network of open space for Parramatta.

The OGA looked at the creek corridors and illustrated how this network could be used for flood management as well as for walking and cycling. Furthermore, the office examined the street networks and potential infrastructure corridors such as light rail, and suggested how the unique heritage components of the city could be integrated into the living experience of Parramatta.

The office then demonstrated the value of applying this thinking at the subregional and metropolitan scale. Close collaboration with the NSW Department of Planning & Environment and the Greater Sydney Commission helped to create an evidence-based, open-space audit across

Metropolitan Sydney as a baseline for exploring opportunities to create an interconnected Metropolitan network that will support the projected population, housing and employment targets.

The Green Grid posits an economic case for investment in green infrastructure beyond the provision of open space for recreation alone. Consequently, it is now understood by many arms of urban planning and design in both the public and private realm as a value proposition, where benefit outweighs cost by raising the overall quality of investment in both the open space and investment alike.

As similar initiatives are happening around the globe, the OGA benchmarked its ideas against thinking from around the world, where the benefits for example from reduced flood risk, improved health outcomes and increased ecological resilience are being quantified and where the concept of green infrastructure is becoming mainstream.

In Chicago, for example, greening only a small percentage of the city's rooftops has significantly reduced air pollution. Chicago estimates that this investment could result in avoided health costs of \$29 million to \$111 million annually.

In 2011, Philadelphia created the Green City Clean Waters program - a 25-year, \$2.5 billion plan to protect and enhance the city's catchments by managing storm water with innovative green infrastructure. The city estimates that using green infrastructure in lieu of traditional approaches could save \$8 billion over the life of the program.

Based on Sydney's unique character, the OGA aims to articulate a clear and compelling economic rationale for future investment in green infrastructure. The research uncovered a number of cost/benefit analyses, but as they are limited in scope and although well intended, the implementation is fragmented.

Sydney's current parks and open spaces and other green features such as street trees are managed by over 42 different public authorities and agencies. This results in an approach to planning and management of a suite of assets that does not fully realise the potential that could be harnessed by a more integrated approach. To successfully create green infrastructure at the landscape scale, we must transcend conventional 'silo' modes of thinking within government and pursue an approach to planning, design and implementation where key agencies work together to support a common goal.

The Greater Sydney Commission is actively promoting and advocating the Green Grid across government, influencing planning strategies, local government open space network plans, and urban transformation precincts. This strategy needs to be owned by many.

The delivery of the Sydney Green Grid vision will be a complex and challenging task. It is a long-term, evolutionary process that will require bipartisan support at all levels of government – national, regional and local. It is important that the strategic Green Grid projects identified in the District Plans can be delivered through the planning and development process, beginning with appropriate policies by local government in their Local Environment Plans.