

PAST

PRESENT

ECO-SYSTEMIC
VISION

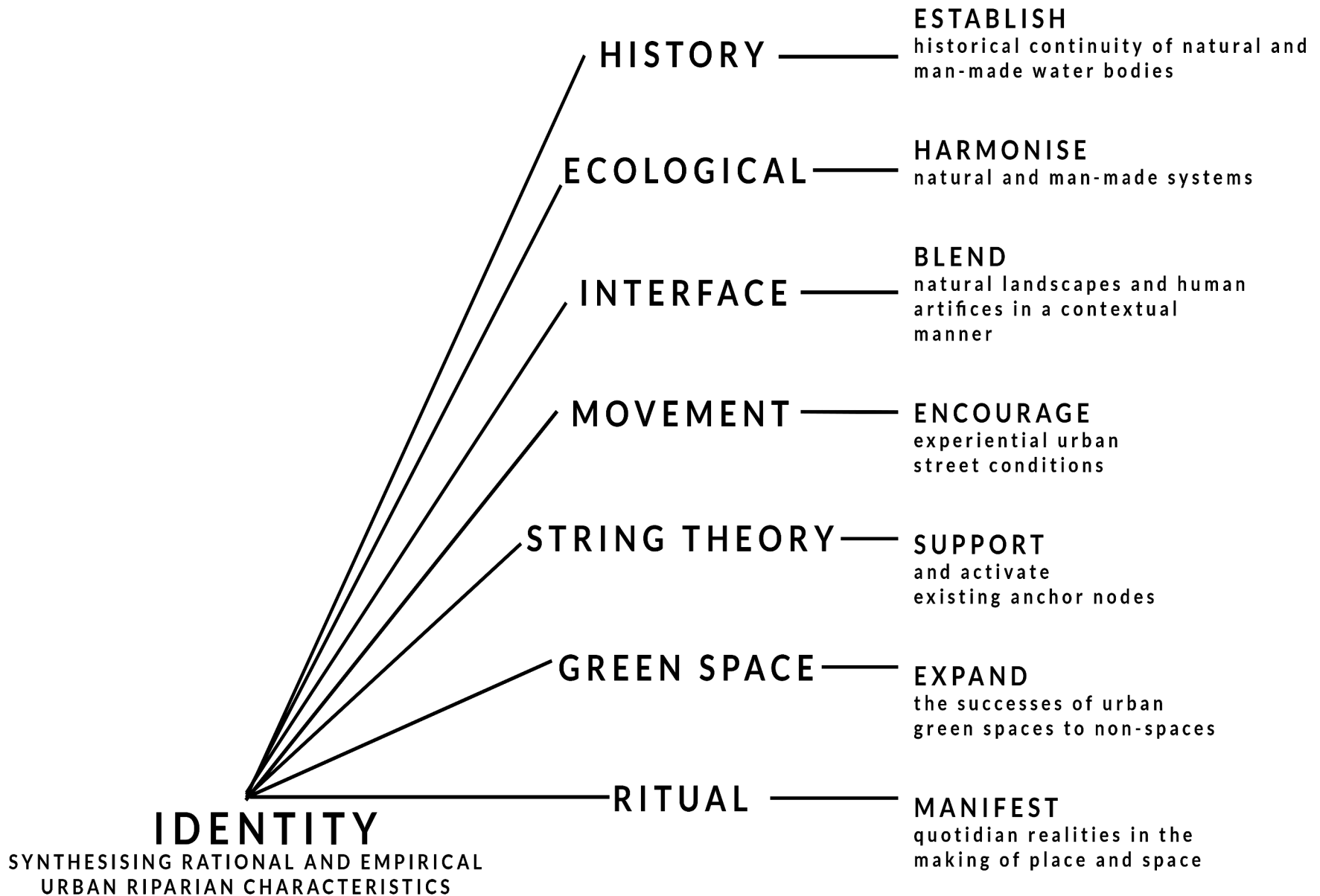


Figure 2.2. Water Group Urban Framework Vision: Identity. Erasmus et. al., 2016.

ECO-SYSTEMIC CONTRIBUTION

Realising the provision for future direct and indirect use values.
Knowledge of passing on resource to future generations.

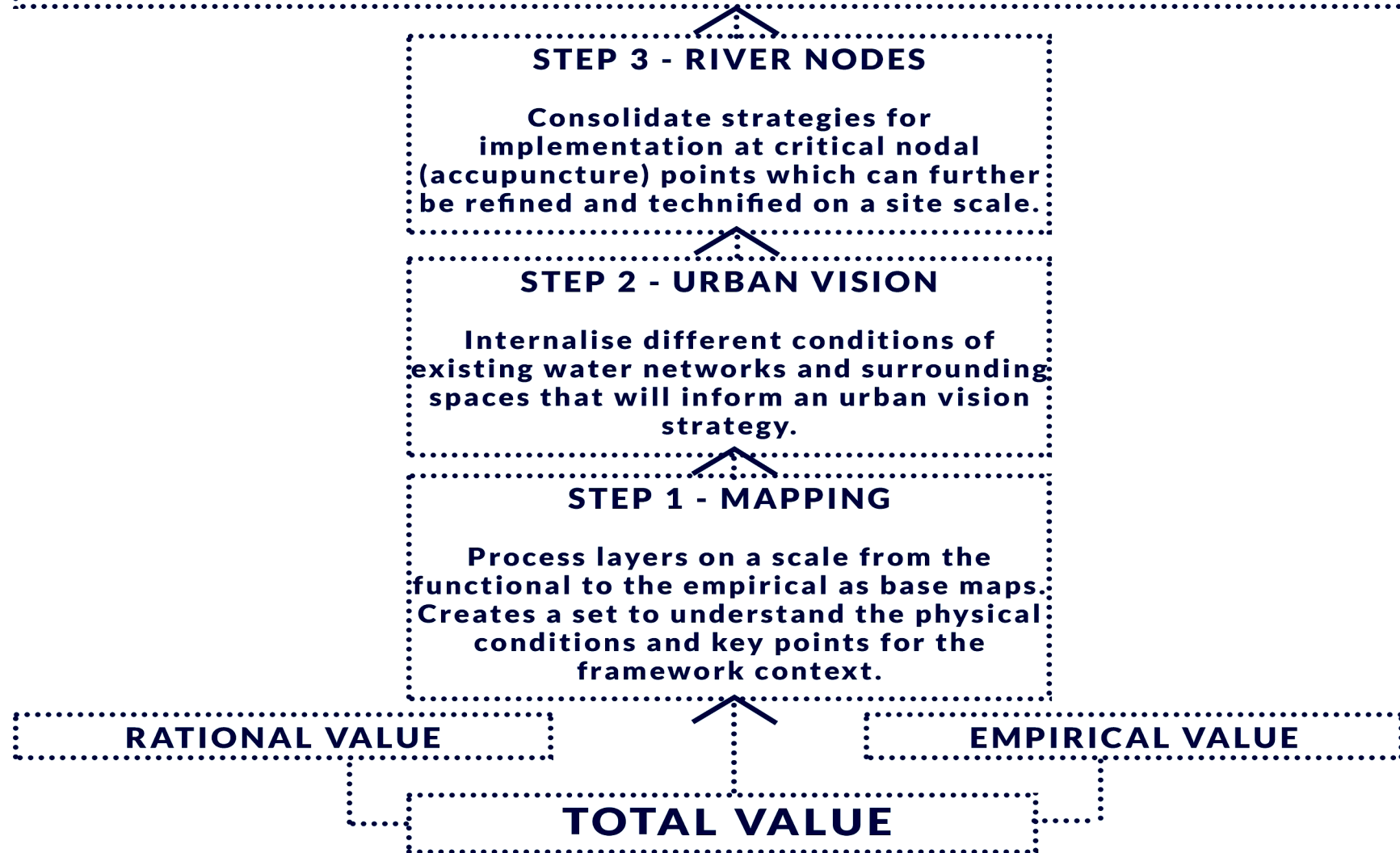


Figure 2.3. Water Group Urban Framework: Methodology for Urban Vision, Strategies and Nodal Response along the River. Erasmus et al., 2016.

2.1 URBAN VISION: MAPPING

2.1.1 INTRODUCTION

Erasmus, Kelly, Mavrakis, Nicolaidis, Scholtz, and Taylor (2016) identified the Apies River as a major natural linear element that exhibits the potential to be interwoven harmoniously with Pretoria's development (see Figure 2.1). By first mapping multiple layers applicable to the river, deriving a potential from the mapped layers and developing a strategic response to the river, would a framework be established that is pertinent to the river. The river's identity is viewed as part of a chronological pattern creating meaning across past, present, and future phases (see Figure 2.2). The framework method is similarly illustrated in Marco Casagrande and Frank Chen's approach to the Taipei's Guandu River (www.casagrandelaboratory.com, 2016).

The principle of the framework's formative and basic enquiries reflect socio-economic and ecological values in our relationship with nature (see Figure 2.3). Furthermore, Erasmus et al. (2016) mapped existing characteristics with regard to the river's potential to be used in regenerating the urban condition of the divided city. Potential sites which would allow for exchanges (see Figure 2.5) between the natural and the urban environment were identified along the river, and these were considered in terms of the constructs,

nature versus the built environment and spatial interchange (see Figure 2.4 - Figure 2.8).

2.1.2 NATURE VERSUS HUMAN BEINGS

Infrastructural elements that reveal and conceal the river were mapped (see Figure 2.7). The original natural water system was processed in a layered manner by using data from historical maps to understand the relationship of the natural river and Pretoria's human settlement, as well as the changes that have taken place in the area over time. Important historical events regarding the effects of channelisation were identified with regard to the Apies River, Steenhovenspruit, and Walker Spruit.

2.1.3 SPATIAL INTERCHANGES

Natural connections such as steep, degraded river embankments which prohibit physical connections to water were identified (see Figure 2.8). In addition, urban connections such as polluted storm water streams originating from roads with degraded sidewalks were recognised. Park connections were identified, including small, polluted water streams with no physical connection to the river.

Infrastructure development timeline of the Apies River

Legend

- Human development
- Human built environment
- Ownership of built environment
- Human domination over nature
- Nature as threat to human life

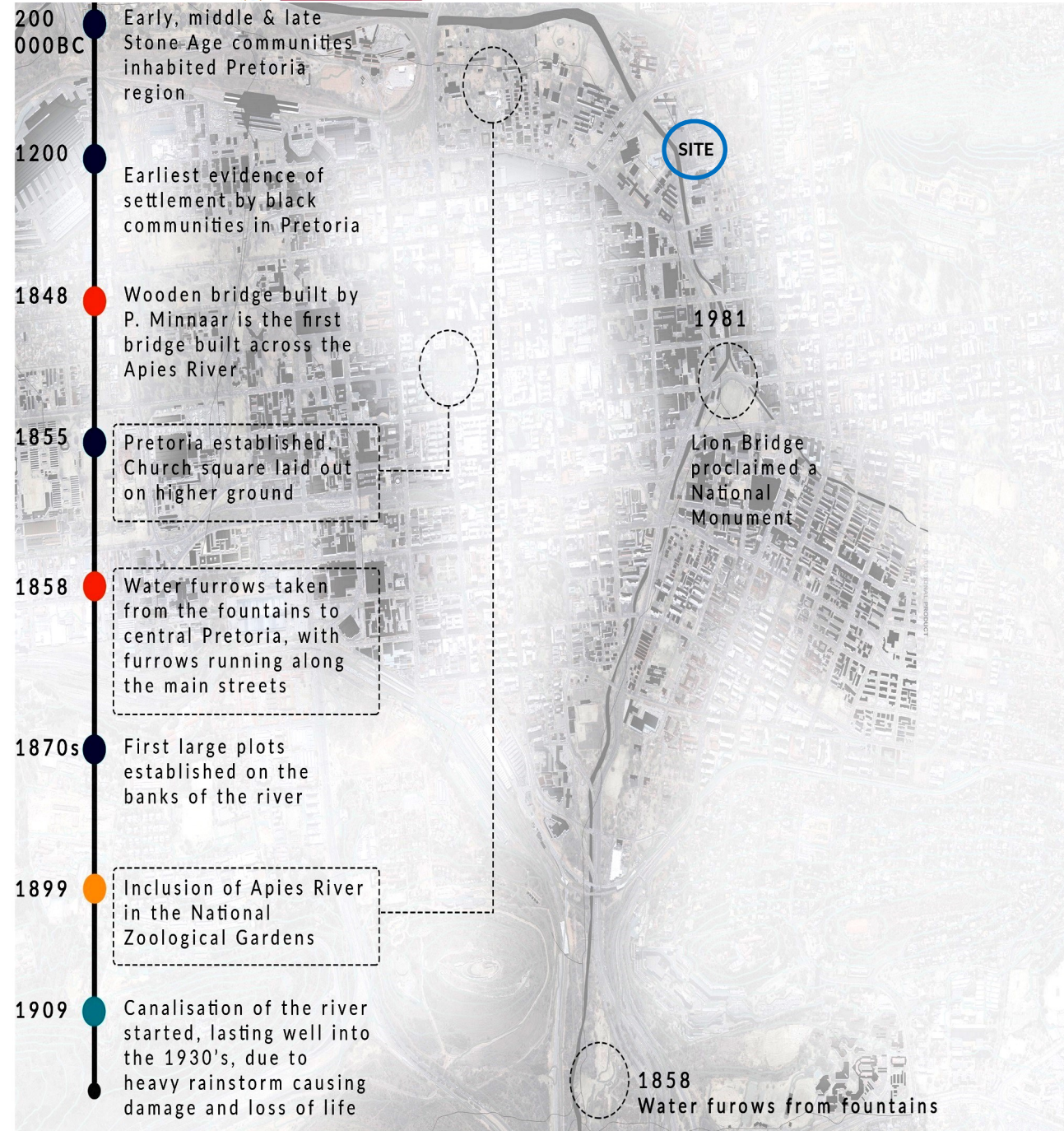


Figure 2.4. Water Group Urban Framework Mapping: Apies River Infrastructure development timeline. Erasmus et. al., 2016.

BENCHMARKED QUALITIES

SOCIAL:

territorialism, vulnerability,
pedestrian comfort, social exchange.

ECONOMIC:

rate of exchange, movement, vibrancy,
places of exchange.

ECOLOGICAL:

visible pollution, bird life, floral
condition, channelisation vs. natural
embankment.

SOCIAL POTENTIAL



ECONOMICAL POTENTIAL



ECOLOGICAL POTENTIAL



Figure 2.5. Water Group Urban Framework Mapping: Active and Distressed indicators. Erasmus et. al., 2016.

Recreational greenspaces on outer edges of CBD.

Ridges contain more natural open space in contrast to high concentration of derelict open space closer to CBD.

Riverside parks at southern entrance to CBD emphasises the importance of R101 entrance to the city.

patial intersections and interchanges indicate where the condition of the river changes.

There are five different conditions of the river space:
 _ Fountains Valley
 _ NZASM Bridge within Fountains Valley
 _ Railway Bridges and Roads
 _ Parks Connection
 _ Urban Infrastructure

Key/ Legend

- concealed furrows
- parks connection
- urban connection
- ecological connection
- ecological to natural node
- natural to urban node
- railway bridges and roads node
- Parks
- Natural
- Cultural
- Derelict
- Zoo/Bird park



Figure 2.6. Urban Framework Mapping: Green Spaces. Erasmus et. al., 2016.

Concealed & Revealed

Indicating points where the Apies River is exposed, covered or built over.

- Exposed
- Built over

Original natural water system



Channelisation

1. Apies River - 1910-1930's
2. Steenhoven Spruit - 1920
3. Walker Spruit - 1925

Other

4. Daspoort Treatment Plant - 1906 proposed gravitational sewer system
5. Concrete Reservoirs
 Water from fountains diverted to reservoir, altering the river flow regime

<http://www.ewisa.co.za/misc/WaterHistory/default19c.htm>

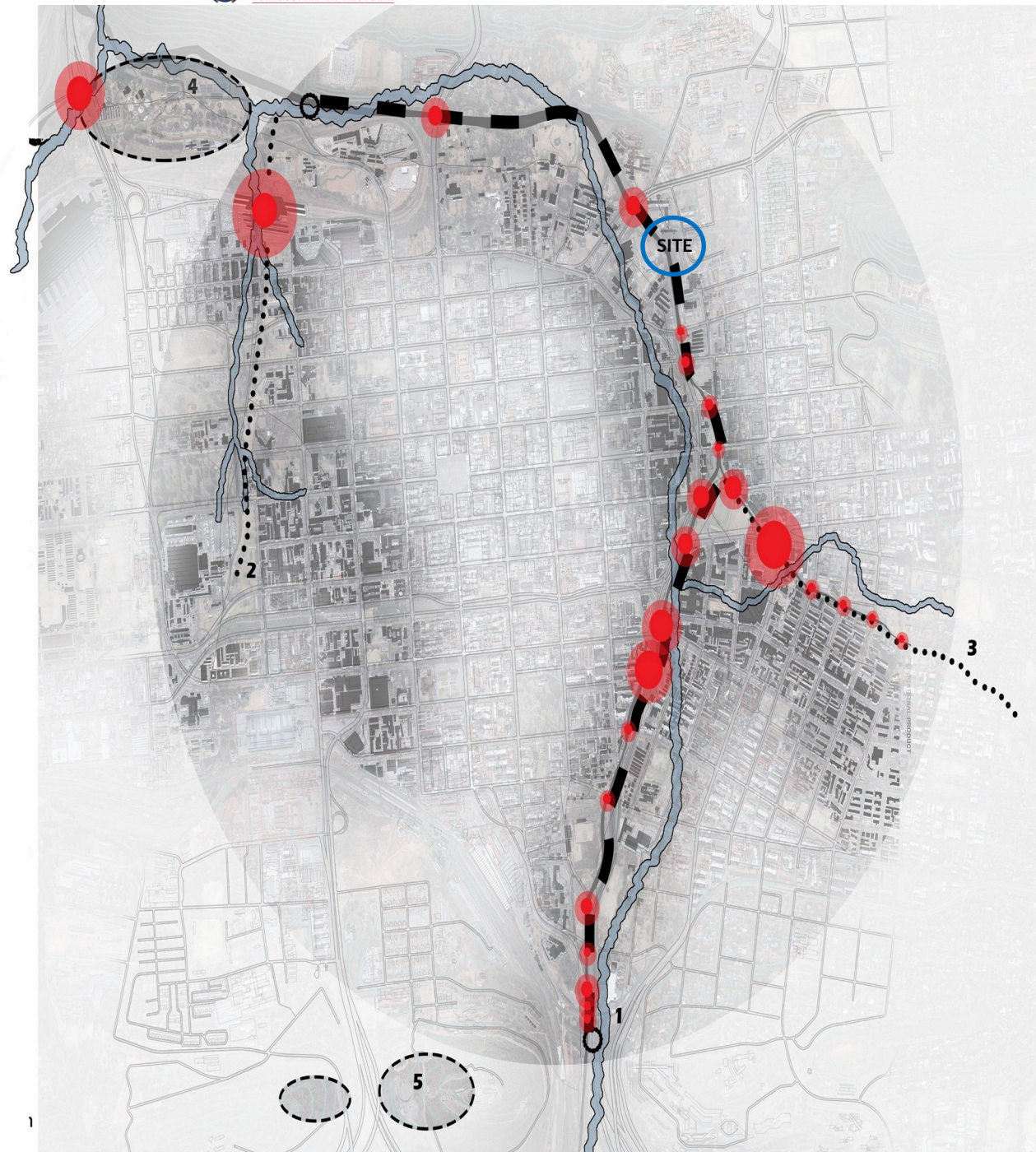


Figure 2.7. Urban Framework Mapping: Revealed vs Concealed. Erasmus et. al., 2016.

Spatial intersections and interchanges indicate where the condition of the river changes.

There are five different conditions of the river space:

- _ Fountains Valley
- _ NZASM Bridge within Fountains Valley
- _ Railway Bridges and Roads
- _ Parks Connection
- _ Urban Infrastructure

- concealed furrows
- parks connection
- urban connection
- natural connection
- natural to urban node
- ↔ railway bridges and roads connection

natural connection

degraded river embankment
no physical connection to water



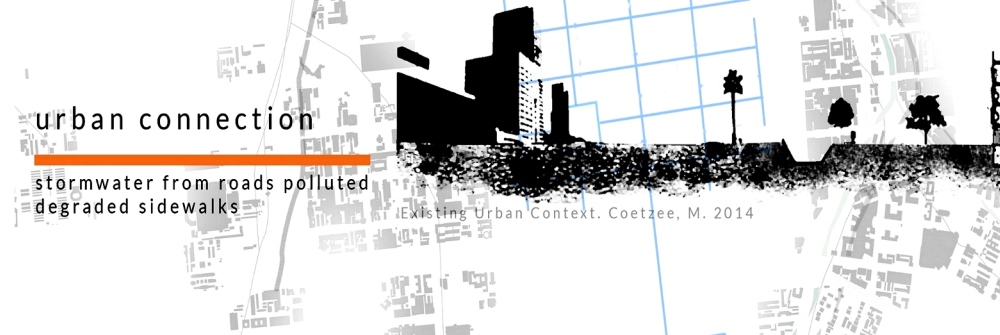
Existing River Embankment with Historic edge. Coetzee, M. 2014



Apies River Conditions. Kelly, S. 2016

urban connection

stormwater from roads polluted
degraded sidewalks



Existing Urban Context. Coetzee, M. 2014



Apies River Conditions. www.earth.gogle.com. 2016

parks connection

polluted water
no connection to river



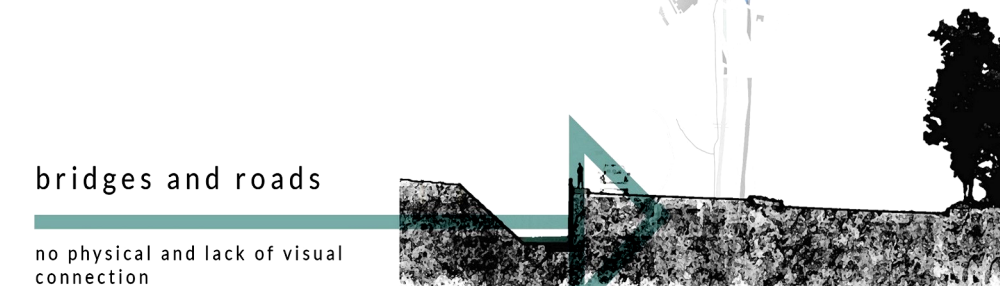
Existing River Along a Park Space. Coetzee, M. 2014



Apies River Conditions. www.earth.google.com. 2016

bridges and roads

no physical and lack of visual connection



Existing Infrastructure along bridges and roads. Coetzee, M. 2014



Figure 2.8. Water Group Urban Framework Mapping: Spatial interchanges. Erasmus et. al., 2016.

2.1 URBAN VISION: MAPPING

2.1.4 RIVER RITUALS

Quotidian practices (see Figure 2.9) and the river's sensorial qualities (see Figure 2.10 and 2.11) were identified along Pretoria's urban river spaces. During site visits, various rituals relating to the river were observed, including the public's use of the river as a place to wash clothing and the construction of temporary, ad-hoc shelters, particularly located in bridge connection zones. Parts of the river spaces appear to be used for religious practices, especially where vast green spaces are available (for example, Fountains Valley, which is located on the corner of Christina de Wit Road and Eeufees Road in Pretoria). River sites where second-hand or post-lifecycle manufactured debris is collected and recycled were identified nearby bridge crossings.

2.1.5 PRECEDENTS

Previous frameworks pertinent to the Apies River (see Figure 2.12 and 2.13) namely, *The Proposed Tshwane Open Space Framework Volume 1-3* (City of Tshwane, 2005), GAPP's Mandela Development Corridor in 2009 (www.tshwane.gov.za), Arup's *City of Tshwane Masterplan* in 2013 (publications.arup.com), and the ongoing development of the *Tshwane Inner City Regeneration Strategy* in 2005, (www.tshwane.gov.za)

predominantly identified the Apies River as a regenerative force which could be used in the process of revitalising the city.

2.1.6 MAPPING CONCLUSION

Unused, lost spaces that have been largely fenced off from public spaces along the river (see Figure 2.14) could be seen as a factor which potentially contributes to urban decay in the surrounding areas. The river acts as a divider, and it separates not only the city fabric, but also humans and the natural world (see Figure 2.15).

The mapping conclusion provide a basis for formulating a set of characteristics based on the identified variables in the mapping exercise. These characteristics would later be able to form potential strategies for different parts of the river and allow the framework to evolve to a level that can be used for site development.

today

Almost a 160 years on, Fountains Valley is still used as a place of recreation. The spaces around Apies River, Walkerspruit and Skinnerspruit are, however in great disarray (Myburgh, 2014: 36).

The most common ritual carried out along the rivers is of quotidian nature. People wash their clothes, themselves and build shelters along its canalised banks. Besides this, the river space is used for various religious practises and for collecting recycling.

Below: Washing, Princess Park. Photo: Scholtz, J. 2016



- concealed furrows
- ~ natural river
- ~ channelised river
- restricted access
- religious
- recreational
- quotidian
- economical



Collecting Water, Walkerspruit.
Photo: Scholtz, J. 2016



Church Group, Walkerspruit.
Photo: Scholtz, J. 2016



Groenkloof Nature Reserve.
Photo: Kelly, S. 2016

Figure 2.9. Water Group Urban Framework Mapping: River rituals. Erasmus et. al., 2016.

UNDERSTANDING SUBJECTIVE AND INTANGIBLE QUALITIES FROM A VOYEURISTIC PERSPECTIVE.

VIEWING THE RIVER ITSELF AS ITS OWN ENTITY IN ITS INTANGIBLE QUALITIES AND RELATIVE TO ITS URBAN CONDITION.

OBSERVING RIPARIAN ENERGIES RELATIVE TO ITS ADJACENCIES.

PHYSICAL - THE NATURAL RIVER

THE RIVER CONCERNED WITH ITS INHERENT NATURAL CHARACTERISTICS, WHERE IT HAS RETAINED ITS TRACEABLE ATTRIBUTES.

EMOTIONAL - THE FEELING RIVER

THE RIVER CONCERNED WITH RITUAL QUALITIES ON A SUBCONSCIOUS LEVEL AND WHAT IT IMPLIES FOR THE INHABITANTS WHO CURRENTLY USE IT.

RATIONAL - THE THINKING RIVER

THE RIVER CONCERNED WITH A PREDOMINANTLY RATIONAL RESPONSE AND TECHNIFICATION EXTENDING TO ITS ADJACENT ENVIRONMENT.

PHYSICAL



EMOTIONAL



RATIONAL

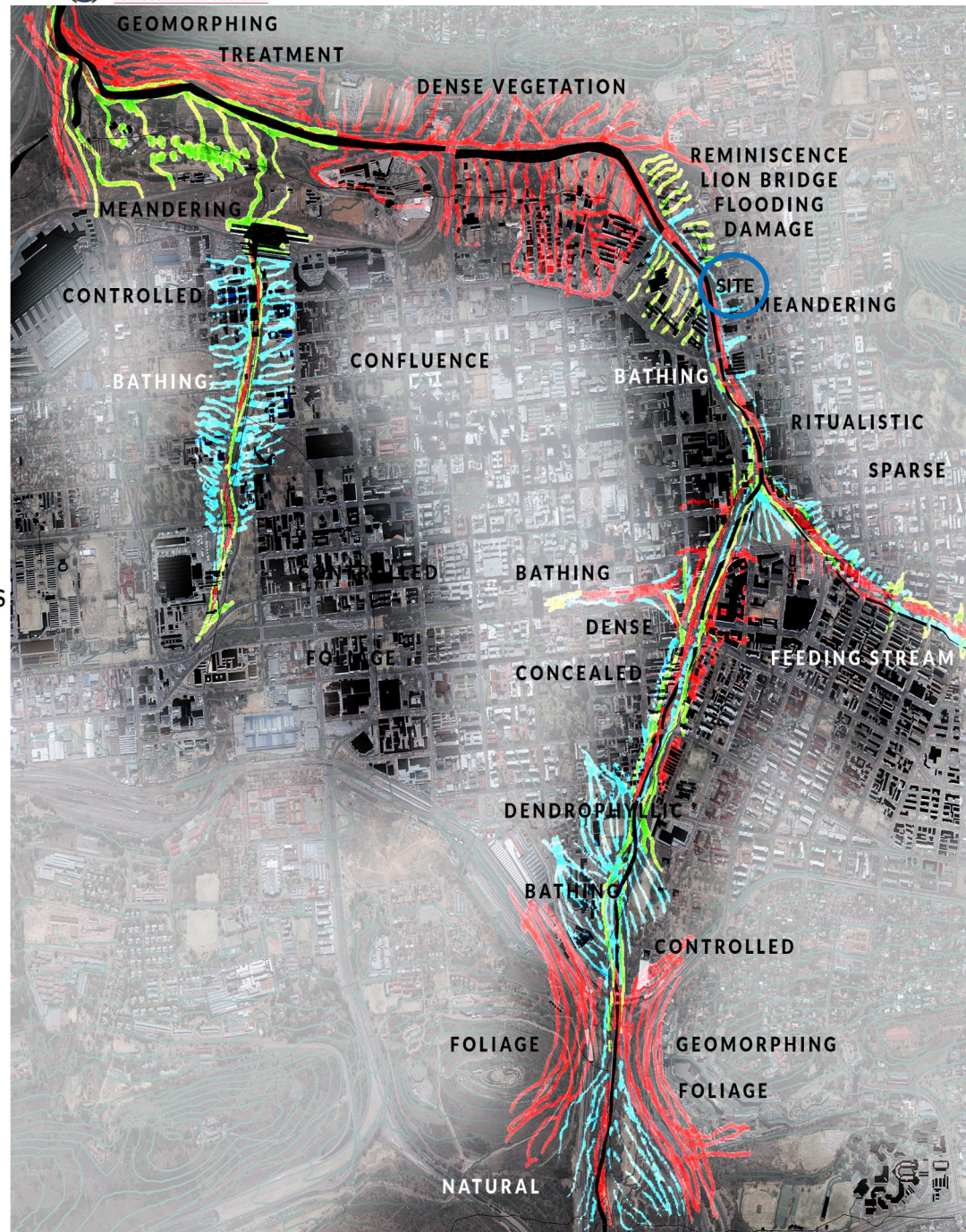


Figure 2.10. Water Group Urban Framework Mapping: Apies River Bio-rhythms. Erasmus et. al., 2016.

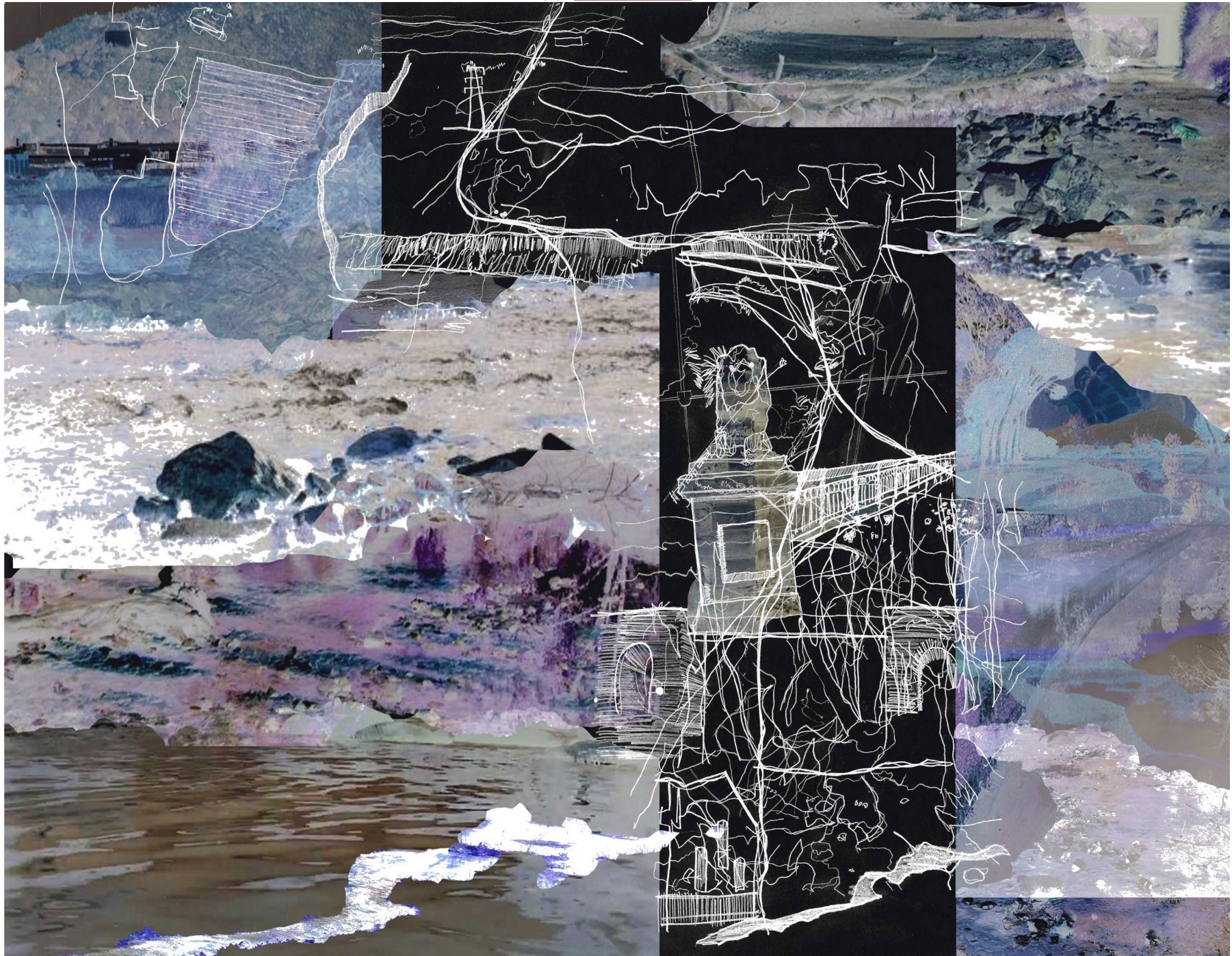


Figure 2.11. Mapping: Sensorial qualities of the river. Erasmus et. al., 2016.

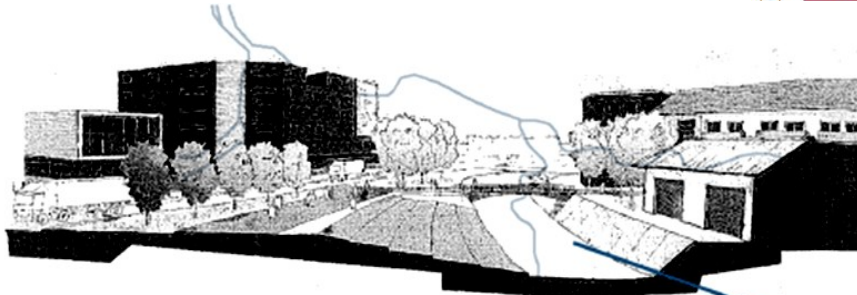


Figure 12-3: Apies Widening Site 6

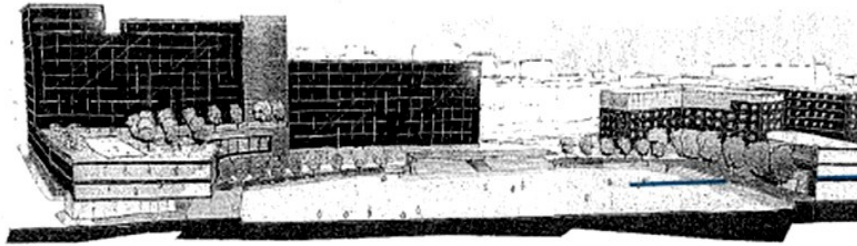


Figure 12-2: Caledonian Site 3

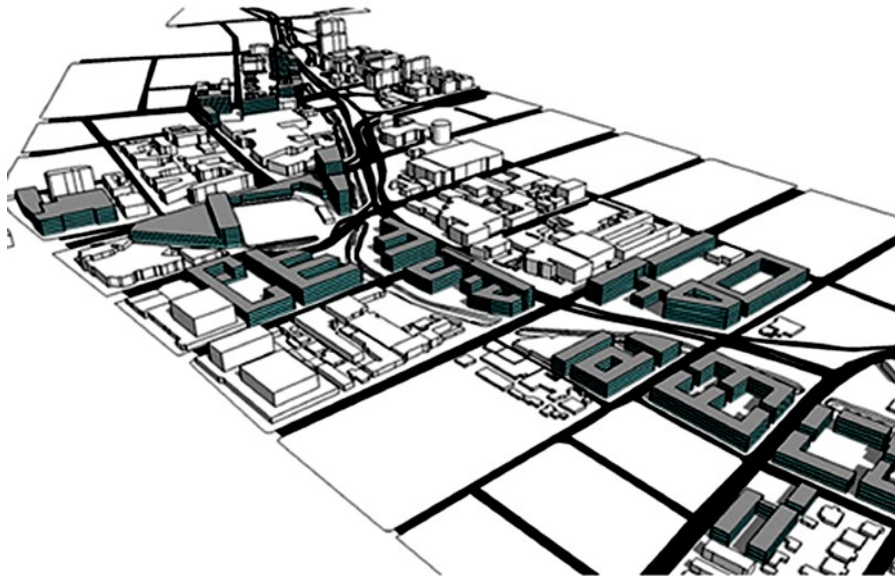


Figure 2.12. Mapping: GAPP's Mandela Development Corridor, www.tshwane.gov.za. 2009.



Figure 2.13. Mapping: Combined frameworks with the Apies River. Erasmus et al., 2016.



Figure 2.14. Photo of the Apies River, <http://static.panoramio.com/>. 2016.

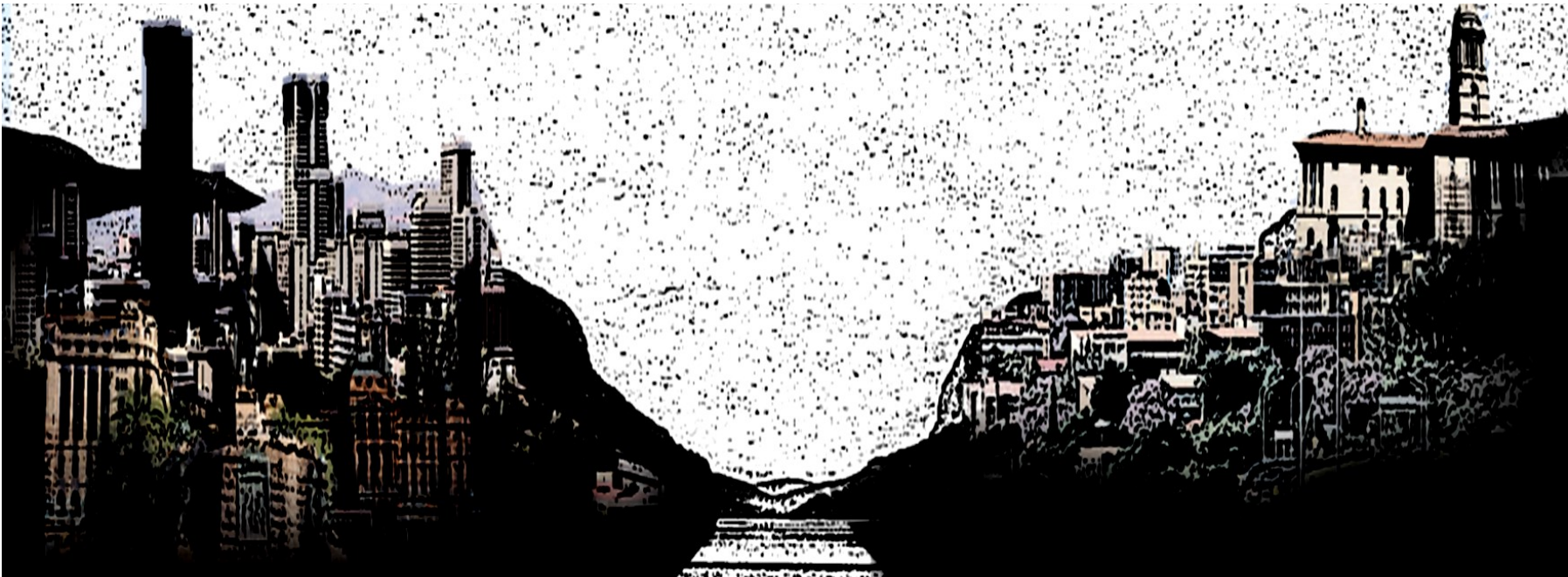


Figure 2.15. Mapping: Conclusion – Pretoria the Divided City. Erasmus et. al., 2016.