

## DEVELOPMENT OF KIMBERLEY ROADS – 1945 to 1990

On 6 September 2017, **Albert Tognolini**, a retired Main Roads Department engineer and Commissioner, presented an illustrated talk to the Kimberley Society. A transcript of the talk follows.

### Introduction

Development of Kimberley Roads – 1945 to 1990. Why 1945 and 1990?

Well, 1945 was the year Main Roads took charge of all works on Kimberley roads. And 1990 was the year I retired from Main Roads.

When I joined Main Roads in February 1950, having just graduated as an engineer, the seal on the Great Northern Highway stopped a few kilometres past [Miling](#), which is only 200 kilometres from Perth. On the North West Coastal Highway, the seal stopped a few kilometres past [Northampton](#). Much has changed since then.

### The early days

In the early days of settlement of the North West, the development and maintenance of roads was the responsibility of the Roads and Bridges Branch of the Public Works Department. However there was little money available for road improvement works.

### 1921–1926

The first serious attempt to improve Kimberley roads started in 1921, when, on August 1st, [Major Geoffrey Drake-Brockman](#), an engineer, was appointed State Commissioner for the North West. In 1922 he decided to drive from Wyndham, via Ord River and Nicholson Stations, to Halls Creek and then via Fitzroy Crossing to Derby. The purpose of the journey was to see the condition of the track and meet the people at the various Stations. The journey was to be made with two cars, a Ford and a Dodge. The party left Wyndham on May 21st 1922.

The Ford broke down near Ord River Station and the Dodge, some distance east of Fitzroy Crossing. He completed his journey travelling from Fitzroy Crossing to Derby in a hired vehicle, arriving in Derby on June 25th 1922. The journey had taken thirty-five days.

In the book *The Turning Wheel*, there is a reference to work carried out on North West roads during Geoffrey Drake-Brockman's time as Commissioner of the North West, and I quote, "In the interim the roads had been improved especially the river crossings".

### 1926–27 to 1944–45

In 1926, following a change of Government, the position of Commissioner of the North West was abolished. Also in 1926 the [Main Roads Act](#) was proclaimed. The Act stipulated that there be a Main Roads Board of three people. The Board absorbed the Road and Bridges Branch of the Public Works Department to become the State Road Authority. In 1930 [legislation](#) was enacted that did away with the Board and created the position of Commissioner of Main Roads.

From 1926 until 1945 roadworks in the Kimberley were carried out by the North West Branch of the Public Works Department (P.W.D.) using funds allocated by Main Roads. The use of mechanical equipment was rare and work was of a maintenance nature, with some improvement of creek and river crossings. However, two notable works completed by the North West Branch of the P.W.D during this period were structures across the Fitzroy River. One at [Fitzroy Crossing](#) in 1935 and the other near the mouth of the river at [Langi Crossing](#) in 1938.

The [1935 structure](#) across the Fitzroy River at Fitzroy Crossing was built using reinforced concrete piles and deck. A report I have read states that a decision had been taken to build a concrete crossing with the top 'just above the level of the existing sand bed'. The structure would have fifty-two 3.6 metre spans with a deck width between kerbs of 2.4 metres. The deck would be supported on 104 reinforced concrete piles driven into the river bed.

The 1938 low level bridge at Langi Crossing was constructed using timber piles and deck. This bridge had thirty-seven 6.1 metre spans. In February 1940, a flood washed away twenty-one spans of the bridge. A report at the time stated that 'the broken portion is approximately 100 feet downstream'. A decision was made to reconstruct the [bridge](#) by salvaging the superstructure timbers and using longer piles. Reconstruction was completed late 1940.

During the 1939–1945 war years, large motor graders were used to maintain the existing tracks, which at that time were being extensively used by military vehicles.

### **1945–46 to 1949–50**

In 1945 Main Roads took over responsibility for the improvement and maintenance of roads in the North West. A District Headquarters was established at Carnarvon.

Ron Duncan was appointed District Engineer. Duncan Road in the Kimberley is named after Ron Duncan in recognition of his dedicated and outstanding service. According to Main Roads Annual Reports, the period following the war was one when there was a shortage of road construction equipment and it was difficult to get men to work in outback areas

The 1949–50 Annual Report stated that, 'In the North West and Kimberley areas, very substantial improvements have been effected on almost all of the roads that suffered during the war period'. One major project in the Kimberley was the road linking Derby and Fitzroy Crossing. This road was originally located close to the Fitzroy River passing through [Liveringa](#) and [Noonkanbah](#). It was rebuilt near its present alignment between 1948 and 1950.

### **1950–51 to 1959–60**

During the period 1950 to 1959 a major project undertaken was the improvement of the Wyndham – Nicholson track. This project was made possible by a special Commonwealth Grant, provided under the [States Grant \(Encouragement of Meat Production\) Act 1949](#). Construction work started in 1951 and by 1956 420 kilometres had been formed, sections gravelled and some creek and river crossings constructed. The total expenditure was \$1,578,000.

[Ivanhoe Crossing](#) on the Ord River was constructed as part of this project. Work on the crossing started in 1952 and was completed in 1953.

*Photo 1. Ivanhoe Crossing, showing the use of forty-four gallon drums as formwork for culverts.*

*Photo 2. The completed crossing.*

Also, in 1958 the low level crossing of the Fitzroy River at Fitzroy Crossing was improved.

*Photo 3. Fitzroy Crossing Bridge 1958.*

This photo shows the low level crossing built in 1935 with the 1958 structure built on top. I have already mentioned that the 1935 low level crossing was built with the deck 'just above the level of the sand bed'. This resulted in the structure having a low point at the eastern end. As a result, relatively small river flows made the crossing impassable.

The new 1958 structure was built level. This meant that although low level, the crossing was open to traffic for longer periods.

### **1960–61 to 1961–62**

During the 1950s there was a general awakening of interest in the development of Northern Australia. The programme of works in the North West had increased year by year. Late in 1959 Main Roads decided that a separate Kimberley District should be created with its administrative office at Derby. The new Kimberley District became operational in January 1960. I was the first District Engineer, Kimberley.

In 1960 the primary road system of the Kimberley consisted of the Great Northern Highway from Pardoo to Wyndham and the Wyndham – Nicholson – Halls Creek Road.

*Photo 4. 1958 slide showing sealed sections.*

The Wyndham – Nicholson – Halls Creek Road was renamed Duncan Highway in 1961. Its classification was changed from Highway to Road in 1976.

Although the primary road system was, in many places, not much more than a five-metre wide track, motorists could be reasonably sure, during dry weather, of completing their journeys without being held up because of road conditions.

Road transport of cattle between Broome and Fitzroy Crossing had started in the 1950s. In 1961 the Prime Minister, [Robert Menzies](#), made an announcement which was to have a profound influence on Main Roads activities in the Kimberley. He announced that the Commonwealth Government would provide financial assistance for the development of "[Beef Roads](#)" in Northern Australia. The first few years following creation of Kimberley District was a period of great activity. Technical, clerical and road construction personnel had to be recruited.

The technical, clerical and senior construction personnel such as supervisors, foremen and gangers were mainly transferred from Southern Districts. Offices, stores, plant workshops, soil testing laboratories and staff houses had to be built. Plant had to be mobilised and a radio communications system established. Looking back, I think the people who transferred from Southern Districts did so because they wanted to be part of, what was going to be, a very exciting time in the history of Main Roads.

### **Commonwealth Financial Assistance for Beef Roads**

Commonwealth Government financial assistance was a very important factor in the improvement of the Kimberley road system. In October 1961 the [Western Australian Grant \(Beef Cattle Roads\) Act, 1961](#) was approved. This Act provided for the granting by the Commonwealth Government of \$1,000,000 for the following works:

- (a) The improvement of the road between Wyndham and Nicholson,
- (b) The improvement of the road between Wyndham and Halls Creek via Turkey Creek,
- (c) The construction of a bridge over the Ord River at Bandicoot Bar,
- (d) The construction of a bridge over the Dunham River near its junction with the Ord River.

The Act provided further that the Commonwealth contribution towards the construction of the two bridges would be limited to one half of their cost. The Act also provided that in order to receive the grant of \$1,000,000 the State must spend an equivalent amount at least on roads in the Kimberley.

### **1962–63 to 1965–66**

In November 1962 the [Western Australia Grant \(Beef Cattle Roads\) Act 1962](#) provided further Commonwealth Government financial assistance of \$1,400,000 and \$1,500,000 in each of 1963–64, 1964–65 and 1965–66 for improvement of selected roads. As for the 1961 Act, the State was required to spend at least an equivalent amount on roadworks in the Kimberley.

### **1966–67 to 1973–74**

The Commonwealth extended its support by one year to June 1967. It then further demonstrated its interest in promoting beef production in Northern Australia by allocating \$50,000,000 for road improvement works during the period 1967–68 to 1973–74. Western Australia's share of this was \$9,500,000.

### **1974-75 to 1989-90**

Since 1974 there has been no legislation providing special financial assistance for "Beef Roads". Instead the improvement of roads in the Kimberley was continued using both Commonwealth Funds provided under various Acts and State Funds.

### **Initial Development Policy**

The initial policy in regard to the improvement of the "Beef Roads" was:

- (a) Upgrade the Great Northern Highway between Broome and Wyndham to a more or less uniform standard with a somewhat higher standard on those sections carrying most traffic. This higher standard provided for the sealing of some sections.
- (b) Construct Victoria Highway on a new alignment from the junction with Great Northern Highway to the Northern Territory border to a more or less uniform standard, except for the section between Great Northern Highway and Kununurra which would be sealed.
- (c) Upgrade Duncan Road from the junction with Victoria Highway to Nicholson to a more or less uniform standard.
- (d) Construct a road from Derby through the King Leopold Ranges to give access to Mount House and Gibb River Stations and [Glenroy Abattoir](#).
- (e) Construct a number of bridges over major rivers and large creeks

### **Change to initial development policy**

This initial development policy was later changed to provide for the sealing of the whole length of Great Northern Highway within the Kimberley, the sealing of Victoria Highway to the Northern Territory border and sealing of sections of the Derby to Gibb River Road. Also the upgrading of Duncan Road was extended from Nicholson to Halls Creek.

## Planning and design

Before any improvement work was carried out the location and alignment of the existing road was investigated. Those sections requiring alteration were identified. Major deviations of the Great Northern Highway included:

- (a) A long section between Pardoo and Nita Downs was relocated east of the original alignment. The new location meant that the road would be built on Pindan soil which was much better for road construction than the coastal sand of the original track.
- (b) A deviation to cross the Fitzroy River approximately ten kilometres upstream of Langi Crossing to obtain a better location for the construction of two bridges. The new alignment was selected after exhaustive investigation including model studies and actual observations during flood conditions.

*Photo 5. Langi Crossing Bridge March 21st 1963.*

- (c) Sections of the Highway between Fitzroy Crossing and Halls Creek.
- (d) Part of the Highway in the vicinity of Mabel Downs Station on the Halls Creek to Wyndham section.

*Photo 6. Section near Mabel Downs.*

- (e) A long deviation between Turkey Creek and Pompey's Pillar primarily to obtain a better location for a bridge over the Bow River. There were other advantages.

*Photo 7. Near Pompey's Pillar on the deviation. Taken in 1963. I commissioned an artist, Bruce Troode, to paint this scene. Unfortunately he looked at the wrong side of the 35mm slide so the tree you see on the left side of the road is painted on the right side. Never-the-less it is a good painting.*

- (f) A deviation of the Highway between nineteen and thirty-seven kilometres south of Wyndham to by-pass the Parry Creek Valley which is subject to flooding.

*Photo 8. Perron Bros. Grader. Parry Creek section. There is a story about this bogged grader. In fact there were two bogged graders. A few of Perron Bros. plant operators decided to drive into Wyndham. On the way back to their camp the driver of the vehicle ran off the narrow track and got bogged.....*

*Photo 9. Surveyors at Work on the deviation to by-pass the Parry Creek section.*

- (g) Relocation of the Victoria Highway from its junction with Great Northern Highway to Kununurra. The existing road was located close to Parry Lagoon and the Ord River. It was subject to flooding and was considered unsuitable for further improvement.

## Derby – Gibb River Road

The most difficult location job was the selection of the alignment of the Derby – Gibb River Road where it passes through the King Leopold Ranges. I remember reading a report of an investigation made in, I think 1950, of possible locations for a road across the King Leopold Ranges. One possibility mentioned in the report was Gardiners Gap. We investigated Gardiners Gap and decided that although it was a possibility there had to be a more suitable location. We finally decided on a route through [Inglis Gap](#). The next problem was how to get down on the north side of the range. The solution was the section we called the Bench.

## Construction Policy

The policy adopted for the construction of improved roads was based on the proven principle of stage construction.

- Stage 1. The road is cleared and lightly formed. At watercourses the road is graded to the stream-bed level.
- Stage 2. The necessary earthworks, initial base course and some culvert construction is carried out. In practice the first two stages are often carried out together.
- Stage 3. Culvert and bridge construction is completed.
- Stage 4. Completion of the base course, priming and sealing.

## Construction Programme

It was decided that the improvement of "Beef Roads" would be implemented in stages.

- Stage 1. Construct and seal, including the construction of bridges on the larger watercourses, the Broome to Fitzroy Crossing and Halls Creek to Wyndham sections of the Great Northern Highway.

Construct and seal, including the construction of bridges on the section of Victoria Highway between the Great Northern Highway and Kununurra.

Commence construction of a road through the King Leopold Ranges, with the aim of having a track completed to a stage by May 1963, which would allow operation of a refrigerated semi-trailer.

Stage 2. Complete construction of a sealed road between Port Hedland and Broome. Complete construction and sealing of Victoria Highway from Kununurra to the Northern Territory border.

Stage 3. Complete the construction and sealing of the Fitzroy Crossing to Halls Creek section.

## Construction

During the five years July 1961 to June 1966, approximately 260 kilometres of the Great Northern Highway in various sections between Broome and Fitzroy Crossing and south from Wyndham and of the Victoria Highway between the Great Northern Highway and Kununurra was sealed. By 1966 most pastoral properties had reasonable access to an improved arterial road.

Work continued in accordance with the Construction Programme and on [September 7th 1986](#), at a spot 100 kilometres west of Halls Creek, the sealing of the Great Northern Highway was completed. This meant that motorists could drive right around Australia on a sealed road.

## Gibb River Road

At the same time a track had been opened up through the King Leopold Ranges to enable the transport of beef carcasses from Glenroy abattoir to Derby.

*Photo 10. Inglis Gap May 13th 1963.*

The first trip by a semitrailer loaded with beef carcasses was made on May 13th 1963. We had achieved the target date set in 1961.

But it was only a track. A great deal of improvement work has been carried out since and it can now be called a road – [Gibb River Road](#).

## Completion of sealed roads

Victoria Highway from G.N.H. to Kununurra: 1967

Great Northern Highway:

Broome – Derby	1968
Derby – Fitzroy Crossing	1972
Halls Creek – Wyndham	1978
Pardoo – Broome	1981
Fitzroy Crossing – Halls Creek	1986

## Maintenance of sealed roads

A sealed road will not last indefinitely. Sections can fail and have to be reconstructed. The bitumen slowly deteriorates and has to be resealed. In fact, sections of road sealed early in the programme were being resealed before the completion of seal between Fitzroy Crossing and Halls Creek. Over time we found that more bridges were needed and other drainage structures needed improvement. This has been the case with the sealed roads in the Kimberley.

## Other Works

The Development of Kimberley Roads is not confined to the primary road system. Over the period 1945 to 1990, Main Roads has been involved in many other works including:

- ✚ Construction and sealing of streets in all the Kimberley towns.
- ✚ Construction of a sealed road to the main Ord River Dam.
- ✚ Construction of Ord Irrigation Area farm access roads.
- ✚ Construction of the Kununurra Airstrip for the Queen's visit March 17th 1963.
- ✚ Improvement of Station Access Roads.
- ✚ Improvement of the Broome – Cape Leveque Track.
- ✚ Improvement of the Gibb River – Kalumburu Road.
- ✚ Improvement of the Gibb River – Wyndham Road.

*Photo 11. Lombadina – Cape Leveque Track 1961.*

*Photo 12. Pentecost Range 1961.*

*Photo 13. Ngumban Cliff.*

### **Final Comment**

I cannot finish this address without making a comment about the people that I worked with during my time in the Kimberley. The engineers, surveyors, draftsman, clerical staff, supervisors, soil testers, foremen, plant mechanics, gangers, plant operators and construction workers.

They were all competent and dedicated. Keen to do their best.

I could not have asked for a more supportive team.

Here with me tonight is Mike Wallwork. Mike has a keen interest in Western Australian history. He spent a few years in the Kimberley as a Main Roads engineer. As a result he has a particular interest in the history of the Kimberley.

Mike has assisted me in preparing for tonight's presentation. He has been a great help in gathering information on various matters. Thank you Mike.

Since leaving the Kimberley in June 1964 I have been back twice.

Once to attend the opening of a new Main Roads Office in Derby.

And a trip by road to Kununurra and back in the year 2000. This trip was with my wife and our friends Tom and Joan Pedersen. Tom had been an engineer with Main Roads and had spent time in the North. My wife used to say it was not so much a holiday trip but a long one month road inspection.

All I can say is that, in preparing my address for tonight, I have had a month refreshing my memory, not only of the four and a half years I spent in the Kimberley, but also my memory of the history of Main Roads.

*Albert Tognolini*