

# Lance Midgley's Story

Lance commenced work with the CRB in 1967 and over the next 44 years worked in the following locations:

1.	Traffic Engineering Division – Engineering Assistant	7 months
2.	Road Design Division – Engineering Assistant	7 months
3.	Traralgon Division – Construction Engineer	1 year 3 months
4.	Engineers Training Scheme:	
	(a) Bridge Division	6 months
	(b) Materials Research Division	3 months
5.	Dandenong Division	3 years 5 months
6.	Materials Research Division	3 years 8 months
7.	Hume Freeway (Seymour-Euroa) Project	5 years 11 months
8.	Metropolitan Division (Melton Project)	2 years 3 months
9.	South Eastern Arterial - Malvern Project (SEMARL)	1 year 3 months
10.	Metropolitan Division (Melton Project)	11 months
11.	Metropolitan Region (Greensborough Project)	1 year 8 months
12.	Department of Transport and Works, NT	12 months
13.	Metropolitan North West Region	6 months
14.	Northern Region	1 year 9 months
15.	Materials Technology Department/GeoPave	8 years 4 months
16.	Western Region	10 years 2 months
	<b>TOTAL</b>	<b>44 years</b>

Lance was initially appointed to a position in Traffic & Location working with Alan Mackinlay on Traffic Counting, O&D surveys, etc. Over the next 44 years, he worked 8 times in Regional Services, twice in Major Projects, once on secondment to the Northern Territory and 3 times in the Materials Departments. As a result of the various appointments during his career and other reasons, he needed to move his residences 19 times. The main highlights of his career can be summarized as follows:

## 1. 1967 Inductees:

Back Row: (L-R): Neil Jones, Tom Byrne, Rolland Stuart, Neil Tull.

Front Row: 1<sup>st</sup> Left - Geoff Lawrence, 3<sup>rd</sup> Left - Lance Midgley



2. When working in Dandenong Division in 1970, he was relocated to Dromana and together with Roger Thorp as Site Engineers, they managed a Direct Labour team of over 100 men constructing the Dromana to Rosebud section of the Morning Peninsula Freeway. Roger generally looked after the earthworks operation and Lance the Pavement works. Howard Ellis (later D/E Dandenong) followed by Peter Evans were their Class 3 engineers. The halcyon days of DL construction and maintenance.
3. In 1973, he was appointed as the VicRoads Pavement Design Engineer providing pavement rehabilitation and design services to Metropolitan and Dandenong Divisions and all the municipalities within those two divisions.
4. Following the failure of the Hume Freeway, Wallan-Broadford pavement in the spring of 1976, VicRoads retained the services of the eminent UK engineer Dr David Croney, OBE, BSc, PhD, FICE, to investigate the cause of failure and to advise generally on the suitability of the pavement to accept the final asphalt overlay provided for in the pavement design. Lance and Bob Barron assisted in the investigation. The primary cause of the failure was found to be:
  - the use of the cementitious additive from which was intended to improve the grading of the crushed stone base. This rendered the material both brittle and difficult to compact.
  - the asphalt surfacing failed primarily due to the mixture containing a large proportion of soft degraded aggregate.

Subsequently, the Engineer in Chief (Keith Moody) issued Engineering Note No. 117 – Additives to Crushed Rock dated 13 February 1978 which significantly restricted the use of cementitious additives including flue dust from cement works at Fyansford or Waurn Ponds which had previously been added to improve the grading of the product.

5. In 1977, Lance was appointed as the Materials Engineer on the next Hume Freeway Project between Seymour and Euroa. The project was well supported by a large contingent of laboratory staff.

Project Laboratory Staff (L-R):  
 John Seymour, Chris Carson(back), Bob McPherson (front), Ian Lister, Neil Tull, Frank Pierce, Bob Parker, Ray Hardy, Darryl Eaton, Noel Keil, Terry Grossman, Chris Stewart.  
 Front Row: Paul Wilson, Leon Shanks, Paul O'Connor, Lance Midgley.  
 Missing: Kevin Smith



One of the Project's main tasks was to ensure the pavement did not fail again. So, Lance, with the help of MRD Geologist John Jobson, sourced a slightly plastic granitic sand as the new additive. This achieved a well graded practically impermeable product with good cohesion and compactability qualities, but more importantly removed the brittle nature of the previously used mixture on the Wallan Broadford project.

John Jobson - 1983



Of course that was not the end of the changes. Very close control of the crushed rock production at the plant was instigated of which Lance supervised, noting that the quarry was established at a VicRoads nominated site on private farmland in Avenel and serviced with a full time Clerk of Works. Other pavement features included:

- adoption of testing for sound, marginal and unsound aggregate in the product,

Unsound Stone Training – 1978. RHS from right: Kevin Smith, Lance, and Kevin Haddingham



- Close control over the wetmix production mixed to a target Moisture Content set for achieving optimum compaction effectiveness,
- delivering the crushed to the roadbed in formed windrows via a towed Vee shaped device which minimized segregation,
- spreading the crushed rock with the Boards new Autograde recently purchased for high production spreading,
- specifying close control over surface levels with penalties applying for non-compliance,
- adopting higher levels of pavement density testing where base course layers were required to achieve a Characteristic Density Ratio (six tests) of not less than 100.0%.



Celebrating the opening: Chris Cox (Apex Quarries) Peter Lowe (Materials Engineer -H/O) and Lance (Acting Assistant Project Engineer)

Staff attending the opening of the Seymour Section of the Hume Freeway in 1982: Note Lance on far left, Lester Watt (standing centre front in dark brown shirt), Robin Hicks (standing centre front in white short sleeve shirt) and Rick Bush (standing back row left of man with cream hat).

All these features were met and are now enshrined in VicRoads specifications. The pavement has since performed very successfully over the past 40 years.

6. In 1988 as the Project Engineer for the Western Freeway – Melton Section, he reported on the innovative pavement construction procedures to combat the swelling and shrinkage characteristics of the expansive clay subgrades in this area. This approach was to construct the subgrade at close to Optimum Moisture Content as practicable, then Lime stabilize the subgrade, then as quickly as possible cover the stabilise layer with a relatively impermeable crushed sandstone subbase followed by the crushed rock base pavement. Further innovations included:

- provide through appropriate design of the cross-section of the road, sealed shoulders and impermeable verge material.
- Ensure that the location of pavement drains is confined to the impermeable subbase/select fill capping layer and does not extend into the expansive soils.
- Restrict the planting of shrubs and trees close to the pavement including no planting within the central median.

This approach achieved the objective of minimising the influence of the expansive clay subgrade. A Technical Report (TR 77) on the approach was documented by Lance in 1987 titled “*Construction Techniques used to improve the performance of pavements constructed on expansive clays*”. Since that time, VicRoads procedures have evolved and are now described in Code of Practice 500.22 – “*Selection and Design of Pavements and Surfacing.*”



Project Engineers – Melton Project at opening in 1987  
(L-R): Charles Paschula, Lance Midgley, Ken Mathers

7. In 1989, Lance along with three others, was seconded to the Northern Territory’s Department of Transport and Works located in Darwin as their Strategic Planning Engineer. His role was to develop the Roads Program for the coming year. A major task was to review the previous unapproved Victoria Highway Upgrading strategy from Katherine to the Western Australia border. That strategy which was based on Australian Bicentennial Roads Development (ABRD) standards had only produced a Benefit Cost Ratio (BCR) of 0.5. The aim for Lance and his VicRoads colleague Peter Millar, was to develop a strategy where the Benefit Cost Ratio was greater than one.



The four secondees to Darwin. L to R: Peter Millar ex Bendigo Division, Alan Armstrong ex Road Design, Laurie Watson ex Materials Technology Department, Lance Midgley ex Metropolitan Division

The strategy they produced was based on widening the single lane pavement rather than full width construction and adopt a flood immunity period of 20 years rather than the 100-year ABRD standard. This meant a delay of up to 1/2 hour wait for the water to subside rather than no delay. The revised strategy which achieved a BCR of 1.1 was accepted by the Commonwealth and over the next 12 years, an 8-metre sealed pavement with 2 x 3.5 metre traffic lanes was provided.

8. Shortly after his return in 1990, he was appointed as Operations Manager for the northern part of Northern Region. Gary Liddle was the other Operations Manager in the Region. Together with Mal Kersting (Manager Design) and Greg Mariager (Business Services Manager, Bruce Phillips the Regional Manager had selected a team that worked and played well together.

Top: Bruce Phillips  
Bottom Row (L to R): Mal Kersting, Lance Midgley, Greg Marrison, Gary Liddle



9. In 1993 after being appointed back to the Materials Technology Department as Manager Pavement Technology, Lance was involved in the updating of the VicRoads Pavement Design Guide issued as Technical Bulletin No. 37 and the VicRoads/RTA NSW Guide to Skid Resistance Testing using a SCRIM Machine - currently issued as VicRoads Technical Note No. 110.
10. In 1993, he was appointed as the VicRoads representative on the Austroads Pavement Research Group (APRG) for the next eight years, most of which he served as the chair of that group. The group were responsible for the production, implementation and management of a Strategy for Pavement Research and Development in Australasia. As a result of his leadership, in 2000 he was recognised by Austroads with a Fellowship Award for his outstanding achievement of major national significance in the delivery of Austroads objectives in the field of pavement research.



Members of the APRG: Lance in front row with Ken Michael Austroads Chairman 4<sup>th</sup> left and John Bethune (AAPA) 2<sup>nd</sup> row 2<sup>nd</sup> right.

11. In 1994, he was a member of a C&CA sponsored overseas study tour to Europe to gather information on the latest methods on concrete pavement design and construction including the process of achieving an Exposed Aggregate Concrete Surfacing (EACS). Such a surface was aimed at reducing the noise generated by the vehicle tyre/surfacing interface and reducing water and beneficially, offering a second alternative to the unchallenged Open Graded Asphalt surfacing.

C&CA 1994 Study Tour Members in Cologne, Germany (L-R): Bob Andrews (SA), John Viedis (Qld), Dave Potter (ARRB), Staff Gill (C&CA), Lance Midgley (Vic), Charles Pashula (Vic)



12. During his time as Chair of APRG, he also took on the role as the Inaugural Chair of a newly AAPA/Austrroads established Institute of Higher Education offering nationally accredited postgraduate award programs in Roads & Pavements, Asset Management, and Project Management. The organisation is now known as the Centre of Pavement Engineering Education (CPEE), and he served in the Chairs role for the first four years of its establishment. For his service, he was presented with a Certificate of Appreciation in recognition of the valuable contribution made towards the establishment and successful development of CPEE since its inception in 1995.

13. In 1997, Lance was appointed as the Manager of the Materials Technology Department (MTD). He was involved in bedding down the commercialization of his department’s services including the renaming MTD to GeoPave where the focus was on expert Geotechnical and Pavement design and advice services. In this year, he received his 30-year Service Certificate.

Recipients of 20 and 30-year service certificates (L-R): Kerry Burke (Director Technical Services, Rob Adderley, Leon Thompson, Bruce Ennor, Fred Andrews-Phaedonas and Lance Midgley



14. In 2000, he attended an AAPA organised overseas study tour to Europe to gather information on the latest methods on asphalt pavement design and construction including what research and development was being undertaken on assessing the Health and Safety concerns from claimed cancerous fumes being generated from heating bitumen used in asphalt and sprayed sealing work. Lance was required to produce a report for AAPA on the findings from the tour.



AAPA Study Tour Members in front of Checkpoint Charlie in Berlin (L-R): David Anderson, Malcolm Frost (CSR Emoleum), Lance, Paul De Britt (Fulton Hogan), Rob Richards (Transport SA), Deva Mylvargaran (CSR Emoleum)

15. His last move was in 2000 when he was appointed as VicRoads Regional Manager -Western Victoria. The main office was located in Ballarat with operational offices in Horsham and Mildura. Staff numbered just over 70. He also had responsibility for the expanding VicRoads Call Centre together with the Registration & Licensing business with offices located in Ballarat, Stawell, Horsham, Maryborough and Mildura. The Transport Safety Service was also part of his responsibility with staff operating out of Ballarat and Mildura offices. A key KPI was to deliver each year to within 2% of the allocated budget for the region, an outturn mostly achieved.



Lance receiving his 40-year Service Award in 2007 with Ted Vincent (L) Director Regional Services and Gary Liddle (R) CEO

16. Following his retirement with VicRoads in 2010, he continued to offer his services as a Pavement Consultant with a significant engagement with the Tasmanian Department of Transport. Here, that organization was adopting VicRoads specifications, contract administration procedures, and quarry investigation and surveillance processes. His task was to facilitate the process.

17. In 2020, Lance suffered a serious fall while organizing a Probus event in Robinvale which left him a quadriplegic requiring a powered wheelchair for mobility.

18. In 2023, he was presented with a Lifetime Contribution Award by the NTRO recognising his dedication and extensive pavement contribution during his career with the CRB, RCA and VicRoads. While in the Chair of APRG he was intimately involved with ARRB staff in the management of the Austroads \$0.5M Accelerated Loading Facility Program (ALF) where a variety of pavements were tested in Queensland, New South Wales and Victoria. In 1996, Lance led the task of relocating ALF to a VicRoads unused freeway reserve site next to the VicRoads Dandenong Fowler Road Patrol depot where it continues to reside today. In addition, his paper on “*Best Practice for the Preparation of New Granular Pavements for Thin Bituminous Surfacing*” published by VicRoads as Technical Report (TR209) in 2010 is one of the references quoted by NTRO staff when conducting pavement training courses.”



Lance with Michael Moffatt (L) NTRO Pavements Leader and Dr Richard Yeo (R) NTRO Chief Operating Officer



The Award