

= Ontario Highway 416 =

King 's Highway 416 , commonly referred to as Highway 416 and as the Veterans Memorial Highway , is a 400 @-@ series highway in the Canadian province of Ontario that connects the Trans @-@ Canada Highway ( Highway 417 ) in Ottawa with Highway 401 between Brockville and Cornwall . The 76 @.@ 4 @-@ kilometre @-@ long ( 47 @.@ 5 mi ) freeway acts as an important trade corridor from Interstate 81 between New York and Eastern Ontario via Highway 401 , as well as the fastest link between Ottawa and Toronto . Highway 416 passes through a largely rural area , except near its northern terminus where it enters the suburbs of Ottawa . The freeway also serves several communities along its length , notably Spencerville and Kemptville .

Highway 416 had two distinct construction phases . Highway 416 " North " was the 21 @-@ kilometre ( 13 mi ) segment starting from an interchange at Highway 417 and bypassing the original route of Highway 16 into Ottawa ( now Prince of Wales Drive ) along a new right @-@ of @-@ way . Highway 416 " South " was the twinning of 57 kilometres ( 35 mi ) of Highway 16 New ? a two @-@ lane expressway bypassing the original highway that was constructed throughout the 1970s and finished in 1983 ? and the construction of a new interchange with Highway 401 . Sections of both opened throughout the late 1990s . Highway 416 was commemorated as the Veterans Memorial Highway on the 54th anniversary of D @-@ Day in 1998 . The final link was officially opened by a World War I veteran and local officials on September 23 , 1999 .

= = Route description = =

Highway 416 begins at an interchange with Highway 401 , branching to the north near the community of Johnstown in the United Counties of Leeds and Grenville . This interchange only provides access to and from the west of Highway 401 , but immediately north of it , a second interchange with the remaining section of Highway 16 provides access from Johnstown and to a parclo interchange with both directions of Highway 401 , as well as to an international crossing into the United States . Proceeding north , the two carriageways of the freeway are separated by a 68 @-@ metre @-@ wide ( 223 ft ) forested median . The route is surrounded by thick forests for the next 10 kilometres ( 6 @.@ 2 mi ) . As it passes beneath Leeds and Grenville County Road 44 , the original routing of Highway 16 ( the Prescott Highway ) south of Spencerville , it exits the forest and enters farm fields . The route travels to the east of the community , access to which is provided by an interchange at County Road 21 , and crosses a swamp and the South Nation River .

Highway 416 crosses under the Prescott Highway a second time ; to the north , the two remain roughly parallel but separated as they pass through a mix of farmland and forest . South of the community of Kemptville , the Prescott Highway crosses the route a third time , with an interchange connecting the two highways . The freeway curves to the northeast , bypassing Kemptville and featuring an interchange with County Road 43 ( formerly Highway 43 ) . It crosses the line of the old Bytown and Prescott Railway , then curves to the northwest , providing an interchange with River Road . At the southeast corner of the River Road interchange is the Veterans Commemorative Park , dedicated in 2000 by the Royal Canadian Legion .

It crosses the Rideau River and enters the City of Ottawa . Aside from the first couple of kilometres north of the Rideau River , the majority of the freeway cuts through swaths of farmland which fill the Ottawa Valley . The median also becomes narrower . The freeway encounters an interchange with Dilworth Road and thereafter with Roger Stevens Drive , the latter providing access to North Gower .

Continuing north of Manotick through fields , Highway 416 is crossed by the Prescott Highway for the fourth and final time as that road turns northeast and travels into downtown Ottawa as Prince of Wales Drive . Shortly thereafter is an interchange with Brophy Drive / Bankfield Road ; the latter provides access to the Prescott Highway / Prince of Wales Drive . Approaching urban Ottawa , the route passes alongside a large quarry , then jogs to the west along an S @-@ curve , crossing the Jock River in the process . After this , an interchange with Fallowfield Road provides access to the suburb of Barrhaven which occupies portions of the land immediately east of the freeway . The route

jogs back to the east along a second S @-@ curve and passes through an aesthetically designed bridge while travelling alongside the Stony Swamp .

The final section of Highway 416 travels parallel to Cedarview Road , which was relocated for the freeway . The Stony Swamp lies west of the route while farmland lies to the east . At the northern end of the swamp is an interchange with West Hunt Club Road . The freeway continues through a section of greenspace before descending gently into a trench . It passes beneath Bruin Road and the Ottawa Central Railway while travelling alongside Lynwood Village in Bells Corners . The highway is crossed by Baseline Road and Richmond Road ; the former provides an onramp to southbound Highway 416 . The freeway ends at a large interchange with the Trans @-@ Canada Highway , Highway 417 ( Exit 131 ) , just south of the Lakeview and Bayshore communities the on the Ottawa River ; downtown Ottawa is to the east and Kanata is to the west .

#### == Design features ==

The Stony Swamp overpass at the southern entrance to Ottawa is a pre @-@ tensioned concrete arch ; the design , which allows the structure to cross the entire right of way with a single span , won the 1996 Award of Excellence from the Portland Cement Association . The bridge acts as a gateway to the National Capital Region and is the longest rigid frame bridge in Ontario with a 59 @-@ metre @-@ long ( 194 ft ) span . In the same vicinity , the freeway sinks below ground level in a trench ; groundwater @-@ retaining walls were installed to prevent the lowering of the water table in adjacent wetlands , therefore mitigating damage to them .

At the Jock River , southwest of Barrhaven , deposits of sensitive leda clay presented a challenge in designing the crossing for the freeway as well as the Canadian National Railway overpass to the north . It was feared that the weight of these structures could destabilize the clay deposits beneath and lead to landslides . In place of the standard heavier aggregate , lighter blast furnace slag , at half the weight , was substituted .

Sloped rock cuts line the side of the freeway in numerous locations . With the intent of reducing the severity of collisions against those cuts , the Ministry of Transportation of Ontario ( MTO ) tested out numerous alternatives to strike a cost @-@ to @-@ benefit balance . The standard slope used by the MTO is vertical , offset from the edge of pavement by 10 metres ( 33 ft ) . The study concluded that although an initially higher investment would be required , the 2 : 1 sloped cut with grass overlaid produced the best results .

#### == History ==

#### == Highway 16 New ==

In 1966 , the Department of Highways ( DHO ) , predecessor to today 's MTO , published the Eastern Ontario Highway Planning Study , identifying the need for a controlled @-@ access highway between Ottawa and Highway 401 . Highway 16 , which passes over the geologically subdued St. Lawrence Lowlands , was selected over Highway 15 , which crosses the undulating Canadian Shield to the west , as the ideal route for the new link . Highway 16 was one of the first roads taken over by the expanding Department of Public Highways in 1918 . The important corridor between the Trans @-@ provincial Highway ( Highway 2 ) and Ottawa was known as the Prescott Highway . In 1925 , the road was given a numerical designation to supplement the name . This highway served the low traffic volumes of the day , but as the number of vehicles increased over the first half of the 20th century , issues arose with the numerous private driveways along the route . To overcome this issue of abutting properties long @-@ established on the old Highway 16 corridor , the DHO began purchasing a new right @-@ of @-@ way between Highway 401 and Century Road by late 1967 for a two @-@ lane bypass of the original alignment , avoiding all the built @-@ up areas that the original Highway 16 encountered . This route was designed to easily accommodate the eventual upgrade to a freeway when traffic volumes necessitated .

Construction of the super two , dubbed Highway 16 New , took place between 1969 and 1983 . The Spencerville Bypass opened by 1971 , connecting with the old highway in the south near Crowder Road and in the north near Ventnor Road . By the end of 1973 , the new highway was completed from immediately north of Highway 401 through Leeds and Grenville United Counties and into Ottawa ? Carleton . This included a bypass around Kemptville and a new structure over the Rideau River . The new highway ended at Dilworth Road ( Regional Road 13 ) .

For nearly a decade , no new construction took place . Then , during the summer of 1982 , the MTO awarded a contract to construct the route north from Dilworth Road towards Manotick , bypassing North Gower and extending the route as far north as Roger Stevens Drive ( Regional Road 6 ) , including a structure over Stevens Creek . Following completion of this first contract , a second contract was awarded for the remaining distance north to Century Road ( Regional Road 8 ) . The project was completed in 1983 , merging into the original route of Highway 16 northeast of the present Prince of Wales Drive overpass .

With the completion of Highway 16 New , the MTO needed only to construct interchanges and the southbound lanes in order to create a full freeway corridor . The upgrade to Highway 416 took place between 1989 and 1999 and was carried out through two separate projects : Highway 416 North was a 21 kilometres ( 13 mi ) freeway on a new alignment through Ottawa and an interchange at Highway 417 , and Highway 416 South was the twinning of 57 kilometres ( 35 mi ) of Highway 16 New and an interchange at Highway 401 .

= = = Change of plans = = =

The original plans for Highway 416 , conceived during the late 1960s , had it enter Ottawa along the Merivale Corridor to merge with the Queensway approximately five kilometres ( 3 @. @ 1 mi ) east of the present interchange . However , when it came time to construct this section , public attitudes had shifted and environmental concerns had come to the forefront of everyday life ; new roads were now subject to intense public scrutiny . Suburbs grew along Merivale Road , prompting the Region of Ottawa ? Carleton to request the MTO decommission the right @- @ of @- @ way along the road in 1977 , which it did . The passing of the Environmental Assessment Act in 1975 , however , meant that new projects were subject to a lengthy investigation of social and environmental concerns .

In 1981 , the MTO began an environmental assessment into a new alignment for the northern connection with the Queensway . It was approved in mid @- @ 1987 , with Cedarview Drive chosen as the ideal alignment for the new freeway . The MTO set out to design a four @- @ lane route to connect the Queensway with Highway 16 New , including a three @- @ level free @- @ flow interchange . A contract for construction of this interchange was awarded in late 1989 and construction began in 1990 . During the 1991 construction season , contracts were awarded to construct several overpasses along the new route . This contract was completed in 1993 , after which budgetary restraints prevented the awarding of further contracts . As a result , aside from the interchange at Highway 417 and some overpasses , construction activity on Highway 416 came to a standstill for two years .

It was during this period that the MTO undertook an engineering review of the entire route in search of cost inefficiencies . Highways 416 and 407 were constructed during a recession in the mid @- @ 1990s . Highway 407 became a tolled highway and for a time it was mentioned in legislative debates that Highway 416 would also be tolled , but ultimately this never happened . Instead , a hiatus in construction allowed engineers to evaluate inefficiencies in bridge and cross @- @ section designs , as well as sensitive clay soils near Ottawa . This initiative led to a cost savings of over C \$ 7 million and several of the unique design features located along the length of the freeway .

= = = Twinning and completion = = =

Work resumed on Highway 416 North following the review . It was opened from Century Road to Hunt Club Road on July 16 , 1996 , and completed on July 31 , 1997 , with the opening of the interchange with Highway 417 . The cost of this section was C \$ 196 million . On December 8 , 1995

, in North Gower , the provincial and federal governments announced a financing deal to ensure Highway 416 South was completed by 2000 . This section of the route was constructed through a process known as twinning in which a second carriageway is built parallel to an existing road . In addition , existing intersections were rebuilt as grade @-@ separated interchanges . With the right @-@ of @-@ way along Highway 16 New already purchased , construction was able to proceed without disruption to local properties or traffic .

The 57 @-@ kilometre @-@ long ( 35 mi ) project was constructed through five contracts . The first was awarded to Tarmac Canada on June 10 , 1996 , calling for twinning of 7 @. @ 6 kilometres ( 4 @. @ 7 mi ) from Century Road south to Roger Stevens Drive . Another contract was awarded one month later to Bot Construction , on August 19 . This contract involved the section from Roger Stevens Drive south to what was then Highway 43 , a distance of 13 kilometres ( 8 @. @ 1 mi ) . On June 12 , 1997 , the first section opened , connecting with the Ottawa Bypass at Century Road . On July 10 , the third contract was awarded to Ambro Construction to construct the 10 @-@ kilometre ( 6 @. @ 2 mi ) section from Highway 43 south to Grenville County Road 20 ( Oxford Station Road ) . Another contract followed on October 21 for the 12 kilometres ( 7 @. @ 5 mi ) south to Grenville County Road 20 ( Shanly Road ) which was awarded to Bot Construction . The fifth and final contract was awarded to Ambro Construction on April 8 , 1998 , calling for the construction of the southern nine kilometres ( 5 @. @ 6 mi ) and the two flyover ramps at Highway 401 . The section between Roger Stevens Drive and what had now become Leeds and Grenville County Road 43 , including a second crossing of the Rideau River , opened to traffic on June 26 , 1998 . This was followed two months later by the section between Highway 43 and Oxford Station Road , which opened on August 24 .

On the fifty @-@ fourth anniversary of D @-@ Day , June 6 , 1998 , then Transportation Minister Tony Clement unveiled two signs in Ottawa and formally declared the entire length of Highway 416 as the Veterans Memorial Highway , despite earlier reluctance from previous minister Al Palladini . Six additional signs were also installed along the length of the route . At the time , the Veterans Memorial Parkway in London already existed . Since then , two additional veterans highways have been named : on October 20 , 2002 , the Veterans Highway was designated in Halton Region along Regional Road 25 ; on September 23 , 2010 , the Niagara Veterans Memorial Highway was designated in Niagara Falls along Regional Road 420 . A ceremony was held in Johnstown on September 23 , 1999 to open the final section of Highway 416 that would complete the link from Highway 401 to Highway 417 . Premier Mike Harris , Transportation Minister David Turnbull and World War I Veteran James W. Fraser officially opened the highway .

On December 14 , 2009 , there was a 60 ? 70 vehicle pileup due to fog and icy conditions , forcing the closure of the highway in both directions .

= = Exit list = =

The following table lists the major junctions along Highway 416 , as noted by the Ministry of Transportation of Ontario .