

Historical Explanation and Current Conditions of Ditch 14 (Lambert Creek) and its Branch Ditches

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Historically, when settlers came to the Vadnais Lake area, the historic “*Lambert Lake*” existed as a shallow lake with a natural flowage outlet downstream to what is now *East Vadnais Lake* (East Vadnais and West Vadnais Lakes are now not hydraulically-connected). This system was called and is still referred to today as *Lambert Creek*. Today, the phrase *Lambert Lake* is still used to refer to the greater wetland basin. Upstream and northeast from Lambert Lake were the basins of *Grass Lake* and *Rice Lake* in present-day Vadnais Heights and White Bear Township and *Goose Lake* in the City of White Bear Lake. After settlement and ditching, Branches #5, #4, #3, and #2 were dug to drain Lambert Lake, and ditching was completed downstream and upstream to form *Ramsey County Ditch 14*.

Today we accept the main Ditch 14 as starting and having its "headwaters" just south of Whitaker St at the outlet of Whitaker Pond, as well as where the Sobota Slough stream flows from West Goose Lake and into the main Ditch 14 channel, south and west of the Whitaker Ct development in White Bear Lake. Ultimately, this system drains into East Vadnais Lake, and is a contributor to the St. Paul Regional Water Services drinking water supply. In 1993, joint powers installed weirs on the west outlet of Grass Lake and on the west outlet of Rice Lake to reduce nutrient loading into East Vadnais Lake. In 2005, a sheet pile weir was constructed in the Lambert Lake wetland to reduce phosphorus loading and reduce flooding by sheet-flowing storm water flows through the wetland. The Lambert Creek subwatershed is 3,600 acres and is heavily influenced by stormwater. Ramsey County transferred ditch authority of Ditch 14 and its branch ditches to VLAWMO in 1987.

Ditch 14 Repairs and Improvements

According to the *Proposed County Ditch 14 Improvement* map dated January 15, 1980 the last major Lambert Creek culvert and excavation improvements done in the 1980s were only completed on the main Ditch 14 and not on the branch ditches, however, the 1987 survey includes not only Ditch 14, but surveyed most of Branch #3, Branch #5, and Branch #5A. The survey scope did not include Branch #1, Branch #2, Branch #4, and Branch #5B. The *Engineer’s Report on County Ditch 14*, associated with the proposed improvement map referenced above, states that the repairs and improvements were only to take place on the “main branch of County Ditch 14 west of Otter Lake Road... and the outlet at Lake Vadnais 3.6 miles downstream.” VLAWMO has not been able to find other records from available archives on other repairs and improvements previous to the 1980s, however, looking at available aerials from 1940, 1953, 1974, 1985, and 1991 other repairs and improvements on Ditch 14, as well as its branches, have occurred between the 1950s and the 1970s.

Since the 1980s, VLAWMO has worked with its joint powers and numerous partners to install and perform improvements on the Ditch. 4 weir and ponding systems have been installed since 1993 to

increase storage capacity, reduce flooding, and reduce nutrient export downstream to East Vadnais Lake. There have also been 5 streambank restorations implemented on the system since 2010.

Ditch 13 – White Bear Lake

What was historically termed "Dillon(s) Ditch, Ditch #13 or Ditch #3" in the past is now referred to as *Ditch 13* by VLAWMO as recognized in its 2017-2026 Comprehensive Water Management Plan. The Ditch was buried sometime in the late 70s or early 1980s as a 96" RCP that runs from 5th Street in White Bear Lake into the forebay of Whitaker Pond on Whitaker Street, at a length of just under ¾ mile. The watershed area of Ditch 13 and Whitaker Pond is about 640 acres of residential drainage. Before Whitaker Pond was originally constructed in the 1990s, and reconstructed in 2010, Ditch 13 connected directly to Ditch 14. Though undersized, the Pond provides storage capacity and good TSS removal.

Branch #1 – White Bear Township

What we now consider Branch Ditch #1 in the north side of Rice Lake was the old extent of where Ramsey County Ditch 14 ended, and what we now consider as Ditch 14 and Lambert Creek that runs into Rice Lake from the east, goes under Otter Lake Rd and up to Whitaker Pond in White Bear Lake. Branch #1 still exists today, though it looks as though it hasn't been maintained since the early 1940s or 50s. The Branch #1 now funnels water from the apartment complex to the north into Rice Lake. This area was last explored by VLAWMO staff in 2016 as part of the Lambert Creek Bacteria Study.

Branch #2 – Vadnais Heights

Branch Ditch #2 that runs south of the Grass Lake wetland, east of 35E, and south under Labore Rd in an "L" shape also appears to have last been maintained in the 1970s. This Branch has not been known to have been recently inspected, except for a recent wetland delineation done in 2016 for development of storage units south of Ditch #2.

Branch #3 – Vadnais Heights

Looking at Branch #3, the 1940 aerial shows its oldest footprint extended west past what is now Oakcrest Drive and almost to what is now Jay Way. However, what looks like the last cleaning of Branch #3 west of Clover Ave was done in the 1970s and only about as far west as today's Kaitlin Drive extends, to what is accepted and historically documented as the Branch's "legal" extent. East of Clover Ave it appears that Branch #3 was maintained about 700 feet east in the 1980s, but it doesn't look like the rest of Branch #3 going through the Lambert Lake wetland and linking up with the main Ditch #14 has been excavated or maintained since the 1953 aerial.

Branch #3 flows southeast under Clover Ave, through upper Lambert wetland, then south under County Rd F and into the main Lambert Lake wetland and connects to the main Ditch 14 channel just after the Lambert Lake weir.

Branch #4 – Vadnais Heights

Branch Ditch #4 north of County Road E, beginning east of 35E and flowing west under 35E, the BNSF line, and Centerville Road. The ditch's delta outlets into the Lambert Lake wetland, roughly 500 feet north of Centerville Road.

Branch #4 appears to have last been maintained in the 1970s. This Branch east of Centerville Road was last inspected in 2015 by VLAWMO staff, but the section west of Centerville has not been inspected as of recent. There has been no known flooding or high water complaints or issues in this area in the last few years.

Branch #5 and forks #5A & #5B – Vadnais Heights

Branch #5A drains south under County Road F, starting just west of Community Park, south under Bear Ave North, meeting up with Branch #5B and forming *Branch #5*. *Branch #5B* used to connect the Bear Ave wetland south, but the Colleen Drive development cut off this connection in the late 80s. #5B drains the area north of Bear Park and south of Colleen Drive. After A and B join, Branch #5 runs southeast into a 24" RCP before going under Edgerton Street and under the Edgerton Grove development and daylights

Going off of historic aerials, for maintenance/dredging, it looks like Branch #5A was last dredged in the 60's to early 70's, Branch #5B last had work done north of Bear Park, along with some pond and drainage work, as near as the 1990s and 2000s, but not up to Colleen Drive. As mentioned above, it appears that when the Colleen Drive development went in between 1985 and 1991, Branch #5B was cut off from its north half, no longer connecting the "Bear Ave" wetland. However, Branch #5A runs through that same Bear Ave wetland and remains connected and "functioning" with vegetation removal work planned by the City of Vadnais Heights within the next year (2017-2018). The extent of Branch #5A north of County Road F was filled in by the Village of Vadnais Heights by 1975, and it is uncertain whether it was reestablished to the west of the fill to help drain the wetland south of Oak Drive or not, but it appears that it was not.