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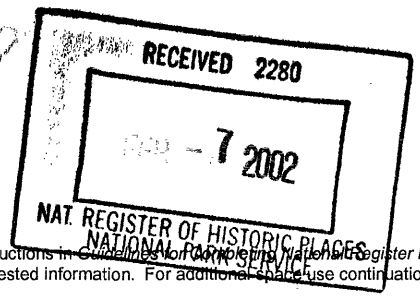

National Register of Historic Places Multiple Property Documentation Form

This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900a). Type all entries.

_X_ New Submission ____ Amended Submission

A. Name of Multiple Property Listing

Dairy Farm Properties of the Snoqualmie River Valley, Washington

B. Associated Historic Contexts

(name each associated historic context, identifying theme, geographic area, and chronological period for each)

The Evolution of Dairy Farming in the Snoqualmie River Valley - 1890 to 1960

C. Form Prepared by

name/title Florence K. Lentz, for King County Landmarks and Heritage Program

organization _____ date DEC 2001

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city or town Seattle state WA zip code 98104

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards for Planning and Evaluation. (__ See continuation sheet for additional comments.)

Allyson M — 1-10-02

Signature of certifying official — Date

Washington State Historic Preservation Office

State or Federal agency and bureau

I, hereby, certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature of the Keeper of the National Register — 3/22/02

Date of Action

Table of Contents for Written Narrative

Provide the following information on continuation sheets. Cite the letter and the title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Fill in page numbers for each section in the space below.

E. STATEMENT OF HISTORIC CONTEXTS

(If more than one historic context is documented, present them in sequential order.)

Introduction

The river valleys of Western Washington, with their mild marine climate, fertile alluvial soils, and proximity to urban markets, were admirably suited to an economy sustained by agriculture. As such, dairy farming in particular rose to the forefront throughout the region after 1890. The industry was encouraged in its formative years by progressive state legislation and by nationally significant, scientific advances in the technology of dairying. In the Snoqualmie Valley of King and Snohomish Counties, the golden age of dairy farming lasted well into the 1950s. Family dairy farming pervaded and shaped the cultural landscape of the valley during this period.

After 1950, changing market conditions forced local dairy farmers to modernize their operations with new methods through the mid-1970s and has resulted in evolving farmstead design. Over the last two decades of the 20th century, family dairying has declined at an accelerated pace. Despite the recent erosion of the traditional pattern of dairying in the valley, important traces remain discernable on the landscape even today.

Organization of the Multiple Property Document

This multiple property documentation form identifies one historic context - Dairy Farming in the Snoqualmie Valley from 1890 to 1960 - and two associated property types - Dairy Farmsteads as complete complexes, and traditional Hay Barns as individual structures. The context statement outlines general historic developments related to regional and local dairying. The discussion of property types includes descriptions of physical characteristics, evaluations of significance, and registration standards for both property types.

Background: Early Agriculture in the Snoqualmie Valley

The practice of Euro-American agriculture in the Snoqualmie River Valley began in a limited fashion in the 1850s and 1860s with the first permanent settlements above Snoqualmie Falls. On the open prairie where the native Snoqualmie people had long harvested seasonal berries and root crops, the Euro-American's staked their claims. Here they established primitive subsistence farms, authorized by the Donation Land Law, the Homestead Act, and later by school and railroad land grand sales. Jeremiah Borst arrived in 1858 over the Cedar River Pack Trail and settled at the site of Fort Alden on the Snoqualmie River at Meadowbrook. Other pioneers soon followed, including Josiah Merritt, Mats and Peter Peterson, A. C. Kimball, and Joseph and Lucinda Fares (Corliss, pp. 28-31).

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

A handful of pioneer farmers settled in the Lower Valley in the 1860s, but the forested bottomlands there primarily attracted logging operations. Logging camps dotted the banks of the Snoqualmie River which providing a means of floating logs to market. Many settlers of the area began by working in the camps. Then they established and cleared their own claims in close proximity to the river. Farmers often supplemented their meager income with the production of hand-split shakes and shingles. Ship knees cut from stumps brought from forty to fifty cents a foot. One Snohomish City newspaper reported 250 ship knees ready for sale at a local valley farm (Whitfield, p. 645).

From Snohomish City to Snoqualmie Falls, a linear pattern of pioneer farmsteads emerged. A newspaper reporter from the Northern Star penned a description of the country following his excursion up the river on the steamboat "Nellie" in 1877:

> *...by the river there is a settler on nearly every quarter section between this place and the Falls. In many places the mere shanty, the necessity of every newcomer, has given place to more comfortable dwellings. The area of forest that girts these dwellings...has been in many instances very much lessened, the unsightly stumps are everywhere disappearing, patches of grain and vegetables can be seen where only a short time since the nettle grew among the tangled vine maple.... Settlers are daily coming in. Already they are compelled to go back from the river bank for timber or agricultural lands (Bagley, pp. 808-809).*

In the Upper Valley, where agriculture preceded lumbering, an important early cash crop was bacon. Hogs were cheaply raised, and were of sufficient value to justify the long trip to market. By mule or horseback, the bacon was hauled from the prairie to the base of the falls and loaded onto small river canoes which carried it downriver as far as Snohomish City. From there it was transported by salt-water canoe to settlements on Puget Sound. One of the more prominent operations was run by Jeremiah Borst who operated a thriving business in cured pork. Borst bought up his neighbors' hogs and handled the butchering, curing, packaging, and marketing himself. Borst also maintained extensive apple orchards and produced a second cash crop of dried apples for market in Seattle (Marts, p. 45; Corliss, pp. 32-33).

Subsistence farms in the Lower Snoquamlie Valley produced a wider variety of crops which found a local market in the logging camps as well as in Seattle. An inventory of products exhibited at the Snohomish County Fair in 1877 is undoubtedly representative of the range of foodstuffs grown on the Snoqualmie during that time. The list included: wheat, potatoes, leaf tobacco, chicory, vegetables of all sorts, canary seed, grapes, apples, pears, butter, eggs, timothy, red clover, and barreled meats (Whitfield, p. 634).

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

In 1883, the editor of the Snohomish Star described several farms along the river between Snohomish and Cherry Valley. One farmstead, owned by a Mr. Foye, included 50 acres under cultivation, and 60 acres slashed and burned for pasture. This farm produced hay, turnips, potatoes, and orchard fruit, and its animal stock consisted of 135 sheep, 4 horses, and 32 head of cattle including 9 milk cows. A more modest operation, owned by Frank Phelps, supported 65 acres under cultivation in oats, potatoes, and turnips, along with 37 head of cattle, 4 horses, and 47 sheep. Its equipment included plows, rakes, a mower, and a "good wagon" (Whitfield, p. 644).

The early inclination of Snoqualmie Valley farmers to raise livestock foreshadowed the region's 20th-century dairy industry. Dairying as an agricultural specialty however, awaited the expansion of area markets and the improvement of transportation systems. In the meanwhile, a Hops as a cash crop dominated the local farm scene. Hops were introduced in the Upper Valley and in the vicinity of Fall City in the late 1870s. Land values soared and many valley farmers became wealthy overnight. Cultivation was concentrated in the Upper Valley, centering on the old Borst place where the Hop Growers' Association established a 1500-acre hop ranch in 1882.

The 1500 Hop Ranch brought prosperity to the valley for nearly twelve years. Every picking season there was ample work for men and women in the area, as well as for workers from Eastern Washington and other parts of Puget Sound. Native Americans from as far away as British Columbia came in their war canoes to take part in the harvest. The ranch also produced a wide variety of fruits, vegetables, hay, and livestock. In 1887, T. G. Wilson, secretary and manager of the Association, reported that the farm had shipped 400 to 500 tons of hops and other products that season, and that it employed over 1200 men and women at the height of the harvest (Bagley, p. 789).

In the early 1890s, Western Washington's hop culture was ruined by the influx of a destructive aphid. Simultaneously, prices for hops on the worldwide market plummeted. The Snoqualmie Valley Hop Ranch, already struggling with the high cost of bringing in supplies to the prairie, sold out to a majority partner. The farm changed hands a few times in the 1890s and became known as Meadowbrook Farm. The Northwest Horticulturist, Agriculturist, and Dairyman reported in its September 1904 issue:

> *The Meadow Brook Farm, Snoqualmie, have a fine herd of 75 purebred registered Holstein Fressians, besides 25 head of very choice grades. They are offering some young stock for sale. Their potato patch consists of 550 acres, with a very promising crop. They are operating a creamery.*

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

The owners of Meadowbrook Farm had correctly envisioned the future of agriculture in King County with their shift in emphasis to dairying. For the next fifty years and beyond in the Snoqualmie Valley, dairying would remain the dominant form of agricultural activity.

The Rise of Dairying

At the turn of the century, several factors worked in concert to strengthen a fledgling dairy industry in the Snoqualmie Valley and elsewhere in Western Washington. The advent of rail transportation, the growth of both local and distant markets for dairy products, and crucial advancements in dairying technology together made this form of specialization economically feasible for the first time. These factors and others will be individually discussed in separate sections below.

The swift decline of hops as a cash crop in the 1890s brought an equally sharp decline in land values. In the Fall City area and in the Upper Snoqualmie Valley, many large farms were subdivided and sold. A more intensive kind of farming, such as dairying, was required on these smaller parcels. The valley was ripe for a new form of profitable land use (Marts, p. 48).

On a state-wide scale, dairying grew in stature in the 1890s. The Washington State Dairymen's Association was found in 1892. Its members were influential in the passage of legislation establishing the Washington State Dairy and Food Commission several years later. This commission was empowered to inspect all dairy products suspected of containing impurities (Hanson Papers, WSU). At the State Agricultural College in Pullman, the Dairy School was opened in 1896 and a Dairy Short Course initiated to promote the latest scientific practices among the working dairymen of the state. Publications devoted in whole or in part to dairy farming proliferated. Some of the more notable periodicals included the Pacific Coast Dairyman, published in Tacoma, and Northwest Horticulturist, Agriculturist, and Dairyman and Horn and Hoof, published in Seattle. Bulletins, articles, and informational pamphlets from the State Agricultural College and its experimental stations and extension services became widely available after 1900.

When President H. L. Blanchard of the Washington State Dairymen's Association addressed the annual membership meeting in Everett in 1901, he predicted a glowing future for the up-and-coming industry, and summarized its very recent history:

> *"Prior to eight years ago, crude and unbusinesslike methods characterized the work of our dairy farms, without organization or definite purpose. The dairy products of these farms possessed uniformity in neither color, quantity, nor*

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

value. It was mostly bartered for groceries and other family needs for such price as the farmer could get. Instead of a makeshift [sic], dairying has become systematized, and is now being prosecuted under modern business methods. For all of these changes due credit must be given to the influences emanating from the state agricultural college...(NW H, A,D, Jan. 1902)."

All of these positive advances soon resulted in the growth in King County's dairy industry. According to U. S. Census figures, the number of dairy cows maintained for milk production on King County farms rose decade by decade in the following fashion, with the sharpest increases occurring after 1890: 280 cows in 1860; 628 in 1870; 1343 in 1880; 3962 in 1890; 8568 in 1900; and 18,166 in 1910 (Washington Livestock, p. 92).

By 1920, dairying had become the predominant agricultural activity in the Snoqualmie Valley (Marts, p. 49). Locally, this fact was likely acknowledged much earlier. In the summer of 1914, the local newspaper the Duvall Citizen advised area farmers to focus on preparing exhibits for the third annual Snoqualmie Valley Fair that would reflect "the principal industry of the valley--dairying" (Duvall Citizen, May 21, 1914).

In a statistical study of 21 Snoqualmie Valley dairy farms, published in 1940 by the Agricultural Extension Service, gross receipts per farm averaged between $4,000 and $5,000 per year. Most of the farmsteads covered in this analysis boasted a comfortable dwelling, a large hay barn raised above flood water level with a concrete floor, and one or more silos. Although the average farm size was 110 acres, most were in fact much smaller. A typical farm was about 40 acres, and supported 17 dairy cows, with 14 acres of clover and grass hay, 7 acres of silage, and 18 acres of tillable pasture (Marts, pp. 49-50).

An interesting phenomenon in valley land use was first noted in 1929 by the historian Clarence Bagley who observed that Snohomish County received the most fertile portion of the Lower Valley, and that King County farms were less prosperous than those situated north of Duvall (Bagley, p. 807). The geographer Marion Marts made the same economic observation in 1944, and in partial explanation theorized that the southern half of the Lower Snoqualmie Valley, in the Fall City and Carnation area, had perhaps never quite recovered from the collapse of the hops culture in the 1890s (Marts, p. 53). Even as late as 1990, some of the most modern, progressive dairy farms in the Snoqualmie Valley lay north of the town of Duvall.

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

Dairying remained in ascendancy in the valley until the late 1950s when the business economics became less favorable. Long-time dairymen in the valley have cited the increase of government regulation at all levels, the lack of effective flood control, and growing suburban development pressure in the surrounding uplands as major factors in the slow decline that followed. The rate of failure of small family dairy farms accelerated dramatically in the final two decades of the century. In 1940, there were 23 fully operational dairies between Duvall and Carnation on the East side of the valley alone. By 1991, there were less than five (Kosters, 5/2/91). Today, in the year 2000, approximately 15 family dairies are all that remain from the head of the valley at North Bend, to the mouth of the Snoqualmie River at Monroe (Nelson, 9/13/00; 9/21/00).

Improvements in Transportation

Over the years, improvements in transportation did much to ensure the early development and continued growth of dairying in the somewhat isolated Snoqualmie Valley. For several decades during the pioneer period the river itself was the avenue of travel and commerce in the Lower Valley. Farms and small settlements faced the stream and were built on the high ground that flanked the channel. Snohomish City served as the commercial outlet for Lower Snoqualmie Valley produce and as the point of departure for markets on Puget Sound. During this era, Native Americans in their dugout canoes, ferried in settlers, loggers, and a good portion of their supplies, returning downriver to Snohomish with the products of forest and field.

It became increasingly apparent to Snoqualmie settlers that the agricultural potential of the valley was dependent upon establishing regular steamboat connections to Puget Sound. The wood-burning sternwheeler "Nellie" was launched in Seattle in 1876, opening a colorful period of steamer navigation on the Snoqualmie River. For some fifteen years, the "Nellie" and her eventual replacement, the "Glide," plied the river carrying freight and passengers. These boats were only occasionally able to travel as far upstream as "The Landing" at Fall City, because in low water hidden pilings and riffles could obstruct their progress (Corliss, p. 54).

The hops boom spurred the construction of smaller river boats of light draft such as the reliable "Alki" and the "Mame." Some of these vessels hauled passengers, others strictly freight. Baled hops were on-loaded from farms in the vicinity of the cities of Tolt and Fall City, including those from the Hop Ranch warehouse just below Fall City.

With the coming of the railroad to Fall City and the Upper Valley in 1889, steamer transport declined, but small local boats remained in service on the lower river well into the 1900s, particularly for the movement of dairy products to market. August Marshall of Fall City operated

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

a creamery near the river in the 1890s. He built a boat to deliver his product and to pick up the milk of his suppliers along the river as well. Carnation Farms, established in 1909 near Tolt, also hauled milk down river by boat to their condensery in Monroe (Corliss, p. 60). The Horatio Allen family, who acquired their Cherry Valley farm near Duvall in 1904, shipped their home-separated cream to Monroe by boat for some years (Zaremba, 5/22/91). Long-time valley resident Ole Ronnei remembers milk from his family's farm near Novelty being sent by ferryboat to the condensery in Monroe opened in 1908 (Duvall Vignettes, Vol. 1, p. 48).

The earliest railroad to reach the Snoqualmie Valley was the Seattle-based Seattle, Lakeshore, and Eastern, which arrived in Fall City in 1889. From there, the line was pushed up the southwest shore of the river to fledgling settlements on the prairie. The coming of the railroad was of immense importance to the Hop Ranch. Although the line stopped short of crossing Snoqualmie Pass into Eastern Washington, it nevertheless gave the Upper Valley a direct link to Seattle and, for the first time, a means of hauling farm and dairy produce to market by other than wagon road (Hill, pp. 128-129).

In the Lower Snoqualmie Valley, operational rail service was not put in place until some twenty years later. The Great Northern Railroad first built a branch line south from Monroe as far as Tolt in 1910. This line was abandoned only seven years later, and thus its greatest impact seems to have been the forced relocation of the village of Cherry Valley on the river's edge to the newly laid-out townsite of Duvall on the hillside above (Funk, p. 21).

The railroad, which exerted the most lasting influence on the entire Snoqualmie Valley, was the Chicago, Milwaukee, and St. Paul. A branch line was constructed down the valley from the city of Cedar Falls north to Everett in 1911. This line proved a great boom to local logging operations, to agriculture, and most significantly to local dairying. Passenger service continued until 1930, and freight service until 1973 (Tolt/Carnation, pp. 77-78).

The primary means of moving Snoqualmie Valley milk to market between 1911 and about 1920, when gasoline-engine trucks came into regular use, was the railroad. At various Milwaukee Road sidings up the length of the valley, were milk platforms to which farmers daily hauled their ten-gallon cans. Many of these sidings are still indicated on modern-day Kroll maps. According to one valley railroad historian, milk platforms were situated from north to south at the following locations: High Rock (above the King-Snohomish County line), Bacus, Duvall, Novelty, Stuart (especially for the pick-up of milk from Carnation Farm across the river), Tolt (at the Farmers Cooperative Milk Plant), Pleasant Hill, Fall City, and Snoqualmie Falls (Miller, 9/24/91).

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

Early settlers to the Upper Valley arrived on foot over the Cedar River Pack Trail. Gradually crude trails became wagon roads. When the Hop Ranch began operations in 1882, the only method of hauling in supplies was over the wagon road from Issaquah to Fall City and up a steep grade on the southwest side of the river to the prairie. It was not until 1890 that a wagon road on the opposite side of the river, following the present-day S.R. #203, was completed (Bagley, p. 790).

In the Lower Valley, the river served so effectively as a highway that wagon roads were somewhat less crucial in the early days. An Anderson map of King County, dated 1894, delineates a wagon road extending north from Fall City to the villages of Tolt and Cherry Valley along the east bank of the river. This route (S.R. #203) was made part of the state road system in 1915 (Tolt/Carnation, p. 2). Its improvement, and that of the West Snoqualmie Valley Road, altered the traditional pattern of farmstead development in the Lower Valley. New dwellings and barns were increasingly constructed along these arterial roads at the valley's edge, rather than along the meandering river channel (Marts, p. 22).

The Snoqualmie Pass road, a segment of the interstate Sunset Highway, was completed in 1915. This year-around automobile route linked Seattle and Puget Sound with all points east of the Cascade Mountains, and a portion of it traversed the Snoqualmie Valley, passing through North Bend, Snoqualmie, and Fall City. Westward from Fall City, the road split into two legs: one leading along the old wagon road to Issaquah, Renton, and thus into Seattle; the other leading to Redmond, Kirkland, and thence via the north shore of Lake Washington into Seattle (Bagley, p. 278; Marts, p. 22). Snoqualmie Valley dairymen now enjoyed easy access to markets in Seattle, and improved access to the valued alfalfa hay from Kittitas County in Eastern Washington.

In 1940 and '41, construction of the "Cross State Highway" resulted in the widening of the main street of North Bend, and a more direct connection from Snoqualmie Pass to the new Lacey V. Murrow Bridge across Lake Washington into Seattle. With this new configuration, the towns of Snoqualmie and Fall City were left off the main route. Outlet roads from the highway to these communities were built to compensate (Battey, 1990).

The Growth of Markets and Co-operatives

The earliest markets for Snoqualmie Valley dairy products (primarily butter) were the small trading posts, logging camps, and settlements along the river. "Ranch butter," or butter hand-churned on the farm, was a valued commodity. Lucinda Fares, legendary as the first white woman in the valley, homesteaded the land known as the Tollgate Farm. Stories of her trained cows and her plentiful, if not very pure, butter have passed down through the years. Like other subsistence

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

farmers, she sold her ranch butter to make ends meet (Hill, pp. 15-16).

Ranch butter became a thing of the past when small local creameries came into being. Creameries improved the uniformity of butter and provided better prices per pound. King County supported nineteen small creameries in 1901 and a total butter output of 973,206 pounds, according to a statement issued by the Washington State Dairy and Food Commissioner (NW H,A,D, Jan. 1902).

A good number of these creameries were situated in, or within easy access to, the Snoqualmie Valley. In Snohomish City, a creamery was in operation as early as 1894 (Marts, p. 48). By October of 1900, the Austin Brothers of Monroe were running a well-equipped creamery there in conjunction with their 65-cow dairy. The creamery featured a 1500-pound capacity separator, and a No. 2 Fargo's Victor Combined churn and butter worker (NW H,A,D, Oct. 1900). August Marshall is said to have founded a creamery in Fall City in the 1890s. Another source dates Fall City's first creamery at 1902, and states that this facility sold its butter locally and in Seattle (Marts, p. 49). Robert Davis of Tolt ran a creamery with two separators in an old saloon sometime after 1895. The Tolt Cooperative Creamery was established in January of 1900. In 1910, when the Great Northern Railroad entered Tolt, the Farmers Cooperative Milk Plant was doing business on West Entwhistle Street (Tolt/Carnation, pp. 1, 54, 77). Meadowbrook Farm operated its own creamery in the Upper Valley by 1904. On August 20, 1914, the Duvall Citizen announced that "the sweet creamery at Duvall is now paying 37 cents a pound for butter fat."

The discovery of gold in the Klondike in 1897 opened an unexpected new market for King County dairy products. In the White River Valley at Kent, E. A. Stuart established the Carnation Company's first condensery for the manufacture of evaporated milk. Others soon followed. The Northwest Milk Condensing Company (later to become the Alpine Dairy, and still later, Darigold) opened in Issaquah in 1908. That same year, the Carnation Company put another condensery into operation in Monroe, capturing a producer area that extended the length of the Lower Valley (Marshall, appendix). The river and, by 1910, the railroad, ensured quick delivery to that plant.

The proliferation of creameries in the Snoqualmie Valley occurred in tandem with an important advance in dairying technology, the invention of the centrifugal home separator. Prior to its use, farmers delivered their fresh whole milk daily by wagon or boat to the local creamery. Here the cream was separated and the skim milk returned to each individual dairyman, who then hauled it home again to feed his calves and pigs. It was a time-consuming, labor intensive process, both for the farmer and the creamery, and spoilage was not an infrequent result.

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

There were numerous advantages to the new home separator system, in which the butterfat was removed on the farm, chilled for delivery to the creamery, and the skim milk kept at home. The immediate benefit to the creamery was a decreased need for equipment and the labor to operate it. The Northwest...Dairyman magazine published a number of articles during this period on the improved aspects of Washington's creameries owing to this new system. It pointed out that, "...*one creamery can take care of a larger territory, as cream can be economically gathered from a much greater distance than would be practical with the whole milk system*" (NW H,A,D April 1900).

The population of Seattle increased dramatically in the 1890s and the first decade of the twentieth century. Pasteurized and bottled milk was first introduced there in 1899, and thereafter the market for fluid milk expanded steadily. Still, the surrounding King County dairy industry easily kept pace and there remained plenty of reserve product for manufacture and export outside the area. World War I, however, triggered a sudden new demand for whole milk products in Seattle. City bottling plants and condenseries sought ever-increasing quantities of local milk, and the small country creameries lost business. In response, dairy farmers throughout the country expanded the size of their herds. The once-indispensable home separator fell into disuse as many producers entered Seattle's fluid milk market (United Dairymen's Association, p. 41).

When the war ended, farm prices in general fell sharply. There were great surpluses of milk, and processing plants sometimes refused milk at any price. Scales, tests, and hauling charges became increasingly inconsistent and unfair from the dairyman's point of view. To remedy the situation many counties in Washington formed local dairymen's associations that functioned as bargaining associations or as co-operatives. In King County, the Seattle Milk Shippers Association was organized as a co-operative in 1921. This group became one of the first to join the region-wide United Dairymen's Association, most commonly known through its sales agency as Darigold. In 1936, the King County association changed its name to the Seattle Milk Producers Association (United Dairymen's Association, p. 63).

Many Snoqualmie Valley farmers joined this co-op from its inception and stayed on as loyal members. Others remained independent, selling at various times to Hans Forester's Alpine Dairy in Issaquah, to Carnation in Monroe (the condensery remained in operation until 1940) or, in later decades, to Arden/Foremost or Safeway in Seattle.

Marion Marts' 1944 study of land-use in the valley provides a snapshot of market conditions in that decade. Two dairymen in the Upper Valley were bottling and distributing locally. A processing plant was operating in the town of Snoqualmie. Surplus in the Upper Valley went to Alpine in Issaquah, or was shipped to Seattle. Meadowbrook Farm was by then selling its milk to an

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

independent wholesaler in Seattle. In the Lower Valley, where most farmers belonged to the Darigold co-operative, five or six trucks made daily rounds, picking up milk bound for plants in the city. Carnation Farm was retailing its own milk in Seattle (Marts, p. 52).

In 1950, valley dairyman Bill Hjertoos of Carnation helped to organize remaining independents into the Snoqualmie Valley Dairymen's Association, and then into a larger umbrella bargaining association, the Washington Milk Producers (Hjertoos-Thorson family files). Those organizations eventually merged with the existing Darigold co-op (Scott, 9/23/92).

Not all farmers in the valley sold their milk to processors. In the Upper Valley where there was a solid local market, a number of "producer-handlers" produced, bottled, and distributed their own milk. The early-day Meadowbrook Farm, and the once-prosperous Ribary, Sorenson, and Monte Vista dairies are no longer in operation (Battey, 8/20/92). But Normanbrook Farm, just outside North Bend, remains in business today after seventy years, still bottling milk, half-and-half, and chocolate milk produced on the farm. In the Lower Valley, the Carnation Company continued to bottle and distribute its own product in Seattle until recently. Milk produced at Walter De Jong's several valley farms was still bottled in Monroe and sold under the family's Sno-King label until the late 1990s (Bernard, 9/25/92; Nelson, 9/13/00).

After 1963, all milk from Snoqualmie Valley dairy farms was processed and distributed within the immediate Seattle milkshed, and most of it went for fluid consumption (WA State Dept. of Ag., Atlas of WA Agriculture, p. 17). In the 1990s and today, valley dairy farmers sell to Darigold and to Vitamilk (Bernard, 9/25/92).

Dairy Industry Regulations

Governmental regulation of Washington's dairy industry dates back to 1895 and the passage of legislation entitled "Law Relating to Dairy Products." This law prohibited the sale of impure and unwholesome products, regulated oleo-margarine and other dairy substitutes, and required the stamping of butter with the date and source of manufacture. A State Food and Dairy Commissioner was appointed and charged with enforcing these regulations. To do so the Commissioner was empowered to inspect suspicious dairy products, but not, as yet, to visit private farms. Tighter regulations requiring the inspection of all milk sold in first-class cities awaited the passage of new legislation in 1907.

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

In 1919 a far-reaching new state law designed to regulate the "sale and manufacture of milk and milk products" was enacted. Still on the books today and codified as RCW 15.32, this legislation directly impacted day-to-day practices on the dairy farm and farmstead design. Although, from the mid-1890s, dairy industry and extension service literature had stressed the important connection between cleanliness on the farm and a high quality product, this new law for the first time set official standards for sanitary conditions in barns and creameries.

The law required that water for the herd be kept clean, that no manure piles be maintained in yards or enclosures with the cows, that the milk house be a separate structure from the barn with no manure or pig pens nearby, that no filth be allowed within fifty feet of milking stanchions, that milking barns and milk houses be whitewashed at least once a year, that the milker's clothes be clean, and that all equipment such as pails, cans, milking stools and milking machines be maintained in a sanitary condition (WA State Dept. of Ag., Laws and Regulations Relating to Dairying).

In 1949 the "Fluid Milk Law," commonly known as the Grade A Milk Ordinance, was passed by the state legislature and codified as RCW 15.36. This law provided for the grading of fluid milk and milk products, and further tightened regulations governing dairy farm practices and farmstead design.

Most farmers in the Snoqualmie Valley sought to update their farming operations to meet the standards set for Grade A raw milk. The new physical requirements for the Grade A dairy farm included: proper lighting, good ventilation, and no overcrowding in milking barns or sections of dairy barns designated for milking; floors and gutters of the milking area built of concrete or another impervious, easily cleaned material; no horses, swine, or poultry allowed in the milking areas and dry cows, bulls, and calves separately confined in stalls or pens; walls and ceilings of a smooth, finished construction to be kept clean and whitewashed; hay, grain, or other feed separated from milking areas by dust-tight partitions; and all manure removed and stored at least fifty feet from the milking barn to prevent the breeding of flies (RCW 15.36.155~180).

Stricter standards for the design of the milk house were also implemented with the 1949 law, including: no direct opening into the barn; self-closing screened doors; concrete floors and walls for easy cleaning; proper lighting and ventilation; and running water with facilities for heating it and for washing utensils. The milk house was required to be kept completely clean at all times, as were all pieces of milk-handling equipment, the cows at time of milking, and the milker's clothes and hands (RCW 15.36.185-250).

A further interesting provision of the 1949 regulations required that all dairies and milk plants constructed or altered after June of 1949 meet the Grade requirements of the RCW. Properly

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

prepared plans for such work had to be submitted thereafter for prior approval to the Department of Agriculture in Olympia (RCW 15.36.510).

Until the early 1970s, public health officials in King County conducted near-monthly inspections of all dairy farms, looking for violations of the sanitation and design standards set by the legislation of 1919 and 1949. By the early 1990s, these inspections were conducted twice each year by the state Department of Agriculture, overseen by an official from the Federal Food and Drug Administration (Bernard, 9/25/92).

A multitude of regulations control the modern-day dairy farmers' operations, including the construction of new barns, the fertilizing of fields, flood protection measures, the pricing and marketing of milk, and much more. Long-time dairymen surveyed in the 1990s, appeared unanimous in their belief that the level of government regulation had made dairying in the Snoqualmie Valley increasingly unprofitable (Various informants, 1991-1992).

Advances in Dairy Technology

Improvements in the practice of dairy farming and its supporting technologies were eagerly adopted in many of the dairying regions of Western Washington. The latest scientific advances were accessible to Snoqualmie Valley dairymen through regional industry literature, through publications of the Agricultural College at Pullman, and through the programs of the King County Agricultural Extension Service, founded in 1915. While valley dairy families lagged somewhat behind in their willingness to accept certain innovations, in other areas they stood squarely at the forefront of change.

Many progressive improvements in dairying methodology have visibly affected the functional design of the farmstead, including changes in milking technology, in the production and storage of hay and silage, in the housing of the dairy herd, and in manure removal systems. Because of their impact upon the physical evolution of the farm, each of those four areas are discussed in greater detail below.

Other important advances in dairy farming, although perhaps not so visible, greatly improved the productivity and profitability of the family farm. Such advances included scientific pasture management, disease control, artificial breeding, and herd improvement. The latter was first made possible by the Babcock Tester, a device which measured the butterfat content of the milk of each cow, allowing low-producing cows to be weeded out of the herd. Babcock Testers were available for sale at Merz Dairy Supply Co. in Seattle as early as 1900 (NW H,A,D, April 1900). The King County Cow Testing Association, now known as the Dairy Herd Improvement

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

Association, was organized in 1921 to provide a testing service to its members' herds using the Babcock device. Horatio Allen of the Snoqualmie Valley was one of its earliest presidents (D.H.I.A. Annual Report, 1925).

The advent of new power sources on the dairy farm materially lightened the load of a wide range of chores, both for the farmer and his wife. Gasoline engines, promoted in the Washington Agriculturist in 1912, were available in the Snoqualmie Valley in the 1910s. Gasoline was sometimes used to power the first mechanical milking machines, as well as early tractors, trucks, and other farm machinery. Small utility companies installed electric light plants in Duvall and Tolt in 1912-1913, and Puget Power brought its line across the valley through the Anton Marty place in 1916 (Duvall Citizen, 4/6/91). But most farmers on the valley floor did not benefit from rural electrification until the late 1920s (Kosters, 8/6/92; Larson, 8/24/92). Although they were heavily promoted in the agricultural literature of the period, it is not clear if direct-current dynamos, or home lighting plants, were affordable to Snoqualmie Valley dairy families (Washington Agriculturist, Dec. 1911, June 1915).

The first of four areas of evolving dairy practice that most directly shaped farmstead operation and design was Milking Technology. Equally as revolutionary for the dairy industry as the Babcock Tester, was the invention by Gustaf De Laval of the centrifugal home separator. This hand-operated device offered numerous advantages to the farmer as well as to the creamery. Home separators were also widely held to produce more and better cream from a given amount of milk (NW H,A,D, May 1900, Aug. 1901).

Snoqualmie Valley dairy farmers readily adopted this new technology when it arrived. The Northwest...Dairyman reported in its May and June issues in 1900:

> ***Some King County, Wash, Dairymen***
> *Mr. J. H. Moore an old-timer on the Snoqualmie, has a fine farm a few miles below Fall City. Mr. Moore has run a U. S. Separator over four years; he has a boiler and engine to run his dairy machinery and to manufacture the butter at home, which sells at top price.*
>
> ***At Cherry Valley***
> *Mr. L. Lyons, Herbert Leak, Benham Bros., Geo. Fowler and John C. Dutcher all own fine farms at Cherry Valley on the Snoqualmie. They all run U. S. separators, making butter until recently but are now sending the cream to Austin Bros. creamers at Monroe....*

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

Although the traditional practice of hand milking persisted on a number of Snoqualmie Valley dairy farms right up until World War II, the new mechanical milking machines (patented between 1875 and 1900) were available locally by the 1910s. Thedinga Hardware Co. in Monroe offered a Sharples Mechanical Milker for sale in 1913 (Duvall Citizen, 12/4/13). The De Laval Dairy Supply Co. in Seattle offered such equipment for sale, at least by 1916 (Washington Agriculturist, June 1916). Powered by gasoline or by electricity, the machine consisted of a vacuum pump and a milker with a large covered pail, pulsator, teat cups, and rubber tubing. The farmer moved the machine from cow to cow along the stanchion line. The advantage of the machine was in the saving of time, as one person could manage two double-unit machines, or four cows, simultaneously (Washington Agriculturist, Feb. 1916). Most significantly, the mechanical milker enabled the farmer to expand his herd, keeping pace with the growing market demand for milk.

Methods of storing raw milk on the farm evolved accordingly. As the booming fluid milk market made home separation obsolete, whole milk fresh from the cows was hand-carried in pails from the barn to the milk house. There it was poured through a wall-mounted cooling apparatus and stored in ten-gallon tin cans placed in a water-filled concrete trough. Daily pick-ups by wagon or truck were crucial to maintaining a fresh product. This system prevailed until the 1950s when the first bulk tanks were installed, usually within the old milk house. The early tanks were small in capacity --only 300 or 400 gallons in size--and their introduction occurred in conjunction with the advent of tanker trucks. The Spoelstra-Kosters farm on the River Road north of Duvall installed one of the first bulk tanks in the area in the early 1950s (Kosters, 4/2/91).

The next major step forward in milking technology was the pipeline, a system which moved the milk directly from milking machine to storage tank and eliminated hand-carrying once and for all. On the Coy-Bellamy farm at Cherry Valley near Duvall, a pipeline was installed in 1953 (Bellamy, 4/22/91). As the holding capacity of these tanks grew larger - some dairies by the early 1990s utilized two 40,000-gallon tanks - specially designed tank houses of greater dimensions were required.

A final important advance in the practice and technology of milking was the invention of the milking parlor. Industry literature references these specialized rooms for milking as early as 1936. The concept revolutionized the industry and outmoded the centuries-old practice of milking cows in stanchions within the confines of the barn. Cows now entered a parlor only twice a day at milking time and were milked in groups of six to ten with sophisticated apparatus and minimal labor. The system dramatically improved the efficiency of the family farm, and the management of larger and larger herds became physically possible. The form and placement of the milking parlor critically impacted the operation and layout of the post-1950 farmstead.

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

Farmers in the Snoqualmie Valley were relatively quick to embrace this innovation. One of the first milking parlors in the valley was installed at Broadacre Farm, then owned by Pete Sinnema, in about 1950 (Ed Sinnema, 5/7/91). At the Ward Roney farm on the River Road, an early parlor was put in 1955 (Roney, 6/25/91). To remain competitive, most valley dairy families had converted to the parlor system by the early 1970s. Long-time Snoqualmie Valley dairyman, Walt De Jong, invented the "parallel parlor" in 1983 and then successfully marketed the design across the county. The parallel parlor doubled the capacity of the traditional herringbone arrangement, saving time, space, and labor (De Jong Dairy and Equipment Co. literature).

The second of four areas of evolving dairy practice that influenced farmstead design was the Production and Storage of Hay and Silage. From the inception of specialty dairy farming in the 1890s through World War II, Snoqualmie Valley farmers raised most of the hay required for the maintenance of their herds. Typically, about half the farm's acreage was devoted to a hay crop, which was harvested once a year in June. A good yield was 3.2 tons per acre, but some dairymen harvested more (Marts, p. 51).

With large crews of labor and a horse-drawn wagon, the loose hay was brought to the hay barn for unloading with pitch-forks and, later, with a mechanical hay track and carriage. The design of the barn was directly related to its requirements for hay storage. As herd size increased, the early-day, gable-roofed barn with hay storage on the floor or in partial lofts to the side of a wagon alley, gave way to the gambrel and bow-truss-roofed barn with its voluminous, full-lofted interior space.

Early dairy industry literature made frequent reference to the superior quality of hay raised in Eastern Washington. Indeed, alfalfa hay grown in the more acidic soils west of the Cascades, proved of lower nutritive value than its counterpart east of the mountains. Realizing this, and relying upon a greatly-improved cross-state highway system, Snoqualmie Valley dairy farmers after World War II began to purchase alfalfa exclusively from Eastern Washington (Burhen, 9/12/91). Baled hay was trucked across the mountains and delivered to many valley farms on a weekly basis. The massive lofted interiors of the old hay barns became no longer necessary or practical.

The importance of silage (fermented grass, corn, peas or vetch) to the dairy herd as winter feed was well-documented by the early 1900s. Silos were touted in dairy journals of the day as the ideal means of storage. Some early silos in the Snoqualmie Valley were built on the interior of the barn, but most were free-standing cylindrical structures build of native fir, concrete, and, less frequently, structural tile (Frohning, 10/1/92). Silos were a familiar feature of the rural landscape throughout Western Washington for several decades. A survey conducted in 1944 identified some 85 silos standing in the Snoqualmie Valley (Marts, p. 60).

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

Other less expensive, less labor-intensive forms of storing silage overlapped the era of the silo in the Snoqualmie Valley. Open stacks, formed without any structural container at all, were common in the 1930s through the '50s. During the 1950s, timber and concrete bunkers into which machinery could unload and compact the silage were popularized. More recently the storage of silage took yet another form. Long polyurethane bags into which the organic matter was blown became a common sight on valley farms in the 1990s.

The Housing of the Herd is a third area of dairying practice whose evolution has impacted the physical characteristics of the farm. In the mild Western Washington climate, dairy herds traditionally grazed in green pastures for nine months out of the year. During the coldest winter months they were confined to stanchions in the barn where they fed, slept, and were milked. As early as 1918 the Northwest Dairyman and Horticulturist discussed a new concept of herd housing in an article entitled "Dairy Barns or Open Sheds--Which?" (NW D&H, Dec. 1918).

The earliest of these new shelters, or loafing sheds, appeared in the Snoqualmie Valley in the late 1950s. At first the practice of "open loafing," in which the cows milled around freely, was the norm. The cost of bedding proved exorbitant under this system and, as was soon discovered by Olaf Oien from Stanwood, cows preferred to rest in their own private stalls (Kosters, 8/6/92; Scott, 9/23/92). As a result, the "free-stall" loafing shed system was born and remained the favored method of housing the herd through the 1990s.

The proliferation of loafing sheds on the dairy farm, in conjunction with the advent of the milking parlor and the regular purchase of baled hay, spelled obsolescence for the once-critical hay barn. By the latter decades of the 20th century, the herd was housed year-round in one or more massive loafing sheds and no longer turned-out for grazing in the open pasture. The more cost-effective system of "green-chopping" pasture grass and delivering it in measured quantity to the cow, represented an important shift in dairy farm land-use and farmstead design.

The care and housing of calves changed over the years, as the need for disease control and good ventilation has become better understood. Originally sheltered in a dark corner of the hay barn, calf housing evolved in the 1940s and '50s to separate, specialized barn structures, and later to a system of free-standing circular, plastic calf hutches. These individual little shelters provided the ideal temperature and air circulation and, by the 1990s, became a distinctive visual feature on modern dairy farms (Werkhoven, 11/2/92).

Manure removal is a fourth area of dairying practice that has altered the layout, as well as the day-to-day operation, of the farm. All early dairy barns were designed with a gutter, or recessed

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

trough, in the floor along the stanchion line, to collect animal wastes. It was often the job of the boys on the farm to muck-out the gutters with shovel and wheelbarrow, delivering each load out a slippery plank catwalk to a pile some 50' from the barn. The pile grew enormous until spring, when the farmer spread it upon his fields for fertilizer using a team of horses and a simple manure spreader (Burhen, 9/12/91).

Mechanization eased the drudgery of this work in the 1920s. Dairy equipment catalogues and industry literature of the period advertised track and carrier systems to be installed around the perimeter of the milking floor of the barn. The remnants of such a system remain in place in the milking barn at the Horrock-Petersen farm near Carnation, and the Spoelstra brothers designed such a system for the Spoelstra-Kosters barn on the River Road north of Duvall. Front-end manure loaders pulled by tractors further lightened the work of distributing the built-up waste across the fields in the spring. The Spoelstra brothers of Duvall designed a loader that was used throughout the valley in the 1940s (Kosters, 6/28/91).

By the late 20th century, tractor and blade most commonly accomplish the removal of manure from today's loafing sheds. In the early 1990s, a few of the most progressive dairies in the Snoqualmie Valley installed state-of-the-art-flushing systems. The waste matter produced by ever-expanding herds is thus pushed or flushed into underground holding tanks, or into manure lagoons (large open ponds). Here it is stored until county regulations allow its distribution over the fields by pump and sprinkler system, or by spreader. Sometimes the solids are separated for sale to local nurseries. Methods of modern-day manure removal, storage, and distribution remain a crucial environmental factor in the design of modern dairies (Werkhoven, 11/2/92).

Influence of Model Dairies

During the heyday of dairying in the Snoqualmie Valley, prior to 1950, a number of large private, corporate, and government-sponsored dairy farms operated in the near vicinity. It is possible, although not yet documented, that these model enterprises may have influenced by their example the physical design and dairying practices of the average local farm. With a greater level of capitalization, the model farms were able to implement the latest scientific approaches in herd improvement, sanitation, barn design, etc. The high standards they set may have inspired neighboring dairymen and, to some degree, influenced their decision-making.

Meadowbrook Farm, the site of the former Hop Ranch on the Snoqualmie Prairie, turned to specialized dairying by 1904. A. W. Pratt and his foreman Angus Moffat managed the 800-acre spread for over four decades. By 1944, the farm supported 175 head of dairy cattle and was

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

looking to expand. Hay, corn silage, and grain were under cultivation, but these were supplemented by alfalfa trucked from Moffat's Yakima Valley farm (Marts, p. 56). Meadowbrook boasted an impressive array of farm structures and a payroll that boosted the local economy well into the 1950s (Battey, 8/20/92).

A second corporate dairy of even larger presence in the valley was the Carnation Stock Farm, established by E. A. Stuart in 1909. From its inception, the farm was a major local employer, hiring dozens of men to clear and grade the site, to erect an extensive complex of farm buildings, and to tend an ever-expanding dairy herd. There was ample public access to the farm--visitors and tourists were always welcome. The hallmarks of the farm's day-to-day operation were its strict sanitation standards, the gentle treatment of its "contented cows," and a meticulous system of record keeping. Carnation Farm was not known, on the other hand, for its advanced milking techniques. In order to maintain careful production records, hand milking continued into the 1970s (Bernard, 9/25/92).

The primary focus of effort at this world-renowned Snoqualmie Valley farm was the production of genetically superior dairy stock. Here, E. A. Stuart succeeded in developing a new blood line of record-breaking Holstein dairy cattle. Carnation-bred bulls and cows were regularly sold at auction, contributing to the quality and production capacity of Holstein herds on a local, national, and international scale (Marshall, pp. 116-127).

In nearby Sammamish Valley, two gentlemen farmers indulged in serious dairy-farming at Willowmoor and Hollywood Farms. Charles Clise and Frederick Stimson, whose fortunes grew from real estate, banking, and the timber industry, established model operations there in 1904 and 1910 respectively. Both were dedicated to improving the quality of milk production in their herds through the practice and promotion of scientific dairying techniques. Both farms enjoyed a certain amount of publicity and encouraged organized visitation by the public. Through the sale of their cattle, or by the example of their methodologies, it is possible that the influence of Willowmoor and Hollywood Farms spread to the average dairy farmer in the neighboring Snoqualmie Valley.

A component of the Western Washington Experiment Station in Puyallup, established in 1895 in affiliation with the Agricultural College, was an extensive model dairy farm. Its structures formed a handsome complex, but the extent of its influence is not certain. Publications from the Experiment Station were issued from 1913 to 1925, but their content did not focus upon the subject of dairying. In the early 1990s, a descendant of the Experiment Station dairy in Puyallup was still operating at Buckley in eastern Pierce County, but has recently closed (Bernard, 9/25/92; Nelson, 9/21/00).

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

At the Alaska-Yukon-Pacific Exposition, staged in Seattle in 1909, the Washington State Dairy and Food Commission erected a small model dairy barn. In the barn, an elaborate demonstration run by State Dairy Instructor L. W. Hanson, exhibited sanitary milking techniques using cows of the four most popular dairy breeds (A.Y.P. Model Dairy Barn Report, L. W. Hanson Papers). At the close of the Exposition, construction plans for the model barn were made available to interested parties. According to the Biennial Report of the State Dairy and Food Commissioner for 1909-1910, one-hundred such requests for plans were received in the year following the A.Y.P. It is possible that one or more of those requests came from dairymen of the Snoqualmie Valley.

Social Structure in the Dairy Community

The ethnic heritage of dairy-farming families in the Snoqualmie Valley is a rich mixture of European traditions. Some of the earliest settlers who dairied in the valley were of British stock - English, Irish, and Scottish. Names such as Sikes, Adair, Allen, and Smallman were joined after the turn of the century by Joyce, Wallace, Roney, Chapman and Stuart. During the 1880s and 1890s came increasing numbers of Scandinavian settlers looking for economic opportunity. Many of these old family names persist in the valley today: Solberg, Quaale, Hjertoos, Larson, Ronnei, and Sorensen.

Beginning in the 1910s and continuing well into the 1940s, an influx of Dutch immigrants had a pronounced impact upon the social make-up of the Snoqualmie Valley, and of other dairying districts in Western Washington as well. Drawn by family ties and a flourishing dairy economy, Dutch newcomers to the valley whose descendants remained in dairy-farming in the 1990s included the Roetcisoender, Sinnema, De Jong, Groeneweg, Zylstra, Kosters, Van Ess, and Werkhoven families. Although no specific aspects of farmstead design in the valley have been traced to Dutch influence, the Dutch dairy farms in the area have long been noted for their tidy management, and the dairy families for their industry and thrift (Wagon Wheel, May 1991).

Swiss-born immigrants made their way to the valley in the 1920s and 1930s and took up dairy farming. Names like Dolder, Marty, Hannish, Siegenthaler, and Ribary have long been familiar in the valley, although today most have stopped dairying. A 1944 description of the Ribary dairy farm in the Upper Valley suggests a strong cultural influence upon farmstead design:

A Swiss immigrant, Joseph Ribary, who operates the Sunset Dairy, near North Bend, has made a successful attempt to duplicate the Swiss type of farmstead in a mountain environment. His rustic, well-built house, alongside a stream, is surrounded by flowers, trees, and shrubs. An artificial pool near the house suffices as a mountain tarn, complete even to the waterfall at its outlet, while a grove of neatly pruned evergreens serves both as a bird refuge and an Alpine forest. Carefully

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

tended fruit trees and vineyard complete the picture (Marts, p. 18).

Families of German extraction settled in the Snoqualmie Valley over a period of decades. The names Reinig, Frohning, Herman, Rusch, and Unger were all involved in dairying. Japanese immigrants were frequently attracted to dairy-farming in the White River Valley of King County prior to World War One, but in the Snoqualmie Valley, interestingly, only one Japanese name has come to light in interviews with long-time valley dairymen. In the 1910s and 1920s, the Sato family leased various dairy farm operations in the valley from Vincent north to the River Road at Duvall.

Many of the new arrivals to the valley in the early decades were first-generation immigrants from the Old Country. Some came directly to the Pacific Northwest but others, like the Zylstra family, first spent periods of time in the East or the Midwest. Not everyone came with a dairying background or with an intention of farming. Andrew Hjertoos was a brick mason and carpenter, and he continued to take on occasional construction jobs even after establishing his farm in 1907. The Solberg brothers, also from Norway, logged and prospected in the 1890s before settling down to dairy farming (Tolt/Carnation, p. 28). John Roetcisoender, a brickmaker from the Netherlands, made a difficult transition to dairying in 1911 when he settled in the Monroe and later in the Duvall area (Wagon Wheel, March 1982). For these and many other newcomers in the early 20th century, dairy farming offered a sure and certain route to economic stability.

With the notable exception of Meadowbrook and Carnation farms, specialty dairying in the Snoqualmie was always a family enterprise. Large families were an advantage in a labor-intensive dairy operation, and on some farms several generations continue to live on the site and participate in the family business. For young families, a usual means of acquiring a farm in the valley was to first lease the property, run a successful dairy operation, and then purchase the farm on contract. Owner-operation was a goal, but not the only possible arrangement, and some families leased a succession of farms up and down the valley. To make ends meet, family members often "worked out" at jobs off the farm such as logging, ditching, or milking on another man's farm. Neighbor relied upon neighbor for the large tasks of haying, barn-building, and flood survival. These traditions continued among the valley's farm families through the last decade of the 20th century.

Despite the seven-day-a-week demands of dairy farming, families found time to socialize with one another. The Dutch community remained particularly close-knit through extended family ties and through the influence of the Dutch Reform Church. Swiss farmers met regularly for "Swiss picnics" and dances held at the Swiss Hall, a social center built in the Tualco Valley near Monroe (Helen Larson, 7/17/92; Marty, 10/19/92). In both the Upper and Lower valley, however, rural families intermingled freely without much ethnic separation, drawn together by school and church

E. STATEMENT OF HISTORIC CONTEXTS (cont'd)

activities, and by their common economic concerns. Leake's Grove at Duvall on the river's west bank was a popular community picnic spot. Broadacre farm near Vincent was for many years the site of the Snoqualmie Valley Pioneer Picnic, first hosted by the William Adair family in 1923.

The role of the women on Snoqualmie Valley dairy farms is an important, and by no means fully documented, subject. Clearly, dairy wives were full partners in the family enterprise - local agricultural journals of the early 20th century stress the critical and complex nature of household economics. The economic status and background of a woman prior to her life on the dairy farm appears to have had much to do with the kinds of tasks for which she assumed responsibility on the farm.

In addition to the usual household chores of family laundry, cleaning, and cooking, an early-century dairy wife's day might well have included milking, cream separation, sterilizing pails and other milking equipment, tending a large garden, cooking for haying or barn-building crews, and seasonal food preservation. Some Snoqualmie Valley women did all this and "worked out" besides, but others limited their role strictly to homemaking and did not "go to the barn" (Florence Rupard, 10/17/91; Mae Kosters, 8/6/92). In the 1940s and '50s some women began to play even more active parts in the outdoor work, assisting with the hay harvest, compacting silage, milking, and driving heavy equipment (Helen Sinnema, 1/13/93; Mae Kosters, 8/6/92; Donna Neilson, 4/25/91; Betty Frohning, 10/1/92). By the 1990s, dairy women typically participated fully in dairy operations on their family farms and one, at least, served as Farm Manager for her parents' extensive business interests (Colleen De Jong, 11/2/92).

F. ASSOCIATED PROPERTY TYPES

Name of Property Type: Family Farmsteads

Description

A dairy family farmstead established in the Snoqualmie Valley between 1890 and 1950 would typically have included a rural setting that encompassed open fields and pastures, housing for the family and hired help, a traditional hay barn with milking facilities and accommodations for the herd, and a milk house for the daily storage of fresh milk. Dairy farmsteads that continued in operation beyond 1950, herein called "evolutionary farms," invariably include as well the key structures associated with late 20th century dairying: a milking parlor, a tank house, and one or more loafing sheds.

Farmstead Setting:
The earliest specialized dairy farms in the Snoqualmie Valley were carved out of homesteads and hop ranches previously developed over several decades on the fertile valley floor. In the 1890s, economic hardship forced the sale of many large holdings as forty-acre, quarter-quarter sections. These small farms could amply support the average hand-milked herd of twelve to twenty cows, the recommended ratio of two acres per cow (Marts, pp. 48, 50). By the late decades of the 20th century, most valley dairymen raised vastly larger herds on 100- to 200-hundred acre farm sites.

Typically, the farmstead's immediate setting has been shaped in part by adaptation of the land over time. The location of the farm within the valley was a critical factor in its development. Most early dairy farms, even on the valley floor, required some additional clearing of trees for pastureland. If the farm was situated at the edge of the valley, there were peat-filled marshes to drain. Low meadows were ditched with rudimentary systems of cedar piping that were later modernized and maintained into the 1990s (Ed Sinnema, 5/7/91). In recent years, dairymen have graded up platforms of dirt fill where cows can be led to safety in times of flood. These "critter pads" are located close to the loafing shed where the herd is housed.

Early farmsteads in the valley were oriented toward the river channel. Farmers knew to locate their structures on the highest knolls of silted-up land at the river's edge. Farmhouse and barn faced the water, with pastures and fields sloping away across the valley floor. Many farmsteads today reflect that early settlement pattern, but with the advent of the railroad and valley highways in the 1910s, farmstead development shifted to the lower hillside fringes of the valley. Today these farms hug the West Snoqualmie Valley Road and S.R. #203, with spectacular views across

F. ASSOCIATED PROPERTY TYPES (cont'd)

the breadth of the valley.

There is both variation and continuity in the physical layout of individual farmsteads. The barn is invariably situated on the highest point of land affording maximum flood protection for the herd. Always the milk house, or tank house, is located close to the farm lane or road. On evolutionary farms, space for tanker trucks, hay trucks, and other large vehicles to turn around and to access appropriate farm buildings is a prime design consideration. Depending upon the topography of the site, the farmhouse may sit prominently forward and to one side of the barn, clearly separated from it by lawn and landscaping. The rear kitchen or family room windows often provide sweeping views of the barnyard and fields beyond. At farmsteads located along the valley walls, the farmhouse is frequently situated on the hillside above the road, overlooking the entire farm complex and pastures below.

Natural features visually mark the site of most valley farmstead complexes, as certainly as the soaring roofline of the hay barn. Many farms boast several ancient trees, perhaps a cedar, a locust, or a broadleaf maple. Usually these trees flank the riverbank, or shade the farmhouse itself. As recently as the early 1990s, well-manicured, landscaped yards and extensive flower gardens typically added color and beauty to the farmstead setting.

The accelerated decline of valley dairy farms over the past ten years has somewhat altered this traditional landscape. Growth and development in valley towns have pushed to the edges of a few family farms. Across the road from the Coy-Bellamy Farm just north of Duvall (King County Historic Site #0903) a housing development now occupies what was recently a wooded hillside. Open pastures where cows once grazed are beginning to infill with brambles and blackberries. Land use changes can be observed in agricultural fields, which are now increasingly given over to herb and specialty crops, extensive flowers for the cut-flower market, sweet corn, and cottonwood trees. As of 2000, many abandoned family dairy farms now lack well-tended yards and gardens.

Housing:

Second only to the hay barn, the family residence was the most distinctive architectural element of the historic dairy farmstead. In form and stylistic treatment, valley farm dwellings differed little from houses of the same era built throughout the towns and cities of Western Washington. Pattern books and mail-order plans may have been the design source for some dairy farmhouses. Others were likely designed and constructed by local architect-builders like Oscar Hanson, John Ince of Tolt, or Horace Chipman of Duvall.

F. ASSOCIATED PROPERTY TYPES (cont'd)

By the onset of specialty dairying in the valley in the 1890s, most of the earliest subsistence shanties, homestead cabins, and stump houses were no longer inhabited. More substantial dwellings of milled lumber had taken their place. Photographs of the period depict one and one-half story farmhouses, usually `T' or `L'-shaped in plan, on raised post and pier foundations. Gabled roofs clad with cedar shingles often encompassed a partial front or rear porch. Some boasted simple Queen Anne style details such as bracketed porch posts or projecting bay windows (King Co. Assessor's Property Records). A relatively small number of these pre-1910 residences survive on Snoqualmie Valley dairy farms, but good examples may be found at Tollgate Farm (King County Historic Site #0740), at the Johnson farm (K.C. Site #0767), the Dolder farm (K.C. Site #0895), the Unger-Burhen farm (K.C. Site #0901), and the Dougherty Farm, the latter a designated King County Landmark. The extant houses of this period range in condition from poor to good.

In the 1910s, '20s, and '30s, bungalow styles prevailed in the rural Snoqualmie Valley as they did in town. Those sited on the valley floor were designed, as earlier house types had been, with raised foundations to escape damage from winter flood waters. The modest bungalow has served many dairy families well over the years. It remains the most prevalent of housing types, although in many instances it has been modified for modern living with plate glass windows, family room additions, and carport extensions.

In the 1950s and '60s a number of valley dairy farmers replaced an aging dwelling with a new ranch-style home. Unconstrained by the dimensions of a city building lot, many of these houses are spacious, almost rambling by design. These homes, too, were appropriately sited with regard to flood protection. No farms with dairies still operational in the 1990s have housing of more recent vintage than 1970.

Other characteristics of Snoqualmie Valley farm housing reflect the economic advantage of having a labor force close at hand. Small, frame tenant houses from the 1920s through the 1950s remain in use on some farms. Often there is a second primary residence, sited with equal prominence, built for an older generation retiring from active dairying, or for a younger generation just beginning a new family. It is not uncommon to find that these second residences are older utilitarian structures cleverly adapted for new use.

Few owner-occupied farmhouses have been remodeled or expanded over the past few decades of dairy farm decline. Some are now abandoned, others occupied by migrant laborers. In a few

F. ASSOCIATED PROPERTY TYPES (cont'd)

instances, where farms have been purchased by newcomers, a large new house has replaced an earlier, modest bungalow, as at the Art and Letha Herman Farm (K.C. Site #0929). In other instances, large old farmhouses have been lovingly restored or rehabilitated.

Hay Barns and Dependencies:
The all-important hay barn, for over sixty years, was both the identifying visual component and the operational nerve center of the dairy farm. It provided winter protection for the herd, year-around storage for hay and feed, and shelter for the twice-daily milking procedure.

Hay barns and their various dependencies - silos, "flat barns," and milk houses - were often planned and constructed by the farmer and his family and neighbors. In the early 1900s, help was readily available in the form of standard catalogue plans published by firms such as the Louden Machinery Company and the Radford Architectural Company. Dairy industry literature carried articles on such practical topics as the use of concrete in the barn, electrical wiring of the barn, and pole barn construction techniques (Washington Agriculturist; Nov. 1908, July 1912, June 1915). In the Snoqualmie Valley, certain carpenters and contractors specialized in barn construction and some examples of their work have been identified in the Lower Valley. Horace Chipman and Cecil Barto of Duvall, the Schmidt Brothers of Novelty, and the partnership of Hansen and Fowler of Tolt, all left their mark on a range of handsome valley hay barns built between c. 1905 and the late 1930s (Various informants, 1991-1992).

The earliest dairy barns were true multi-purpose buildings. Simply-built, gable-roofed structures, they were framed with hand-hewn timbers or roughly peeled logs and saplings harvested from the nearest hillside site. Hand-split vertical siding, cedar shake roofing, and hewn plank flooring five or six inches in thickness were the only finishes employed. Lean-to wings, in which a half-dozen or more cows were easily milked, were incrementally added to one or more sides of the barn. Loose hay was stored from floor to ceiling, at the center of the barn, or to either side of a central wagon alley. A handful of these turn-of-the-century barns remain standing, albeit in very poor condition.

As dairying took hold in the early years of the 20th century, sturdier pattern-book versions of gable-roofed, timber-frame barns, with board-and-batten or horizontal, milled siding went up in the valley. These featured windows with glazed sash, partial lofts for hay storage, and architecturally detailed, louvered ventilators (locally known as "cupolas"). The barn at Griffin Creek Farm (K.C. Site #0893) and the Fred Keller barn near Carnation (K.C. Site #0714) are extant examples of this type.

F. ASSOCIATED PROPERTY TYPES (cont'd)

As markets expanded and local dairymen began to increase their herds, the need for greater hay storage capacity encouraged the evolution of barn form and function. In the 1910s, the first gambrel-roofed barns, built entirely of lightweight, dimensioned lumber from local mills, were erected. Inside were full second-story haylofts and, below, floors entirely devoted to milking with double stanchions lines for twenty to fifty cows. Surviving examples include the Kinnear-Ambold Barn near Fall City (K.C. Site #0763, and the Horrock barn (K.C. Site #0894).

Yet another roof profile--the bow truss or Gothic arch--first appeared in the valley in the early 1920s. The earliest remaining extant example is the Broadacre Farm barn (K.C. Site #0898). The massive bow-truss barns permitted even greater volumes of hay storage at the loft level and could accommodate up to ninety cows. Some were constructed with the latest concrete floors and gutters, although these were not required by law until the late 1940s.

Gambrel and bow-truss barns continued to be built, using increased volumes of structural concrete at the lower levels, into the mid-1950s. The most recently built traditional hay barn identified in the Snoqualmie Valley is the gambrel-roofed Angerer barn (K.C. Site #0892), erected in 1956 in the Pleasant Hill vicinity.

Two important building types which evolved as barn dependencies during the pre-1950 period are the silo and "flat barn." Silos gained widespread favor - some farmers even built two. The majority were constructed of wood staves held together by steel cable. Weyerhauser heavily promoted its pre-cut, self-assembled silos in local industry literature, and it is likely that a number of Snoqualmie Valley farmers were supplied by that company. Wood silos have suffered a heavy attrition rate over the years owing to their obsolescence. Concrete silos have fared somewhat better, and a well-maintained example of twin, structural tile silos, undoubtedly rare in the valley, remains intact at the Horrock farm (K.C. Site #0894).

A relatively less frequent but distinctive addition to the traditional hay barn was the "flatbarn" or "cow barn," appearing in the valley approximately between 1920 and the early 1940s. The flat barn was a single-story, gable-roofed wing designed to house milking cows only. One of its important purposes was to improve the sanitation of the milking area by removing it from dusty hay and feed storage. Generally of frame construction, the flat barn was up-to-date with concrete floors, operable windows, and good ventilation. Several examples still stand in good condition in the valley.

A great number of Snoqualmie Valley hay barns have been lost to obsolescence and decay. In

F. ASSOCIATED PROPERTY TYPES (cont'd)

the winter of 1997-'98, heavy snows caused the collapse of at least five more barns. In 1944, Marion Marts' land-use study mapped over 250 standing hay barns from North Bend to the confluence of the Skykomish River at Monroe. Today considerably fewer survive but interestingly, as recently as the early 1990s, the majority of functional dairy farms still retained an old hay barn in varying conditions and degrees of use.

Milk Houses:
A small but critical component of every dairy farmstead was the milk house. For reasons of sanitation, the separation of the milk house from the barn itself was recommended by early industry publications and promoted by the State Dairy Instructor ("Milk Supply in Cities of Washington," L. W. Hanson Papers), but it was not required by law until 1919. On most Snoqualmie Valley farmsteads, the milk house was built and rebuilt several times to accommodate new regulations, the evolving technology of milk storage, and new modes of transportation to market. Extant milk houses in the valley generally appear to post-date the 1919 statute.

With poured concrete foundations, flooring, and lower walls, and with upper walls and gabled roofs of framed construction, these early milk houses frequently measured twelve by eighteen feet in dimension. Appended to the exterior was a platform of concrete or wood, upon which the ten-gallon receiving cans were placed for pick-up. The interior space included, along one wall. a poured concrete floor trough equipped with cold water plumbing, a sink for washing containers, and a cooler for lowering the temperature of the fresh raw milk. By law, the milk house was equipped with a screened door and operable screened windows, and was regularly whitewashed on its interior.

The Grade A Milk Ordinance of 1949, together with the advent of the first bulk milk tanks in the early 1950s, encouraged many farmers to enlarge or to completely rebuild their milk houses. In other instances, the existing milk house was of adequate size to house an early 300- or 400-gallon holding tank. Larger tank sizes soon forced the construction of larger tank houses, discussed below, on farmsteads that continued in operation as dairies into the 1960s and '70s.

Other Historic Outbuildings:
Typically, a pre-1950 valley dairy farm included one or more additional outbuildings of simple, framed construction. Three or four-bay equipment sheds, open on one side for the storage of farm vehicles and machinery, appeared from the 1920s on. Sometimes one structural bay was enclosed to serve as a machine shop. To provide a water supply to the barn and milk house, many dairy farms had small gable-roofed pump houses. Although not believed to have been

F. ASSOCIATED PROPERTY TYPES (cont'd)

nearly as prevalent, at least one example of a freestanding granary building survives in the valley. Separate calf barns gained popularity in the 1940s and early 1950s, as dairymen learned new approaches to the care and handling of calves. Other ancillary structures on the farmstead might include a chicken coop, garage, root cellar, or woodshed.

Evolutionary Structures:
Farmsteads which continued in use in the Snoqualmie Valley after 1950 were invariably reshaped by the revolutionary advances in dairying practice which followed World War Two. Changes in herd housing and the methodology of milking ushered in the loafing shed, milking parlor, and the tank house, while advances in feed, silage, and hay storage and in manure removal brought the bunker silage pit, commodities shed, slurry tank, and manure lagoon to the farmstead. As in decades past, these structures were typically designed to a great extent by the farmer himself. While outside labor or professional advice may be sought, the modern dairyman himself remained the driving force in the physical development of the farm (Werkhovens, 11/2/92; Groeneweg, 10/29/92).

The most visible of the "new" dairy farm buildings was the loafing shed--a long, low, gable-roofed shelter that hugs the landscape, dwarfing the size of all other farmstead structures and contrasting sharply with the monumental massing of the traditional hay barn. Of wood frame or, less frequently, steel post and beam construction, the loafing sheds are sometimes open to the weather, and other times enclosed with metal sheathing. Roof truss systems form shallow gables, consistently metal clad. Inside, baled hay is stored on an open loft platform above the feed alley, or on the floor itself at the center of the feed alley. Strings of dairy cattle eat and rest in bedded free-stalls, 200 or more under one roof.

Early loafing sheds were often appended in some fashion to the old hay barn, as at the Zylstra farm (K.C. Site #0910). But more recently, as the continued usefulness of the old hay barn is called into question, loafing sheds are built well apart from the barn, as on the Steve Keller farm near Fall City and the Spoelstra-Kosters farm on the River Road (K.C. Site #0915).

Milking parlors reflect nearly fifty years' evolution in their location and design. Those from the 1950s are most often contained within a corner of the old hay barn at the milking floor level. Later parlors are frequently appended to the barn, perhaps utilizing an old litter alley as a holding area or an exit passage from the parlor. Most recently built parlors are designed as freestanding structures, separate altogether from the old hay barn. Generally parlors are built of concrete block with fully washable concrete or tile interiors. The earliest parlors positioned four to eight cows in a linear or a herringbone arrangement, while the most recent installations, like those at the De

F. ASSOCIATED PROPERTY TYPES (cont'd)

Jong and Groeneweg farms, are parallel parlor configurations designed to milk twenty or more cows at one time. Tank houses are the modern-day descendants of milk houses, and Snoqualmie Valley dairymen still commonly refer to them as such. They exist on virtually every evolutionary dairy farm in the valley. In close proximity to the milking parlor, the tank house is a gable-roofed structure of cement block or framed construction. The enormity of today's 30,000- to 40,000-gallon refrigerated tanks has required periodic extensions of, or additions to, twenty or thirty-year-old tank houses built for smaller herds. A primary siting consideration for tank houses is their accessibility to the tanker truck. The barnyard design must allow for the maneuvering of these large vehicles.

Other structures and features which may be found on the evolutionary dairy farmstead include: three-side, concrete silage bunkers often dug into a hillside site; compartmentalized commodities sheds that are open to machinery, built of concrete and steel or wood-framed with metal cladding; metal-clad machine shops; multiple portable calf hutches of molded plastic construction; and massive cylindrical slurry tanks for the storage of animal wastes, or alternatively, manure lagoons on graded-up sites between the farm complex and the pastures beyond.

Significance

The dairy family farmsteads of the Snoqualmie Valley collectively illustrate the rise and fall of Western Washington's most sustained agricultural industry. The Snoqualmie Valley is the last of King County's rural river valleys, now poised in a period of transition between a dairying past and a gentrified, suburban future. Unlike the other river valleys of King County where industrial development and sprawl have long since erased all traces of farming, the Snoqualmie Valley still retains open space, wooded hillsides, and a generally pastoral character.

On a number of farmsteads in the valley, dairying activity ceased forty or fifty years ago, and these properties provide an especially informative window to the past. On evolutionary farms, where modern improvements of the past forty years overlay an historic core, 100 years of dairying history is even more fully reflected. In the past decade, a few of these properties have been purchased by non-farming urbanites with the apparent intention of preserving farmstead character. Others have simply been abandoned and suffer from deterioration, their future uncertain.

Family farmsteads were the central economic unit of the dairy industry in Western Washington. Together, these farmsteads illustrate shifting patterns of settlement, land-use, agricultural progress, and technological change. Each farmstead reflects a dairy family's response to the

F. ASSOCIATED PROPERTY TYPES (cont'd)

river, the floodplain, and the valley road system. Each farmstead further conveys specific information on stages of dairying practice, government regulation, and market forces at work.

The design of the dairy farmstead, and the interrelationships of the buildings within the complex, reveal much about the way that it functioned over time. The physical appearance of the farmstead mirrors the fluctuating economic circumstances of the family, and of the dairy industry as a whole. The farmstead's form is a further reflection of the availability of building materials, of access to design sources and skilled labor, and perhaps even of traditional cultural preferences.

Registration Requirements

To be eligible for listing in the National Register under this MPD, a Snoqualmie Valley dairy family farmstead must strongly convey its historic character in both physical and associative ways, and it must possess documented significance within the historic period (1890 to 1960) of dairy farming in the valley.

An eligible family farmstead must retain at least three of the four basic components common to every dairy farm established in the historic period: a traditional hay barn, a farmhouse, a milk house, and/or open pastureland. Most dairy farmsteads have undergone changes over time, and it is these very modifications which so aptly illustrate the transformation of dairying activity. But to be eligible for registration under this MPD, there must remain tangible physical ties to the past. Both the traditional hay barn and the farmhouse must be fifty years of age or older. The milk house need not be of that age, because the great majority have been long since converted to tank houses. The farmstead acreage must be of sufficient extent to convey the feeling of open pastureland in a rural setting, but need not coincide in size, configuration, or agricultural use with the original. Designation boundaries should be drawn to include a sufficient buffer of acreage to protect the historic setting.

On farmsteads where no dairying has occurred since the early 1950s, there must still be physical evidence of dairy usage in the immediate barnyard setting and in the interior of the barn. Wholesale conversions of the surrounding acreage or complete adaptations of the key dairying buildings to new use would likely disqualify a farmstead for designation. Unless they are of exceptional age and/or architectural importance, all three of the pivotal farmstead buildings--hay barn, farmhouse, and milk house--should remain in fair condition or better.

On "evolutionary farms," where modern dairy techniques were practiced after 1950, there must remain ample visible evidence of the historic core of the farm despite the layering of new (post-

F. ASSOCIATED PROPERTY TYPES (cont'd)

1950) forms and functions. The early farmhouse and hay barn must possess integrity of design, materials, and workmanship, but alterations that have allowed the dairy to remain economically viable are expected and acceptable. The addition of loafing sheds to the hay barn, the installation of a milking parlor in or near the barn, the expansion of a tank house, or the enlargement of the farmhouse with a rear wing are examples of acceptable modifications on an "evolutionary farm." The presence of additional historic dependencies such as early equipment sheds, garages, or calf barns adds to the integrity and significance of the evolutionary farm. Because they reflect the progress of farming technology, the presence of post-1950 structures such as modern machine shops, loafing sheds, and milking parlors will not be considered to decrease a farmstead's significance or integrity.

In general, extensive fenestration changes and the application of non-historic siding to either farmhouse or hay barn could disqualify a farmstead for listing, but these should be carefully evaluated against other strengths in the farmstead complex. A standard exception should be the use of metal roofing material on the barn or other farm dependencies. Because metal roofing has actually prolonged the life of many historic outbuildings, its application should not be viewed as detrimental to integrity.

It is the relationships between the individual elements of a dairy farmstead that best convey its historical, architectural, and cultural significance. Partial farmsteads and solitary farmstead structures, with the exception of traditional hay barns (discussed as a separate property type below), cannot be considered as eligible properties in the context of dairy farming in the Snoqualmie Valley.

Name of Property Type: Hay Barns

Description

Traditional dairy hay barns in the Snoqualmie Valley are those which were designed to provide storage for hay, housing for the herd, and shelter for the milking operation. After the mid-1950s, the hay barn as a building form was superseded by the loafing shed and milking parlor, and its construction ceased. While great numbers of these barns have disappeared from the valley landscape over the past few decades, many survive. Some have been left to decay, but others have been maintained to varying degrees and adapted to new use as components of modern-day farms.

The evolution of hay barns is outlined in general terms under the description of Dairy Farmsteads

F. ASSOCIATED PROPERTY TYPES (cont'd)

above. Three basic types of traditional hay barns, defined by the spatial organization of their interiors, are described below. Snoqualmie Valley hay barns, however, embody many variations of these basic types, and illustrate considerable over-lap in terms of construction date.

In barns built prior to 1910, loose hay was stored on the floor in a central location under a rather steeply pitched gabled roof, open to the ridgeline. Milking, and the winter housing of the small herd, were confined to one or more low, shed-roofed wings attached to the perimeter of the barn. Evidence of the milking wing function can be found in these barns today in remnants of stanchion lines, wooden gutters and mangers, and in the remains of whitewash on unfinished surfaces. Generally these barns retain a central wagon alley which passed, in the English tradition, from one side of the barn through to the other. Their structural systems were rudimentary, usually consisting of cedar poles planted five or six feet deep in the earth and roughly hewn beams. Milled lumber, readily available from local sawmills, was occasionally used in roof construction. Connections were sometimes pegged, with mortise and tenon joinery, other times nailed. Remnants of thick wood plank flooring, cedar shake roofing, and vertical split-cedar siding survive in some of these barns today.

A second basic barn type, constructed most frequently between 1900 and 1920, comprises those designed with partial lofts for the storage of hay. Loose hay was unloaded from a central wagon alley with the help of an overhead pulley and track. Milking occurred in shed wing additions or in sectioned-off, whitewashed areas under the loft. These barns typically had gabled, sometimes gambrel roof configurations with ventilators at the ridgeline. Their structural systems were often more sophisticated, with carefully hewn timber frames, increased use of milled lumber, and nailed connections. Exteriors were sometimes neatly finished with board-and-batten or shiplap siding.

From the early 1920s to the mid-1950s, as dairying reached its zenith in the valley, a third barn type became the standard of design. These full-lofted barns featured a large hay door, and a hay hood that supported a track and carriage for unloading enormous quantities of harvested hay. Beneath the hay loft, an entire floor was devoted to milking where two or three rows of stanchions accommodated from fifty to ninety cows. These barns are almost exclusively associated with the familiar gambrel and bow-truss roof configurations, these typically punctuated at the ridge line by two to four ventilators. Milled wood framing systems; horizontal, tongue-in-groove or shiplap siding; glazed, operable windows; and concrete floors and foundations became the norm.

Few examples of hay barns in the valley survive without some degree of alteration. The most frequent kinds of modifications include the application of metal roofing, the insertion of cement floors and foundations where none existed originally, the adaptation of the milking floor for larger

F. ASSOCIATED PROPERTY TYPES (cont'd)

herds or new circulation patterns, and the addition of loafing sheds or milking parlors.

Significance

Traditional Snoqualmie Valley hay barns, while clearly of greater significance within the context of an intact farmstead, may in some instances be considered as individually eligible for listing under this MPD. More than any other single component of the farmstead, hay barns embody in their design nearly every aspect of the evolution of dairying in the valley. Hay barns may also possess, in and of themselves, architectural monumentality.

In their changing form and function, hay barns illustrate the rapid rise of dairying as a specialty branch of agriculture. The dramatic growth of the Snoqualmie Valley dairyman's herd in the 1920s, '30s, and '40s is reflected in the expanded dimensions of the full-lofted barn. The influence of government regulations is demonstrated by the spatial arrangements and finishes of the barn's interior. Perhaps most significantly, traditional hay barns tell the story of sixty years' progress in the science of dairy farming. Advancements in milking technology; hay, silage, and feed storage; herd housing; and manure management are all expressed in the hay barn's original design and in its adaptation over time.

Snoqualmie hay barns reflect an architectural response to the region's mild marine climate and to the flood-prone topography of the valley floor. Available construction technologies, the expediencies of local labor and materials, and evolving industry standards are illustrated in the barn's structure and fabric. Traditional hay barn design may also reveal much about the aesthetic preferences and the ethnic background of the owner and builder, as well as the economic circumstances of the dairy farm family.

Registration Requirements

To be eligible for listing under this MPD, a traditional Snoqualmie Valley hay barn must be at least fifty years old, and must by definition have been built to store hay, shelter the herd in winter, and house the twice-daily milking operation. A hay barn should only be considered for individual listing when the surrounding farmstead complex is missing, incomplete, or otherwise lacks sufficient integrity for treatment as a dairy farmstead.

The solitary hay barn should be readable as a product of its own time. Stricter standards of integrity of design, materials, and workmanship should be applied to a barn being individually

F. ASSOCIATED PROPERTY TYPES (cont'd)

nominated than are applied to a barn within a farmstead complex. The hay barn should exhibit strong integrity of location and feeling, but integrity of setting and association may be somewhat compromised by the loss of the farmstead complex. Unless of exceptional age or architectural significance, a hay barn should remain at least in fair condition to quality for designation.

The eligible traditional hay barn must retain its original structural system, although timber bracing or concrete foundations added to stabilize the structure over time are acceptable. The original roof configuration, along with any original windows and/or ventilators, must remain intact. Metal roofing, because of its important role in barn preservation, is allowable. Original exterior siding and original fenestration must still survive. The early overall spatial organization of the interior of the barn must remain discernable, with the hay storage area intact. There must be clear evidence of the wing or floor where milking historically occurred, including such features as stanchion lines, gutters, and whitewashed surfaces.

Early barn dependencies from the pre-1950 era such as silos, flatbarns, or milk houses should be included in the hay barn designation. Over time, post-1950 additions to the barn such as loafing shed wings, will become acceptable as evidence of late-period dairying. Partial updating of the milking floor of a full-lofted barn is allowable as long as the original circulation pattern, i.e. feed and litter alleys and stanchion rows, are readable. For instance, an early milking parlor may have been installed in one corner of the barn.

G. GEOGRAPHICAL DATA

The geographic area for the Dairy Farm Properties of the Snoqualmie River Valley, encompasses the entire Snoqualmie River Valley as it flows through King County, Washington. The area generally encompasses the flat bottom lands on either side of the Snoqualmie River.

H. SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

The Dairy Farm Properties in the Snoqualmie Valley multiple property umbrella document was originally developed in 1991-1993 as a component of preservation planning activities of the King County Landmarks and Heritage Commission. Dairy farming has been identified as a sub-theme within the larger context of countywide agricultural history. The Snoqualmie Valley was selected for documentation as one of the few planning areas in King County where dairying has remained a predominant element of the cultural landscape.

This Multiple Property Documentation Form is thus based upon five phases of King County's Historic Sites Survey conducted in the Snoqualmie Valley. An initial survey of historic places in the valley was completed by Lael Kuhl in 1978. A second phase of general survey was conducted by Karen Bean in 1985, adding more dairy farm properties to the inventory. The third phase focused exclusively on dairy properties. It was an update of earlier entries and a further expansion of the inventory, conducted by Florence K. Lentz in 1991. This phase also included contextual research on the evolution of dairying in the valley, and development of the basic umbrella document. Phase four was a specialized study of dairy barn design in the Snoqualmie Valley, conducted by Kathryn H. Krafft and Florence Lentz in the summer 1992.

The most recent effort, phase five, was an attrition study of previous dairy farm inventory sites, conducted by Kathryn Devlin and Arlene Falkin in the year 2000. Together, these survey-inventory efforts have identified and tracked over 90 historic places in unincorporated portions of the Snoqualmie Valley, over 50 of these associated with the theme of dairy farming.

Despite the rapid decline of dairy farm operations in the valley in the past decade, a number of properties remain potentially eligible for National Register designation under this MPD. Three of these properties, all family farmsteads, have been selected for initial nomination. It is anticipated that as many as six additional farmsteads and a dozen or more hay barns may be nominated in the future.

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Maps

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I. MAJOR BIBLIOGRAPHICAL REFERENCES (cont'd)

Informants

Note: Unless otherwise noted, all listed interviews were conducted in the years 1991-1993 in connection with Phase 3 and 4 of King County's survey/inventory efforts in the valley. As of 2000, several of these informants have died or moved away.

Angerer, Rose and Leon. Former owners (mother and son) of Angerer farm near Fall City. Gig Harbor, WA.

Battey, Dave. Upper Valley historian and author, owner of Monte Vista Farm. Snoqualmie, WA.

Bellamy, Ruth Coy. Owner of Bellamy/Coy Bros. farm at Cherry Valley. Duvall, WA.

Bernard, Woody. Dairy Agent, King County Extension Service. Seattle, WA.

Bowe, Verle. Daughter of barn-builder and contractor Horace Chipman. Duvall, WA.

Boyd, Jeff. Manager, Normanbrook Farm. North Bend, WA.

Burhen, Ray and Tove. Valley historians and owners of Unger farm. Duvall, WA.

De Jong, Jerry. Second-generation owner of Everett De Jong farm on River Road. Duvall, WA.

De Jong, Walter. Owner of several valley farms, inventor of parallel parlors, and proprietor of Sno-King Dairy. Monroe, WA.

De Jong, Colleen. Daughter of Walt De Jong and Farm Manager of De Jong Dairy Farms. Monroe, WA.

Evans, Theora. Former owner of Johnson farm. Fall City, WA.

Faulds, Marie. Daughter of pioneer valley farmer Peter Faulds. Seattle, WA.

Fish, Sylvia Dolder. Owner of Dolder farm near Carnation. Yakima, WA.

I. MAJOR BIBLIOGRAPHICAL REFERENCES (cont'd)

Frohning, Elmer and Betty. Local historians and long-time owners of Frohning farm at Tualco Valley. Monroe, WA.

Groeneweg, Jacob. Owner of Hollandia Farms. Monroe, WA.

Herman, Art. Long-time owner of Herman farm on River Road. Duvall, WA.

Jones, Isabelle. Long-time valley resident and Tolt historian. Carnation, WA.

Keller, Fred. Former valley dairyman and veterinarian. Redmond, WA.

Kosters, Bob and Mae. Historians, authors, and long-time valley dairy farmers. Duvall, WA.

Larson, Wes and Helen. Local historians and former dairy farmers. Carnation, WA.

Marty, Anton. Retired valley dairyman. Duvall, WA.

Miller, Allen. Local railroad historian. Monroe, WA.

Neilson, Donna. Former owner, Neilson farm. Monroe, WA.

Norman, Marie. Long-time valley resident and former owner of Normanbrook Farm. North Bend, WA.

Petersen, Mr. and Mrs. Gerald. Owners and former dairy farmers, Horrock farm. Carnation, WA.

Quaale, William. Long-time dairyman at Vincent, and former owner of Quaale farm. Carnation, WA.

Roetcisoender, Jim and Noma. Dairy farm owners (third generation) along River Road. Duvall, WA.

Roney, Ward Jr. Former dairyman, third generation on River Road. Duvall, WA.

Rupard, Florence. Long-time area resident and former owner of a River Road dairy farm. Duvall, WA.

I. MAJOR BIBLIOGRAPHICAL REFERENCES (cont'd)

Rupard, Sam. Son of Florence and present dairyman on River Road. Duvall, WA.

Schefer, Kathleen. Former owner of dairy farm at Tolt--MacDonald Park. Carnation, WA.

Scott Peter. Retired Darigold field representative. North Bend, WA.

Sikes, Kenneth. Retired third-generation dairy farm owner at Vincent. Carnation, WA.

Sinnema, Cor and Helen. Retired, long-time dairy farmers at Vincent. Carnation, WA.

Sinnema, Ed. Retired, former dairyman at Broadacre Farm. Carnation, WA.

Sinnema, Jerry and Sally. Third-generation dairy farmers at Vincent. Carnation, WA.

Thorson, Roger. Descendant and present owner of Hjertoos farm. Carnation, WA.

Trecize, Beryl. Daughter of William Adair of Broadacre Farm near Vincent. Seattle, WA.

Venn, Bill. Owner-operator of Normanbrook Farm and dairy. North Bend, WA.

Wallace, Edna. Long-time valley resident. Carnation, WA.

Werkhoven, Jim and Andy. Brothers currently dairying in Tualco Valley. Monroe, WA.

Zaremba, Eleanor. Granddaughter of Horatio Allen, grew up on Allen Farm at Cherry Valley. Monroe, WA.

Zylstra, Mark. Second-generation dairyman on River Road. Duvall, WA.

Providing updated information on the continued attrition of family farming operations in the valley, from 1993 - 2000:

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