# Fish Passage Plan (FPP) Change Form

**Change Form # & Title**: 23AppB001 – LMN Summer Transport Dates

**Date Submitted**: 12-DEC-2022

**Project**: Lower Monumental Dam

**Requester Name, Agency**: Jonathan Ebel, FPAC Chair

On behalf of: Jonathan Ebel, Idaho Department of Fish and Game; Jay Hesse, Nez Perce Tribe; Tom Iverson, Yakama Nation Fisheries; Charles Morrill, Washington Department of Fish and Wildlife; Tom Lorz, CRITFC; Erick Van Dyke, ODFW

**Final Action:** **APPROVED 3-FEB-2023**

**FPP Section**: Appendix B - Transport Plan, sections 3.2, 3.3, and 4.6.

**Justification for Change**:

As coordinated in-season at TMT via [SOR 2020-4](https://pweb.crohms.org/tmt/sor/2020/0715_SOR_2020-4.pdf) and [SOR 2022-5](https://pweb.crohms.org/tmt/agendas/2022/0727_SOR_202022-5.pdf), summer transport operations were not implemented at Lower Monumental Dam in 2020 and 2022. SOR 2022-5 was coordinated at TMT on July 27, 2022 and SOR 2020-4 was coordinated at TMT on July 17, 2020. Both SORs were implemented as requested. Summer transport from Lower Monumental Dam also did not occur in 2021, but this was not coordinated with an SOR. For future years, the FPP needs to be updated so that the project has sufficient time to plan, schedule, and budget accordingly. In this case, the direction to the project is to plan *not* to implement truck transport in the summer period.

The two referenced SORs contain the rationale for the request to stop summer transport from Lower Monumental Dam. In short, subyearling Chinook salmon abundance is generally low at Lower Monumental, but can change year to year depending on conditions and adult abundance for a given spawn year. Because of the generally low abundance, a separate abundance criteria limits transport to a much shorter period than for the other projects in most years. Additionally, disease prevalence, typically columnaris, is higher at Lower Monumental Dam. Finally, the results of evaluations on summer transport from Lower Monumental Dam suggest that demographic benefits are equivocal. Indeed, a full evaluation of the potential benefits of transportation by truck has never been conducted. Overall, resources employed for truck transport from Lower Monumental Dam during the summer period may be better applied to fish protection measures shown to have or could have greater benefit.

**Proposed Changes**: See following pages for edits to the existing FPP in Track Changes.

**COMMENTS**:

**RECORD OF FINAL ACTION**: Approved at the FPOM FPP meeting on Feb 3, 2023.

1. **Transport Program Duration**
   1. Starting Operations
      1. Consistent with the Fish Operations Plan (FOP; included in FPP as **Appendix E**) and guidance provided by the Regional Implementation Oversight Group (RIOG), the best transport operation for fish will be determined upon review of data on fish survival, adult returns, current in-river conditions, and water supply forecasts. TMT will review transport studies and provide a recommendation each year to CENWW on how to operate the juvenile transport program.
      2. Planning dates to initiate juvenile transport at Lower Granite Dam will be April 21–25 unless the Corps adopts a recommendation by TMT for a later start date (no later than May 1) and accompanying alternative operation. Transport at Little Goose and Lower Monumental may begin simultaneously with the start of transport at Lower Granite, or may begin up to 4 days and up to 7 days later, respectively.
   2. Summer Transport Operations
      1. At Lower Granite and Little Goose, summer operations will begin in coordination and discussions with TMT. Summer transport operations from Lower Monumental were discontinued on paper in 2023 with FPP Change Form 23AppB001 and discontinued in practice in 2020 with SOR 2020-4.
      2. Fish collected during summer operations will be held in shaded raceways or holding tanks. Sampling may convert to 100% when fish numbers are below 500 fish per day (per PSMFC sampling guidelines) and smaller pick-up mounted transport tanks may be used. Steelhead that are determined by SMP biologists to be in poor condition or reverting to the parr stage may be bypassed to the river.
   3. Ending Operations
      1. Transport operations are anticipated to continue through October 31 at Lower Granite and Little Goose.
      2. Transport may be stopped earlier at any of the projects due to *columnaris* disease (see **section 4.6.5**).
   4. Emergency Notification
      1. If icing conditions threaten facility integrity or present unsafe conditions on the transport route, transport operations may be terminated early by the Project’s Operations Manager. The CENWW Transportation Coordinator will coordinate any emergency termination or modification of the transportation program with NOAA Fisheries and TMT, except as described below in **section 4.6.5** regarding ending collection for transport due to *columnaris* disease or at Lower Monumental due to low fish abundance (see **section 4.6.6**).
      2. If high water temperatures or other factors increase collection mortality to 6% of daily collection (when sample sizes are ≥ 20 fish) for 3 consecutive days, or if mortality rates are increasing at such a rate that these criteria are likely to be met, Project Biologists will report to the CENWW Transportation Coordinator. The Transportation Coordinator will evaluate the situation and notify NOAA Fisheries and may arrange a conference call, if needed, with TMT to discuss options to provide adequate fish protection measures.
      3. In the event of a fish loss exceeding conditions considered in the incidental take statement of the current CRS BiOp, which includes the transportation program, the Corps shall notify NOAA Fisheries and reopen consultation as needed.
2. OPERATING CRITERIA
   1. Early Season Pre-Transport Operations

Prior to initiation of transport, or when fish are not being transported from the Snake River projects, fish collection facilities will be operated as described in the Smolt Facility Protocols in **Appendix J.**

* 1. Collection & Transportation Operations
     1. Collection of fish for transport will commence on the agreed-to start dates at Lower Granite, Little Goose, and Lower Monumental and barging will begin the following day. Collected juvenile fish will be transported from each facility by barge daily or every other day (depending on the number of fish) throughout the migration season.
     2. Once transport operations begin, all juvenile fish collected shall be transported except for those marked for in-river studies. Marked or PIT-tagged fish will be released to the river if they are part of an approved research study or Smolt Monitoring Program (SMP) travel time evaluation.
     3. Juvenile fish collected for transport will be bypassed back to the river if the number of collected fish exceeds or is expected to exceed facility or barge holding capacities. Holding for transport will resume when capacities are adequate to hold and transport fish according to criteria. Maximum holding time and loading criteria will not be exceeded without CENWW review and approval.
     4. Transport operations will be carried out at each project in accordance with all relevant FPP operating criteria.
     5. Specifics of the transportation program may be altered during the transportation season based on recommendations from the TMT.
  2. Collection Facility Operations
     1. Once transport operations begin, collection facilities will be staffed 24 hours per day until transport operations cease.
     2. Flow and fish passage at juvenile fish separators will be monitored at least every 15 minutes during separator operations. Fish that are too large to pass through the separator bars will be bypassed to the river.
     3. When collection systems are not providing safe fish passage or meeting operating criteria, Project Operations Managers and Biologists will make operational changes in the best interests of fish, and then notify CENWW as soon as possible. The CENWW Transportation Coordinator will coordinate changes with NOAA Fisheries and TMT.
     4. If it appears that facility or barge holding capacity may be exceeded on a given day, the Project Biologist shall immediately inform CENWW with a report of the hourly fish collection numbers, barge arrival time or holding capabilities, along with facility descaling and mortality information. The CENWW Transportation Coordinator shall promptly coordinate this information with RCC and NOAA Fisheries. Additional spill at the affected project may be requested if it appears that holding capacity will be exceeded or fish condition information indicates that spill is a better passage route than the bypass system. If it is determined that the best course of action is to increase spill, spill operations shall begin prior to the facility reaching its holding capacity (around when the 8th of 10 raceways is filled). This level of spill may continue until holding capacity is adequate or fish condition improves.
     5. To avoid attracting predatory birds, mortalities should be returned to the river at night if deemed necessary by the Project Biologist.
     6. At Little Goose and Lower Monumental, lamprey-friendly tailscreens will be installed for the entire fish collection season. Fishery staff at these projects have never observed salmon fry being impinged on these screens.
     7. At Lower Granite, lamprey-friendly tailscreens will be installed as needed at the discretion of Project Biologists based on the presence of lamprey in the raceways, while considering the risk of impingement of salmon fry on the lamprey-friendly tailscreens. Project Biologists will switch back to salmon-criteria screens at the first sign of impingement of salmon fry on the lamprey-friendly tailscreens, or when fry are observed in the sample. The salmon-criteria screens will be left in place until salmon fry are no longer present in the sample.
     8. Juvenile lamprey are sometimes found in dewatered raceways after truck/barge loading operations. If debris is not a problem, lamprey should be promptly and safely flushed or otherwise returned to the river. If debris is a problem, and when practicable, lamprey should be removed by hand and put in a container with water and later returned to the river.
  3. Sampling Procedures
     1. Sampling will normally be accomplished in accordance with SMP sampling guidelines recommended by the PSMFC. Sampling guidelines may occasionally be altered if required by the transportation program or fish research activities. Typical alterations of sampling guidelines are to adjust the number of fish sampled to meet approved research needs, to minimize fish handling during warm water periods, or to meet deadlines for loading fish transport vehicles.
     2. Sampled fish will be counted by electronic counting tunnels, then verified and adjusted by manual counts. All estimates of fish numbers, rates, and loading densities in raceways, trucks, and barges will be based on a sample of collected fish. Samples will be taken hourly 24 hours per day at sample rates set by Project Biologists as coordinated with SMP personnel.
     3. Species composition and weight samples will be taken to determine loading densities for raceways, barges, and trucks. Project personnel will keep a running total of hourly estimates of fish numbers, raceway totals, and direct loading totals for barges based on these estimates. Daily samples for monitoring descaling will include a minimum of 100 fish of the predominant group(s) for which descaling information is recorded. During periods of low fish passage, descaling will be monitored for facility operations. Full sample descaling may be conducted instead of 100 fish subsamples if it does not impact other facility operations. During extended transport operations (after August 15 at Snake River projects), samples may be evaluated every other day to minimize handling stress and to allow all collected fish to be held in the sample holding tanks.
     4. Where SMP activities are conducted at collector dams, Project Biologists may utilize daily total information gathered by those personnel.
  4. Loading Criteria
     1. **Raceway Capacity:**
        1. Inflow to raceways is approximately 1,200 gallons per minute (gpm) at Lower Granite and Little Goose, and 2,400 gpm at Lower Monumental.
        2. Individual raceway volume is approximately 12,000 gallons at Lower Granite and Little Goose, and 24,000 gallons at Lower Monumental.
        3. Maximum raceway capacity is 0.5 pounds (lbs) of fish per gallon of water. This capacity limit shall not be exceeded without CENWW review and approval through coordination with NOAA Fisheries and TMT. Project Biologists will provide the following information to the CENWW Transportation Coordinator to inform the joint decision whether to exceed capacity criteria or to bypass fish to the river:
           1. Species composition.
           2. Total anticipated collection during the critical holding period.
           3. In-river fish passage conditions.
           4. Fish condition.
     2. **Raceway Distribution**: Collected fish will be distributed among available raceways in a manner that minimizes crowding, stress, and risk of disease transmission. Additional fish will be added to each raceway at the discretion of the Project Biologist until holding capacity is reached. Whenever possible, small fish will be held in separate raceways from large fish.
     3. **Raceway Holding Time**: Maximum raceway holding time is 2 days, except in instances when additional holding time is needed to collect sufficient fish for tagging for research studies.
     4. **Truck & Barge Capacity**: Maximum loading capacity is 5 lbs of fish per 1 gpm inflow for barges, and 0.5 lbs per 1 gallon of water for trucks (**Table B-1**).

Table B-1. Juvenile Fish Transportation Program Transport Vehicle Capacity.

| **Transport Vehicle** | **Capacity (gal)** | **Inflow (gpm)** | **Fish Capacity (lbs)** |
| --- | --- | --- | --- |
| Barge 2127 - “*SOCKEYE*” | 85,000 | 4,600 | 23,000 |
| Barge 2817 - “*BLUEBACK*” | 85,000 | 4,600 | 23,000 |
| Barge 4382 - “*STEELHEAD*” | 100,000 | 10,000 | 50,000 |
| Barge 4394 - “*COHO*” | 100,000 | 10,000 | 50,000 |
| Barge 8105 - “*CHINOOK*” | 150,000 | 15,000 | 75,000 |
| Barge 8106 - “*KING* *SALMON*” | 150,000 | 15,000 | 75,000 |
| Barge 8107 | 150,000 | 15,000 | 75,000 |
| Barge 8108 | 150,000 | 15,000 | 75,000 |
| Truck | 3,500 | n/a | 1,750 |
| Truck-Slide on tank | 1,000 | N/a | 500 |
| Truck - Midi-tank | 300 | N/a | 150 |
| Truck - Mini-tank | 150 | N/a | 75 |

* 1. Summer Transport Operations
     1. During the summer, all fish collected will be routed to raceways with the most effective shading for holding. Sampling efforts should be minimized, if possible, to limit handling stress on fish. Facility samples may be processed every other day if necessary.
     2. All collected fish may be routed to sample tanks when fish numbers drop to an acceptable handling level. At that time, all collected fish will be handled as part of the daily sample per SMP guidelines (see **Appendix J**). To minimize handling stress, facility samples may be processed every other day. When large trucks are used, fish may be loaded from either raceways or labs. When mini or midi-tankers are used, Corps and agency Project Biologists will select the best method of transferring fish from the lab to the tankers.
     3. During summer trucking, if fish collection numbers begin increasing to where it appears the project will have difficulty transporting the fish with available equipment, the project shall notify the CENWW Transportation Coordinator immediately. The Transportation Coordinator will arrange for an additional transport vehicle if possible, joint fish transportation between two or more operating projects, or prioritize transport/bypass operations between the projects.
     4. When water temperatures are above 68°F, all personnel handling fish shall take extra care to minimize stress and other impacts on fish.
     5. If mortality from *columnaris* disease (*Flavobacterium columnare*) in the condition sample exceeds 10% for three consecutive days after August 17, collection for transport will end and the system will be placed in primary bypass with a condition sample taken every third day. The collection of fish for condition sampling will end after one 24-hour sample period, or when 100 juvenile salmonids are collected for examination. The FPC will be notified and FPAC will review available data for future recommendations. Transport will be reinitiated when all following criteria are met:
        + 1. Collection mortality is less than 5% for two consecutive sampling periods.
          2. Water temperature in the tailrace is below 65°F.
          3. More than 50 fish are collected during the two consecutive daily periods.