

North Cascade District – Master Plan

Project Background

The Oregon Department of Forestry (ODF) North Cascade District (NCD) includes two Unit Offices: the Molalla Unit Office and the Santiam Unit Office. The wildfires of 2020 had significant impact to the District, burning more than half of the 47,465-acre Santiam State Forest, and destroying the ODF Santiam Unit Office Administrative Headquarters located in Lyons, Oregon.

This tragedy prompted ODF to take a broader look at the NCD's operational and physical space needs to serve their mission most efficiently and effectively. ODF will use the findings and recommendations from this master plan to determine the best course forward for replacement of the destroyed administrative headquarters office building.







Project Process and Parameters

The process was separated into five phases of work:

- District Needs Assessment
- Existing Facilities Assessment
- District Space Program
- Conceptual Design Recommendations
- Documentation





Project Roles

STEERING COMMITTEE - A steering committee was comprised of district and facilities leadership, supplemented by unit office leadership at the early stages of the work .

ROLE OF USERS - Representatives from both the Santiam and Molalla Unit Offices were interviewed to better understand how each program functioned today and how they could be improved in the future. Program representatives were asked to describe their workflow, short term growth expectations, and opportunities for improved efficiency.

ROLE OF STAKEHOLDERS - ODF invited the Clackamas-Marion Protective Association (CMFPA) to provide feedback on the program improvement assessment and recommendations. This was followed by a site tour of both Santiam and Molalla Unit Offices. The stakeholders were provided an assessment of existing conditions, recommendations for facility improvements, and recommendations for space changes to improve operational efficiency and effectiveness of the district.







Project Charter

PURPOSE OF THE MASTER PLAN

The North Cascade District Master Plan will use the loss of the Santiam Unit Office to broadly examine district service/operational needs and develop a replacement plan that unites District services, improves operational efficiency, enhances community and public connection, and provides a foundation for decades of effective forest management.

PRIORITIES OF THE MASTER PLAN

- Reduced Operational Cost
- Improved Operational and Response Time Effectiveness
- Improved Public Access and Interface
- Improved Equipment Storage Flexibility
- Enhanced Safety/Security
- Improved Connection with Partner Agencies/Fire Districts (including potential for co-location)
- Improved Consideration of Reduced Disruptions to Urban/Residential Neighboring Properties

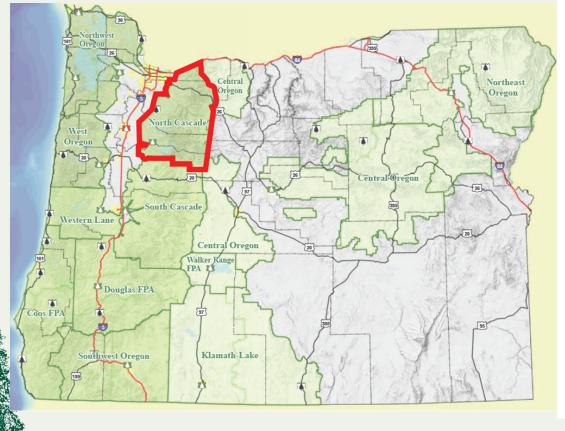
PROCESS OF THE MASTER PLAN

- All communication with ODF will go through Chris Stewart
- Digital tools will be utilized to improve communication efficiency
- Decisions will be consensus-based whenever possible; when consensus is not possible, Andy
 White will make final decisions



District Locations

The North Cascade District spans several counties in northwest Oregon, ranging from the Columbia River to the Santiam Forest and from the Willamette Valley to the Cascade Range. The North Cascade District has two unit offices, one in Molalla and one in Lyons (called the Santiam Unit Office). Although the offices are less than 25 miles away from each other, they are separated by rough, mountainous terrain which makes travel between the offices take between 45 minutes and an hour.





District Needs and Assessment

The on-site assessment generally confirmed the findings of the Faithful and Gould report, which ranked existing buildings on a scale of "Good" to "Very Poor", based on an evaluation of cost for repair as compared to replacement value. None of the buildings on either unit office campus ranked above a rating of "Fair".



Molalla Building Conditions

LEGEND:

GOOD (0-5%)

FAIR (5-10%)

POOR (10-60%)

VERY POOR (>60%)

PROPERTY LINE

FENCE LINE



District Needs and Assessment

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Molalla Unit

- The Molalla Unit Office was developed over time, with construction beginning in the 1950s. The site is located in an urban area, and surrounded by high density residential areas. The site contains an administration building, a fire cache and workshop building, a district mechanics building, a 3-sided covered storage building, and a wood-framed non-compliant fuel and hazardous materials building. Circulation is easily compromised by an improperly parked vehicle. The site is enclosed by a chain link fence and gate, but the site has also had a history of trespass and theft.
- Access to the site is off Highway 211, a two-lane road, but visibility from the ODF site is limited due to a slight rise in the road grade. Vehicles attempting to access the highway have been forced off the road by unseen oncoming traffic. The northern edge of the site abuts Patrol Street, currently a limited access roadway. City of Molalla plans to improve the street to connect the adjacent neighborhood, likely resulting in traffic congestion accessing the ODF site. Highway 211 access is not signalized, and it does not appear that the improvement of Patrol Street includes plans for signalization.
- The site is fully utilized except for a memorial tree grove at the northwest corner of the site.



Molalla Unit



Molalla Assessment Diagram

- 1. Adjacent Residential Properties (ODF has 24/7 operations during fire events)
- 2. Memorial Arboretum
- 3. Shop access requires entry through neighboring property
- 4. Patrol Street is slated to connect to HWY 211 and increase traffic
- 5. Narrow entry for large vehicles and potential ditch falls
- 6. Hill Northeast of Highway 211 entrance blocks view



Observed Conditions (Molalla)



SMALL ENTRY LOBBY

- Not enough space to accommodate people waiting, filling out documents, and interacting with clerical staff
- Inadequate security preventing entry from lobby to the rest of the building



ARCHIVE AND ADMIN. BUILDING STORAGE

- Storage in the flood-prone basement not ideal
- Additional space for shelves needed for file and equipment storage



VEHICLES PARKED OUTSIDE THE FIRE CACHE BUILDING

 The Molalla site is wider and better secured than Santiam, but it is still crowded and susceptible to bottlenecks

CONFERENCE ROOM

- Space too small to act as large fire event headquarters or for all-district meetings
- Inadequate wall space and equipment for maps and planning during fire events



FIRE DISPATCH

 Small space is crowded and difficult to accommodate extra people during a large fire event



BREAKROOM WITH AGING RESIDENTIAL APPLIANCES

- Aging residential appliances inadequate for heavy-duty use in an office environment
- Catering kitchen setup would be preferred for large events





Observed Conditions (Molalla)



ATTIC STORAGE ABOVE THE FIRE CACHE BUILDING

- Low head height makes storage difficult
- · Lacks adequate climate control
- Storage of heavy and bulky items in a space only accessible by a narrow stairwell poses a safety risk



HOSE STORAGE, SAND TABLE, AND VEHICLE PARKED IN THE FIRE CACHE

 Insufficient space to move around vehicles and access stored items

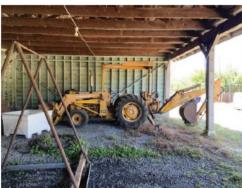
SEMI-ENCLOSED STORAGE SPACE IN THE COVERED STORAGE BUILDING

- Storage space too small and lacks adequate shelving and racks for equipment
- Enclosed storage area lacks proper lighting, ventilation, and enclosure



AGING COVERED STORAGE

- Vehicle bays are neither tall nor deep enough to fit many of ODF's larger vehicles
- Building lacks the ability to be closed off, creating a safety and security risk





Santiam Unit

The Santiam Unit Office was developed over time, with construction beginning in the 1950s. The site is located in a rural area, and surrounded by low density residential and agricultural use. The site contains a fire cache and workshop building, a tree seedling and refrigeration building combined with a fuel and hazardous materials building, a high-bay shop building housing the State Forest Program, a non-compliant open vehicle wash pad, and the former site of the administration building.

Access to the site is off Highway 22. Without a signal at the intersection of North Fork Road and Highway 22, access to and from the site during weekends and high traffic times is very difficult. The site is divided into a developed southern half and an undeveloped northern half. The southern half is further divided by an accessway and informal easement to the western neighboring property, and an access along its eastern edge serving two adjacent properties. These accessways significantly compromise the utilization of the property, as well as the ability to circulate and secure the property. A 53-foot tractor-trailer is needed to service the tree seedling facility and the narrowness of the site creates a significant problem for truck maneuvering. The lack of security fencing has resulted in vandalism and theft issues.



Santiam Unit



Santiam Assessment Diagram

- 1. Swale (floods in winter)
- 2. Neighboring residents must cross campus to access their property
- 3. Access constrained at intersection of North Fork Road and Highway 22



Observed Conditions (Santiam)



DISTRICT MECHANIC STORAGE IN STATE FOREST BUILDING

 District mechanic equipment and materials lack adequate storage



STATE FOREST SEMI-ENCLOSED EQUIPMENT STORAGE

- Small covered storage space requires high storage racks which are difficult to use
- Chain link enclosure is easy to compromise, equipment and materials have been stolen from this location



GROUNDS MAINTENANCE STORAGE

 Inadequate shelves and racks for grounds maintenance equipment

PORTABLE RESTROOM

- Portable restrooms located on site to augment inadequate restroom facilities
- Frequently used by members of the public because the site is not able to be secured



DISTRICT MECHANIC IN STATE FOREST BUILDING

- The State Forest Building is the newest building and is in the best condition between the two campuses
- The district mechanic, who is regularly located in Molalla, occupies a vehicle bay within the building



FIRE CREW MEMBER WORKING AT HIS COMPUTER IN THE COMBINED WOOD AND METAL SHOP

- Fire and wood shops should be separated to reduce fire risk
- Several fire crew lockers are also located in this space instead of a cleaner room





Observed Conditions (Santiam)



STORAGE CLOSET

Inadequate storage for signs, maps, and office supplies



FIRE CREW OFFICE / FIRE CACHE BREAKROOM

Space shares incompatible uses



NON-FUNCTIONING RESTROOM FACILITIES

- Fire Cache Building does not have genderseparated restrooms
- Aging restroom fixtures are frequently out of service and require maintenance

LOCKER/DRYING ROOM

 Exposed equipment and loose wires in the locker room



NOT ENOUGH SPACE FOR EQUIPMENT, STORAGE, AND PARKING IN VEHICLE BAYS

- Material and equipment storage needs to be more secure
- Storage needs better enclosure and protection from the elements





Observed Conditions (Santiam)

PUBLIC INFORMATION KIOSK

· Kiosk not accessible



UNSECURED PARKING

- Parking area unable to be properly secured to allow neighbors access to their property through the campus
- ODF employees who leave their vehicles on campus for extended periods during fire events have had their vehicles broken into and property stolen



TRACTOR-TRAILER LOADING DOCK

 The narrowness of the site and space required for the loading dock makes backing in a tractor-trailer challenging



Operation and Safety Principles

OPERATIONAL AND SAFETY

- Align programs to avoid pedestrians crossing vehicle traffic
- Pull-through vehicle bays with adequate clearance
- Separation of spaces and programs
- Proper program adjacencies
- · One-way traffic circulation grid
- · Secure and unsecured site areas
- Right-sized spaces

DESIGN REQUIREMENTS

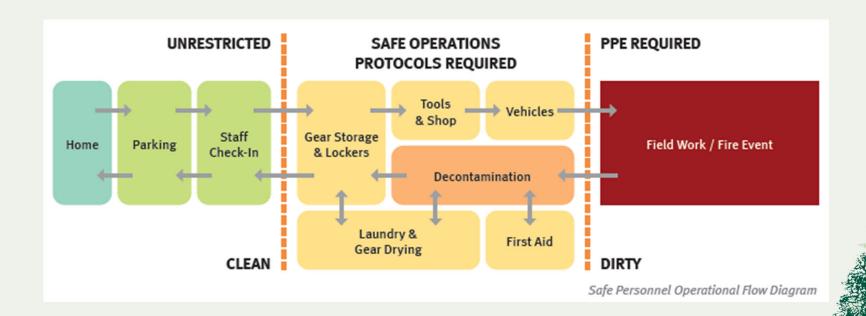
- · Reduced operational costs
- Improved operational and response time effectiveness
- · Improved public access and interface
- Improved equipment storage flexibility
- · Enhanced safety and security
- · Improved connection with partner agencies or fire districts
- · Flexible and adaptable to future change
- Accommodate remote work potential
- Provide equal or better service delivery to constituents and customers
- Accessible Facilities





Workflow and Adjacency

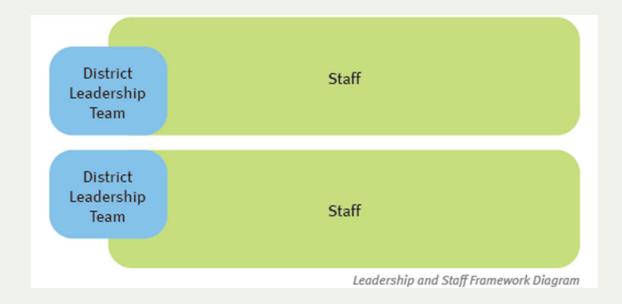
Safety principles were further translated to the level of an individual staff member workflow and corresponding architectural space flow requirements.





Workflow and Adjacency

The ideal leadership and staff framework illustrated that the field and administrative leaders should be closely adjacent, with the field and administrative staff also closely adjacent—thus providing opportunities for both collaborating and cross training to provide continuity during the fire season where personnel often must divert efforts to respond to emergency conditions.

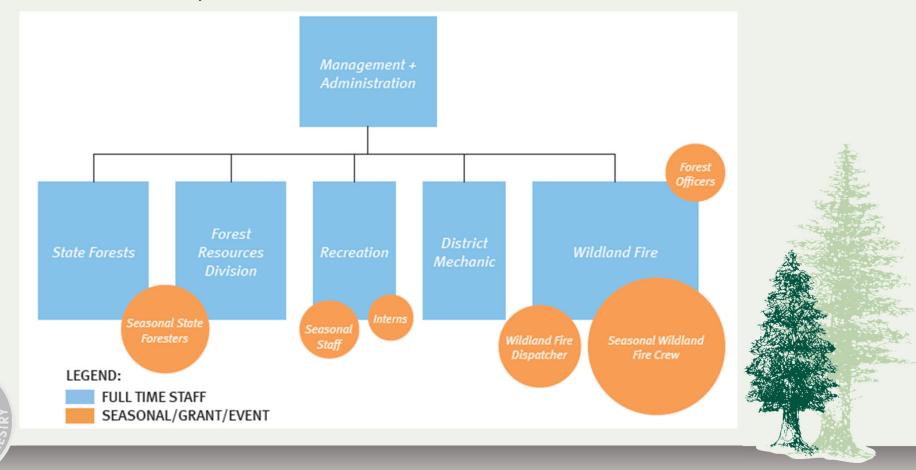






Workflow and Adjacency

The design team developed a staff size diagram to understand and illustrate the fluctuations of seasonal staff members compared to the full-time, year-round staff. The Wildland Fire Crew, Forestry Management, and Recreation teams in particular were found to grow every summer with increased activity in the State Forests and with the fire season.



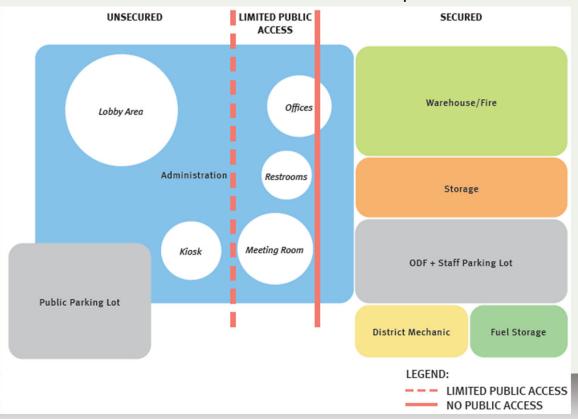
Safety and Access

There are certain functions that are freely accessible to the public in an "unsecured" zone, such as access to the building lobby where the public can speak to the administrative staff, purchase recreation maps and forestry permits, and fill out necessary paperwork.

A "limited public access" zone was also identified which members of the public can access with the permission and supervision of ODF staff. This includes the offices of the state foresters, meeting rooms where timber auctions and information sessions are held, and certain amenity spaces like restrooms.

A third "secured" zone is the portion of the campus where safety and operational concerns require that public access is not needed and could hinder ODF operations.







FLEXIBLE RECREATION STORAGE

- Enclosed storage to keep items from getting damaged
- Designated space for recreational storage only
- Storage for seasonal use vehicles and tools
- Picture illustrates condition at Santiam Unit Office





HOSE DRYING

- Vertical hose tower, horizontal drying doesn't allowed proper hose drainage
- Covered hose drying to allow hoses to dry in wet, rainy conditions
- Picture illustrates condition at Santiam Unit Office



METAL AND WOODSHOP

- Separate the spaces to its specific uses
- Move lockers and other incompatible uses out of shop space
- Picture illustrates condition at Molalla Unit Office





VEHICLE BAYS

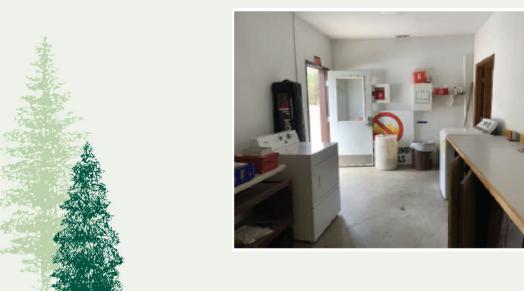
- Large enough to fit modern vehicles
- Additional bays to house vehicles
- Pass-through preferred over back-in
- Picture illustrates condition at Molalla Unit Office



DISTRICT MECHANIC SHOP

- Brighter lighting for detailed tasks
- Additional bay for workspace
- · Pit in addition to the lift to increase safety
- Picture illustrates condition at Molalla Unit Office





MUD/LAUNDRY ROOM

- Commercial laundry equipment
- Capacity for larger amount of soiled clothing
- Picture illustrates condition at Santiam Unit Office



SAFETY AND SECURITY

- Secure material and equipment storage
- Storage needs better enclosure and protection from the elements
- Picture illustrates condition at Santiam Unit Office



ADEQUATE HAZARDOUS MATERIAL STORAGE

- Hazardous material storage needs to be brought up to current codes in a safer location
- Picture illustrates condition at Molalla Unit Office







The study found that overall, both the Santiam and Molalla unit offices were significantly undersized based on current and short-term operational effectiveness needs. This was particularly evident in the administrative and fire cache/shop areas, where growth needs were indicated as nearly double existing area allotments. Vehicle parking and staging were also uniformly compromised on both sites.

	BUILDING AREA		
	Existing	Right-Sized	Percent Change
Santiam	11,080 SF	18,560 SF	68%
Molalla	16,685 SF	25,775 SF	54%
TOTAL (Separate)	27,765 SF	44,335 SF	60%

	SITE AREA		
	Existing	Right-Sized	Percent Change
Santiam	234,353 SF	261,641 SF	12%
Molalla	188,615 SF	243,904 SF	29%
TOTAL (Separate)	422,968 SF	505,544 SF	20%





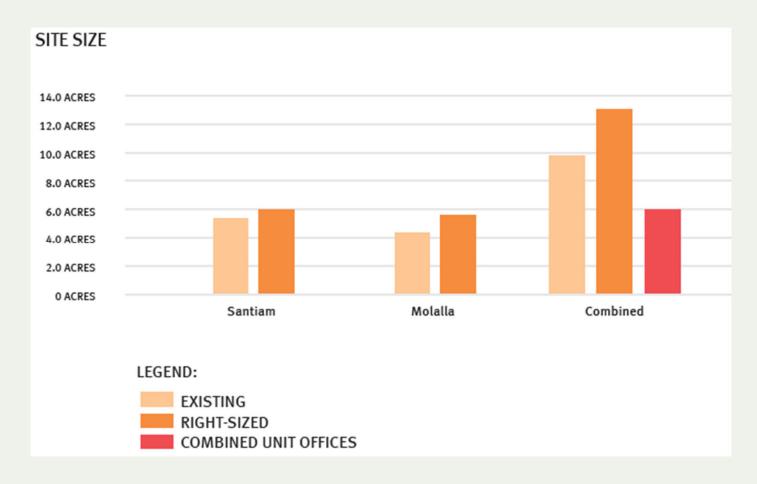
When analyzed as a single combined site, the resulting "Right-Sized" program was significantly less than the space needed to operate the two units independently. The increased area for the two-site option is mostly due to duplication of operational space needs rather than duplication of personnel. The total combined building area was projected to be 25% less than the independent units, and the combined site was projected to be 47% smaller overall. .

	BUILDING AREA			
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TOTAL (Separate)	27,765 SF	44,335 SF	60%	
TOTAL (Combined)		33,160 SF	-25%	
	SITE AREA			
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Santiam	234,353 SF	261,641 SF	12%	
Molalla	188,615 SF	243,904 SF	29%	
TOTAL (Separate)	422,968 SF	505,544 SF	20%	
TOTAL (Combined)		268,298 SF	-47%	













Campus Structure Framework

Both the Santiam and Molalla unit offices use an independent building framework, meaning that each function is housed in an independent structure.

Not all ODF unit office campuses use this configuration. John Day Unit Office combines uses into a two-building configuration (a separate administration and shop building) Sisters combines all functions into a single building.

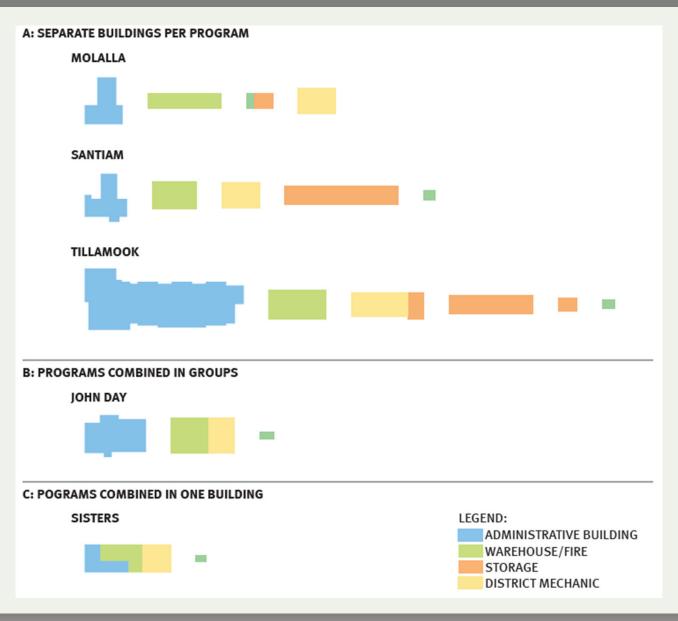
The design team analyzed the potential for an independent building, two-building, and single building option and presented these options to both users and leadership. Benefits and drawbacks were observed for all three structures.

In general, the advantages of the independent configurations was that each function had a "home" and that dirty or noisy functions were kept separate from clean and quiet functions.

Construction, maintenance, and operations were judged to be more expensive for the independent configuration.

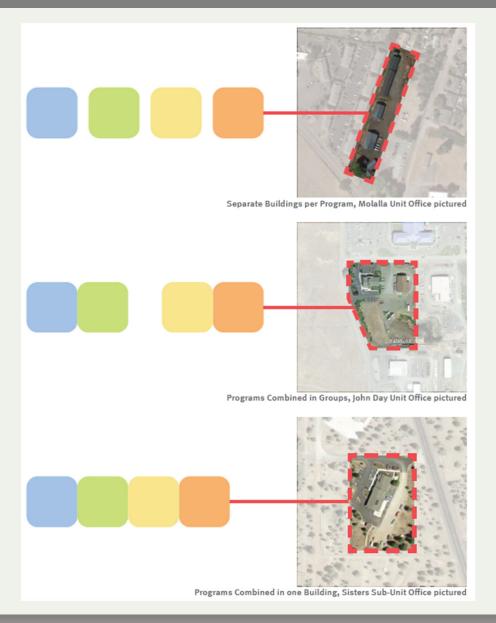
Conversely, the single building model allowed reduced travel time between functions and operational/maintenance efficiency, but at the cost of concern for noise isolation.

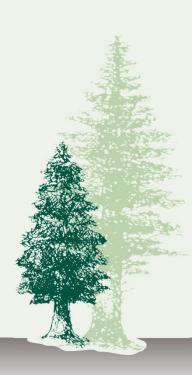
Campus Structure Framework





Campus Structure Framework







Options Studied

For each of the existing unit offices, three scenarios were further developed, accounting for existing building conditions and operational continuity during renovation/replacement.

The "Expand in Place" scenario explored how to modify existing buildings to accommodate updated program needs.

The "Staged Replacement" scenario explored how to replace the most compromised buildings with new structures located to allow operational continuity while the replacement was being constructed.

The "Full Replacement" option studied the potential for maximizing efficiency with a single-building configuration designed within the context of the existing site. In each case the design team recommended a scenario that appeared to best meet the efficiency/effectiveness goals of this study as well as maximum achievement of the operational and safety principles.



Options Studied (Santiam)



Santiam - Expand in Place



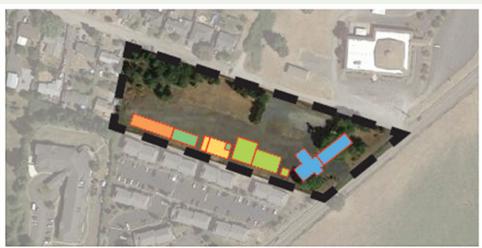
Santiam - Staged Replacement





Santiam - Full Replacement

Options Studied (Molalla)



Molalla - Expand in Place



Molalla - Staged Replacement





Molalla - Full Replacement



Recommended Configurations

- The focus of this study has been to establish the physical planned improvements necessary to provide efficient and effective service for the North Cascade District. Both Santiam and Molalla campuses were found to require additional facilities to effectively serve staff and public users. Additionally, both the Santiam and Molalla campuses were determined to have deferred maintenance issues that would require substantial capital.
- Originally, the expectation of this study was to arrive at a single recommendation for facilities improvement. Since both campuses were found to need major programmatic improvements in addition to the previously determined deferred maintenance needs, cost of improvements became an additional driver.
- The report concludes with two recommendations—a recommendation for "Right-Sized" facility improvements at the existing Santiam and Molalla unit offices, as well as a recommendation for a new centrally located facility combining both units on a single campus.
- Each comes with its own hurdles as well as its own benefits. The diagrams on the following pages illustrate the three recommendations in detail as well as their relative benefits and drawbacks.

Recommended Configurations

For the Molalla campus, the recommended scenario is the "Full Replacement" strategy. The width of the Molalla site and general configuration allow for a one-way traffic pattern as well as vehicle pull-through bays when a new single building is provided. Since these two elements were considered the most important safety principles, the long-term benefits of the "Full Replacement" model appear to outweigh the challenges of operational continuity and initial cost.



OPERATIONAL AND SAFETY PRINCIPLES ACHIEVED:

- Align programs to avoid pedestrians crossing vehicle traffic
- Pull through vehicle bays
- Separation of spaces and programs
- Proper program adjacencies
- One-way grid
- Secure or un-secure site areas
- Right-sized spaces





PROPERTY LINE



FENCE LINE



EXISTING BUILDING OUTLINE





MOLALLA PHASED FULL REPLACEMENT



BENEFITS

- 1. Replaces poor condition, aging, and undersized buildings.
- 2. Improves site flow and organization.
- Combined-program buildings improve adjacency, systems, and cost efficiency.
- Established location that stakeholders already know and ODF already owns.
- Allows ODF to achieve some, but not all operational and safety principles, such as one-way grid and pull-through vehicle bays.

DRAWBACKS

- Existing site constraints prohibit accomplishing all best practice principles
- Site constraints related to neighboring properties and site access from Highway 211 remain.
- Operational continuity during phased construction is challenging.
- 4. Phased construction more expensive than building all at once.
- 5. Increased cost associated with improving two campuses.



Recommended Configurations

For the Santiam campus, the recommended scenario is "Staged Replacement". The narrow configuration and accessway issues of the Santiam site make the primary safety principles unachievable. By selecting a "Staged Replacement" plan, operational continuity is maximized, and long-term benefit can still be achieved, although vehicles will still need to back into bays.



OPERATIONAL AND SAFETY PRINCIPLES ACHIEVED:

- Align programs to avoid pedestrians crossing vehicle traffic
- Pull through vehicle bays
- Separation of spaces and programs
- Proper program adjacencies
- One-way grid
 - Secure or un-secure site areas

LEGEND:

PROPERTY LINE

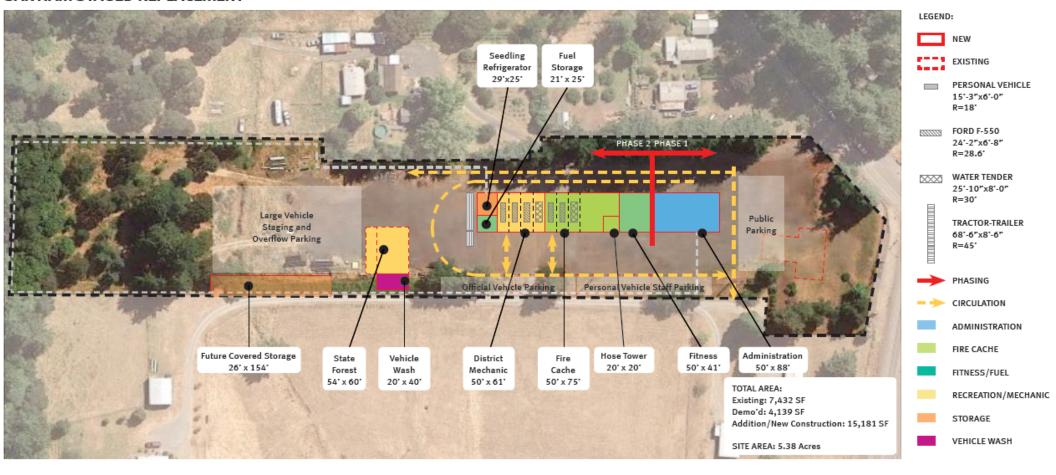
FENCE LINE



PROPOSED OUTLINE



SANTIAM STAGED REPLACEMENT



BENEFITS

- 1. Replaces poor condition, aging, and undersized buildings.
- 2. Improves site flow and organization.
- Combined-program buildings improve adjacency, systems, and cost efficiency.
- Established location that stakeholders already know and ODF already owns.
- Allows ODF to achieve some, but not all operational and safety principles, such as one-way grid and improved site security.

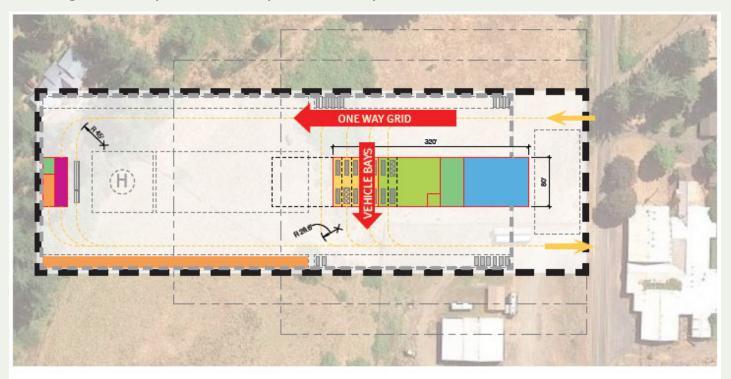
DRAWBACKS

- Existing site constraints prohibit accomplishing all best practice principles.
- Site constraints related to neighboring properties and site access from Highway 22 remain.
- Operational continuity during phased construction is challenging.
- 4. Phased construction more expensive than building all at once.
- 5. Increased cost associated with improving two campuses.



Recommended Configurations

A single study was performed to illustrate the combined unit office configuration, although multiple site shapes were considered. As a new site and building, all elements of the operational safety principles can be achieved, while also providing for growth, improved safe highway access, helicopter landing, and improved campus security.



OPERATIONAL AND SAFETY PRINCIPLES ACHIEVED:

- Align programs to avoid pedestrians crossing vehicle traffic
- ✓ Pull through vehicle bays
- Separation of spaces and programs
- Proper program adjacencies
- One-way grid
- Secure or un-secure site areas
 - Right-sized spaces



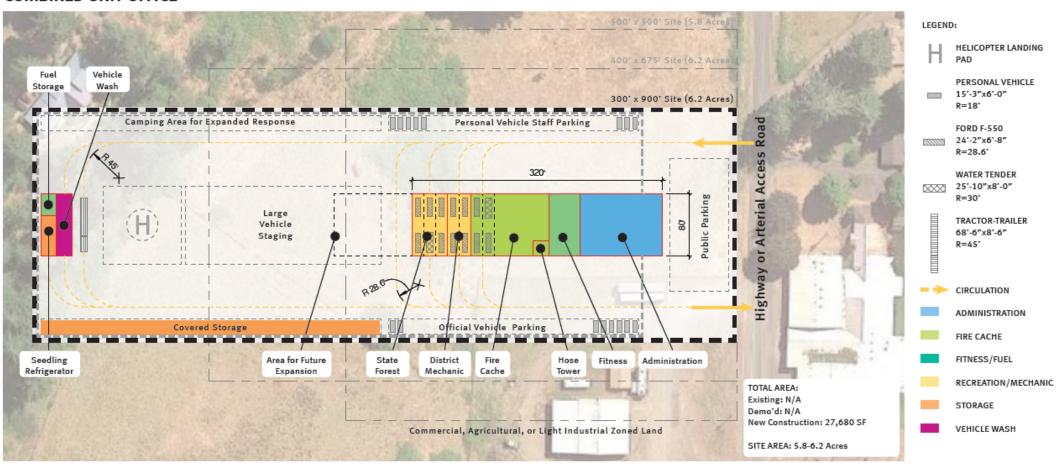








COMBINED UNIT OFFICE



BENEFITS

- Combining campuses results in a less site and building to construct/maintain compare to two sites and two buildings.
- Allows for best practice principles to be incorporated into new building design.
- New construction would makes costly project phasing unnecessary.
- 4. No operational downtime.

DRAWBACKS

- 1. Finding an appropriate site could be challenging or expensive.
- Combined site may be more convenient for some stakeholders, but less convenient for others.





Attributions

Steering Committee:

Andy White – Northwest Oregon Area Director

Steve Wilson - North Cascade District Forester

Chris Stewart - Facilities Manager

Joseph Pfau - Facilities Project Manager

Unit Office Leadership:

Chad Montoya – North Cascade District Business Operations

Kyle Kaupp - Santiam Unit Forester

Levi Hopkins - Santiam Unit Wildland Fire Supervisor

Scott West - Molalla Unit Forester

Ryan Andrade – Molalla Unit Wildland Fire Supervisor

Hennebery Eddy Architects:

Michelle Vo - Principal in Charge

Gregg Sanders – Planner and Project Manager

Andrew O'Toole – Project Architect

Jessy Miguel - Interior Designer

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