A wide-angle photograph of Vancouver International Airport (YVR) taken from across the water. The airport's terminal building, control tower, and various aircraft are visible. In the background, there are large, forested mountains under a clear sky. An airplane is captured in flight, banking to the right in the upper right portion of the image.

# Changes to flight paths in Greater Vancouver Region and Southern Vancouver Island

## Changes in communities to the east, southeast, and south of the airport

### INTRODUCTION

The objective of the Vancouver Airspace Modernization Project (VAMP) is to enhance safety, modernize procedures, and ensure the airspace structure can accommodate the demand for air services. The project proposes changes to the instrument approach procedures for Vancouver International Airport (YVR) affecting a broad area around Metro Vancouver, with some places more affected than others.

While the focus of the Project was mainly on designing and introducing new instrument approach procedures for Vancouver International Airport, some procedures will remain the same – such as departure procedures and procedures used by aircraft operating under Visual Flight Rules (VFR) (such as helicopters or floatplanes).

The proposed RNP AR procedures will allow aircraft to line up with the runway sooner than when using a typical procedure today. As a result, aircraft will fly a shorter distance and consume less fuel will also be operating on a Continuous Descent profile, which enables an aircraft to descend on a quieter reduced engine setting.

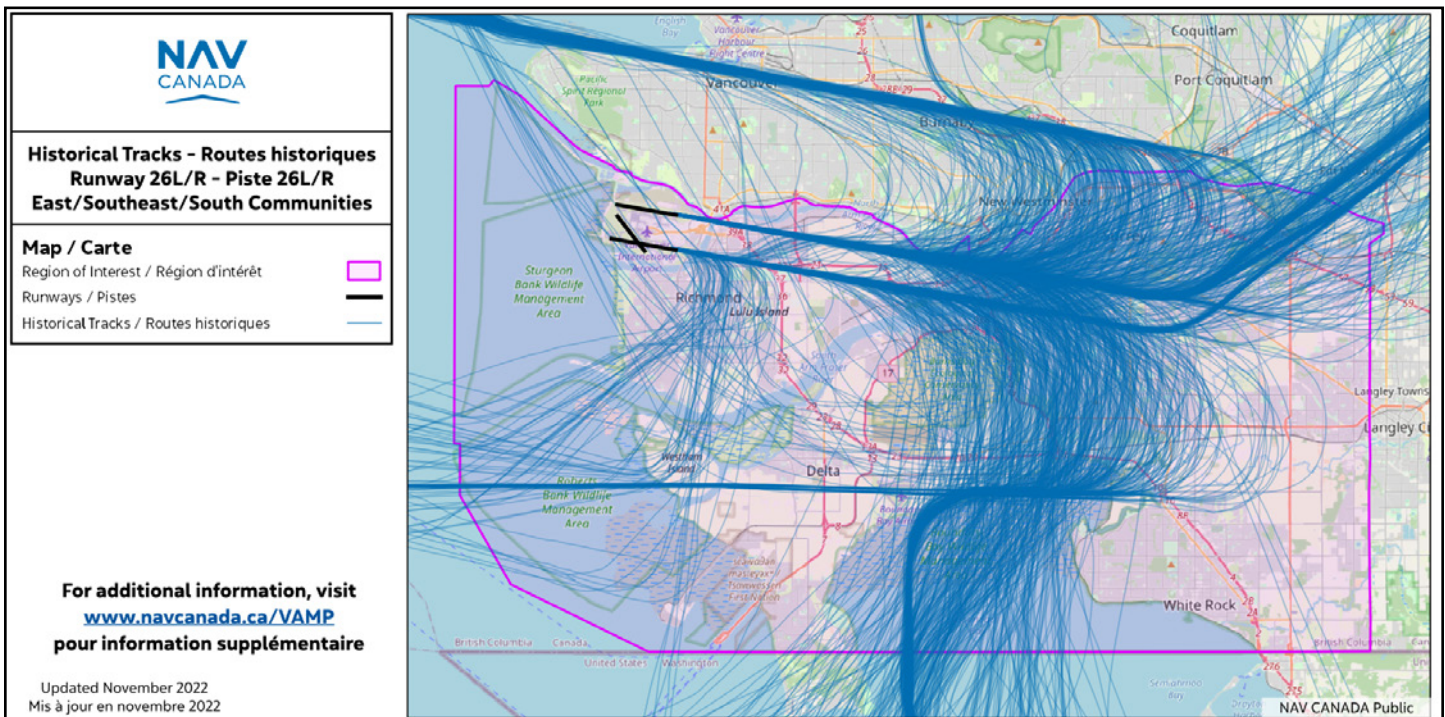
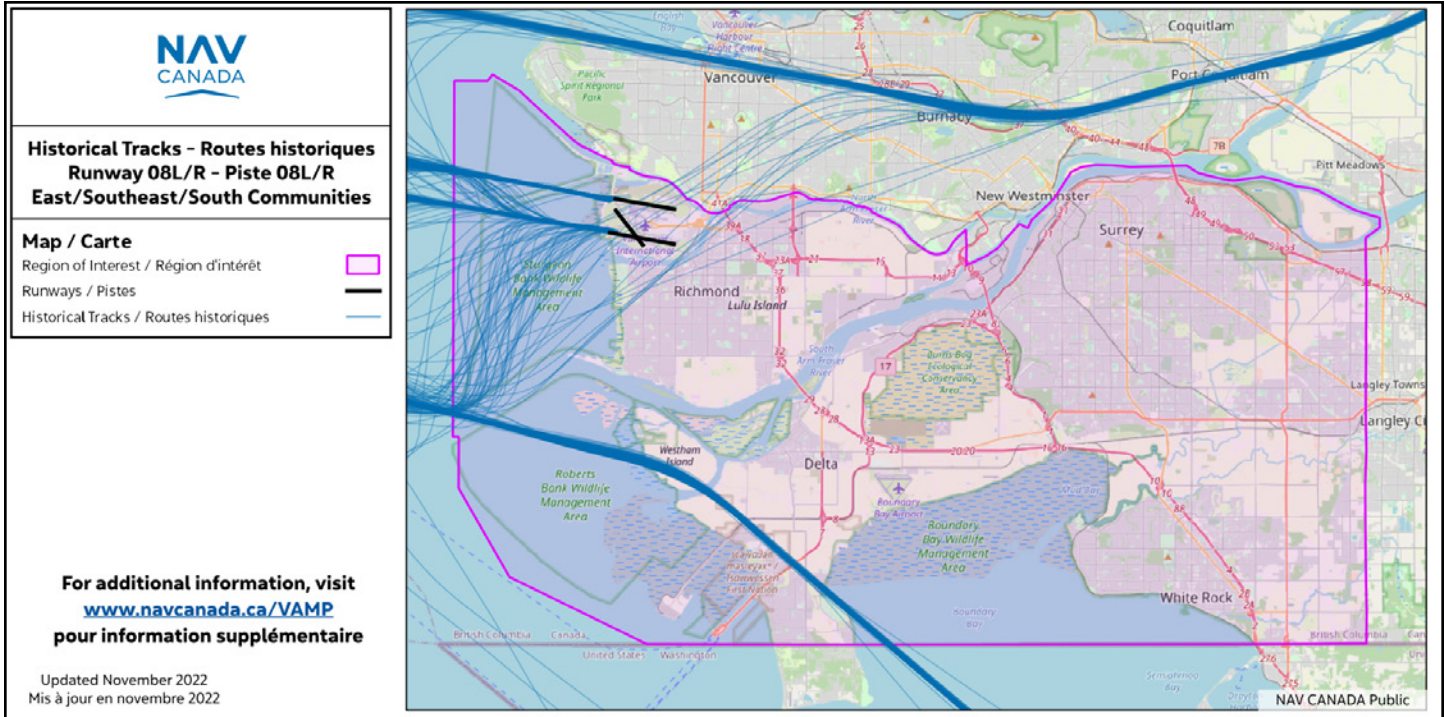
This document provides information on current procedures and flight paths as well as proposed changes affecting communities located to the east, southeast, and south of YVR.

### CURRENT OPERATIONS

For context, the images below show samples of arriving traffic over a few busy days in 2019 with existing procedures in place. The active runway is determined by wind conditions at the airport – for safety reasons aircraft must land and take-off into the wind. The first image shows aircraft arriving eastbound using runways 08L and 08R when winds are blowing from the east. The second image shows aircraft arriving westbound using runways 26L and 26R when winds are blowing from the west.



# COMMUNITY-SPECIFIC MAPS:



As can be seen, aircraft do not all follow the exact same path when they are arriving and some are often directed (or “vectored”) by air traffic control to operate off the procedures. This is done to ensure safe sequencing or provide for more direct routing and this practice will continue in the future. Determining which end of the runway is used is based on many factors including wind direction and speed. How often each runway direction is used will not change directly as a result of the proposed approach procedures.



# COMMUNITY-SPECIFIC MAPS:

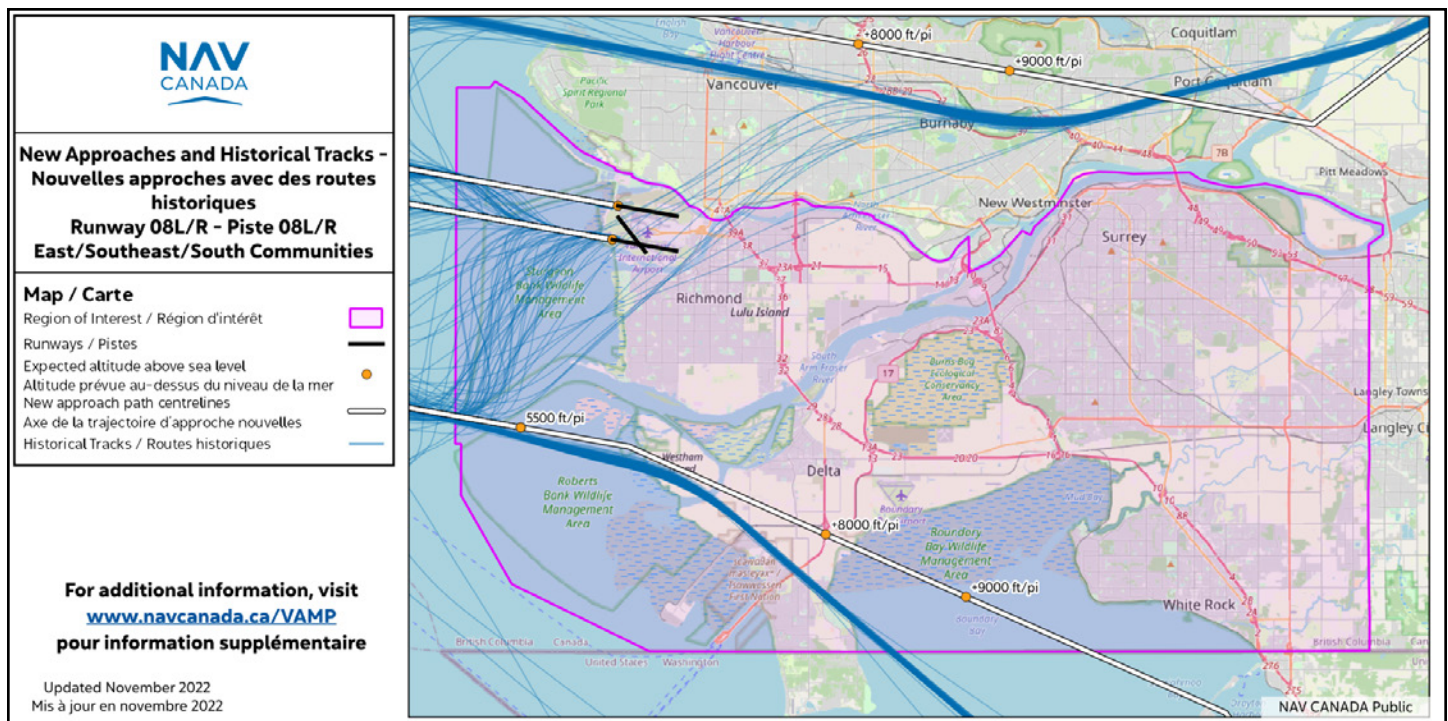
## PROPOSED CHANGES

NAV CANADA is proposing changes to instrument approach procedures at YVR including changes to existing procedures, the addition of new satellite-based procedures, changes to some existing procedures, and changes to some of the arrival routes further away from the airport.

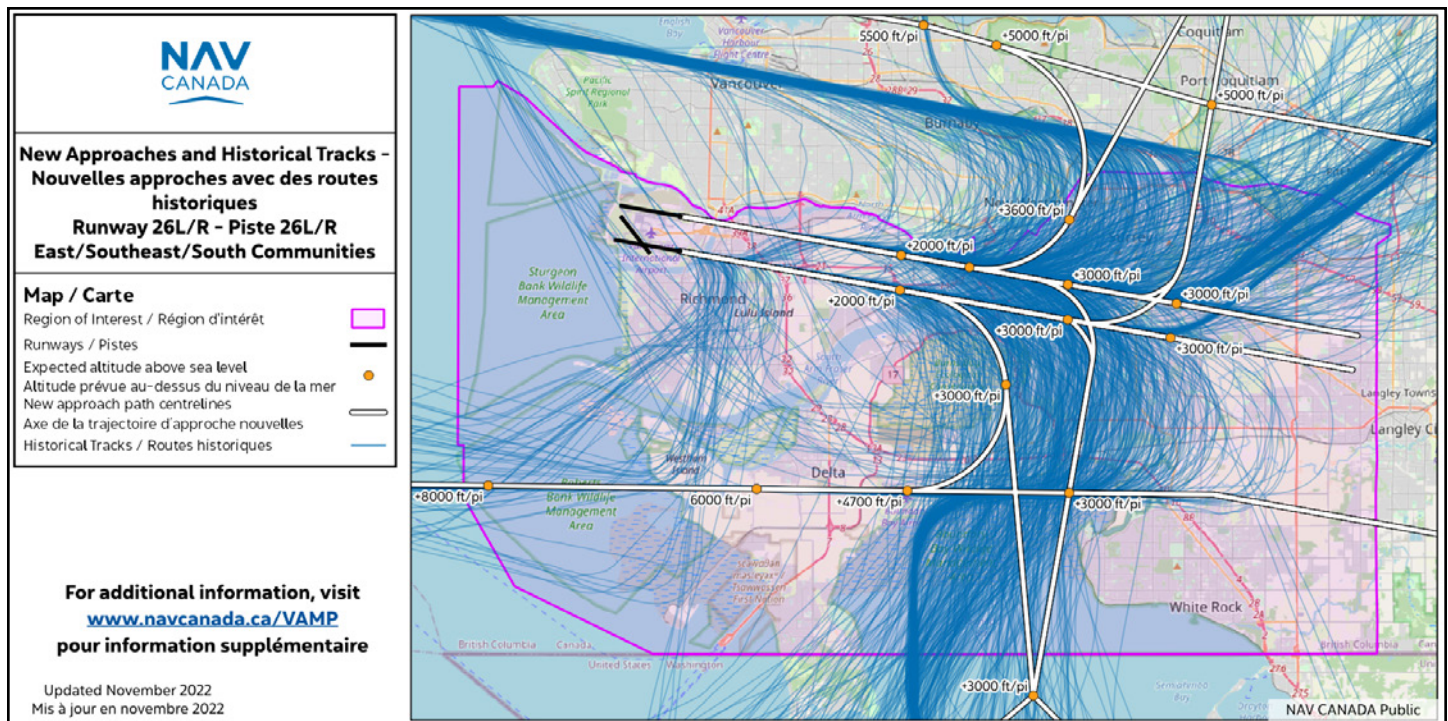
A key element of the project is the introduction of RNP AR approach procedures that defines a highly precise flight track including a curved segment along the approach which turns aircraft from the downwind segment (aircraft flying north of the airport in an east/west direction) to the final approach segment (when the aircraft lines up with the runway). This curved segment for the RNP AR procedure is different than what you see today as its path over the ground is precisely defined in advance and not subject to change on an aircraft-by-aircraft basis. Not every aircraft will use these curved segments.

Aircraft in this area will continue to utilize the downwind corridor as they do today, but only a certain percentage are equipped with RNP AR technology and holding certification from Transport Canada will use the curved part of the approach. Aircraft not using the RNP AR approach procedure will use the downwind and will be instructed to initiate their base turn one-by-one by air traffic control, leading to a high variability for where these aircraft will overfly the area. It is also not expected that 100% of RNP AR-equipped aircraft will fly the curved approach due to operational considerations such as traffic levels, aircraft sequencing, or weather.

The images below show the location of the arrival paths including the downwind segment and the curved path from downwind to the final approach along with the historical aircraft tracks shown in the earlier image. Another way to think about it is the aircraft shown in blue using the old routes would in the future fly along the new routes and new downwind and then some of those aircraft would take the shorter curved path.



# COMMUNITY-SPECIFIC MAPS:



## WHAT IT MEANS FOR COMMUNITIES

NAV CANADA assembled detailed information on aircraft operations for arrivals to YVR. This included specific aircraft fleet mix information such as aircraft type, arrival and departure times, and routes of flight. Using this data, noise modeling was conducted to better understand the noise footprint associated with the proposed procedures. Departures from YVR are excluded from noise modeling as there are no proposed changes to departure procedures.

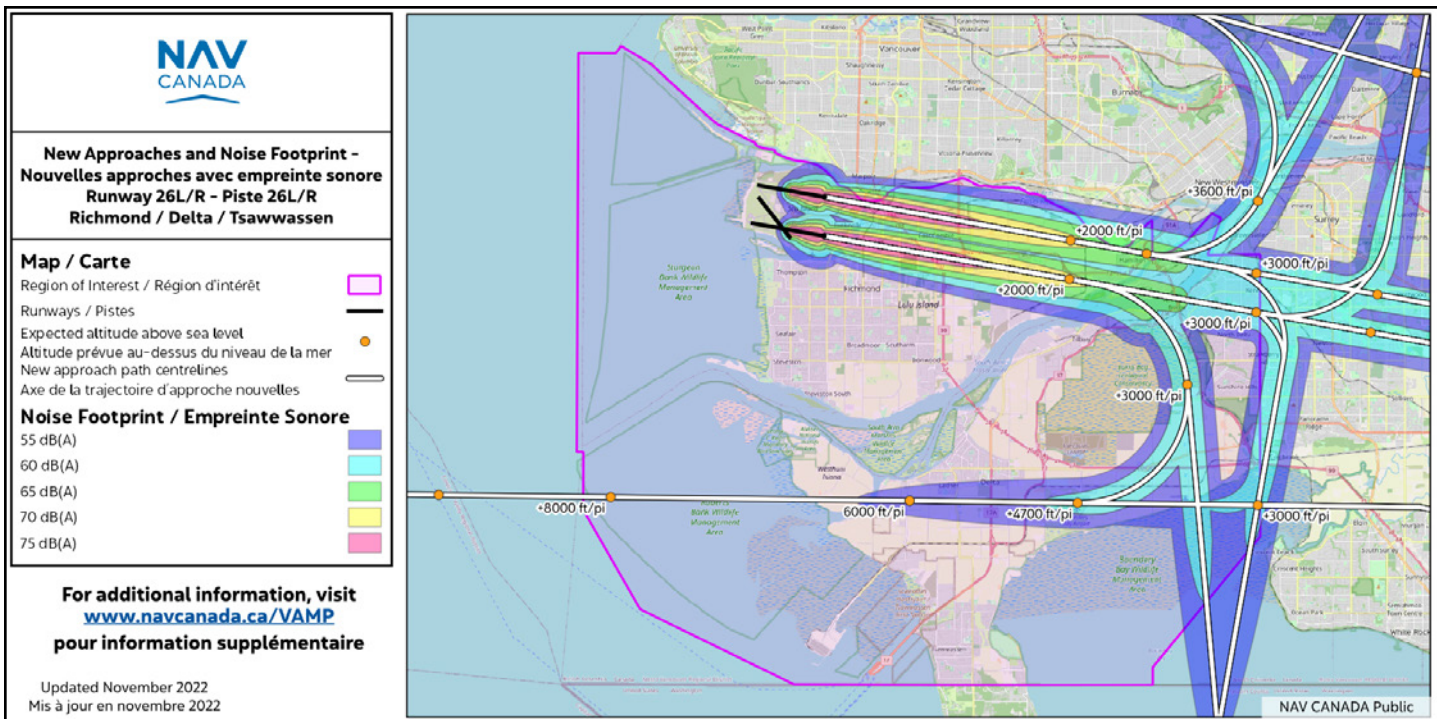
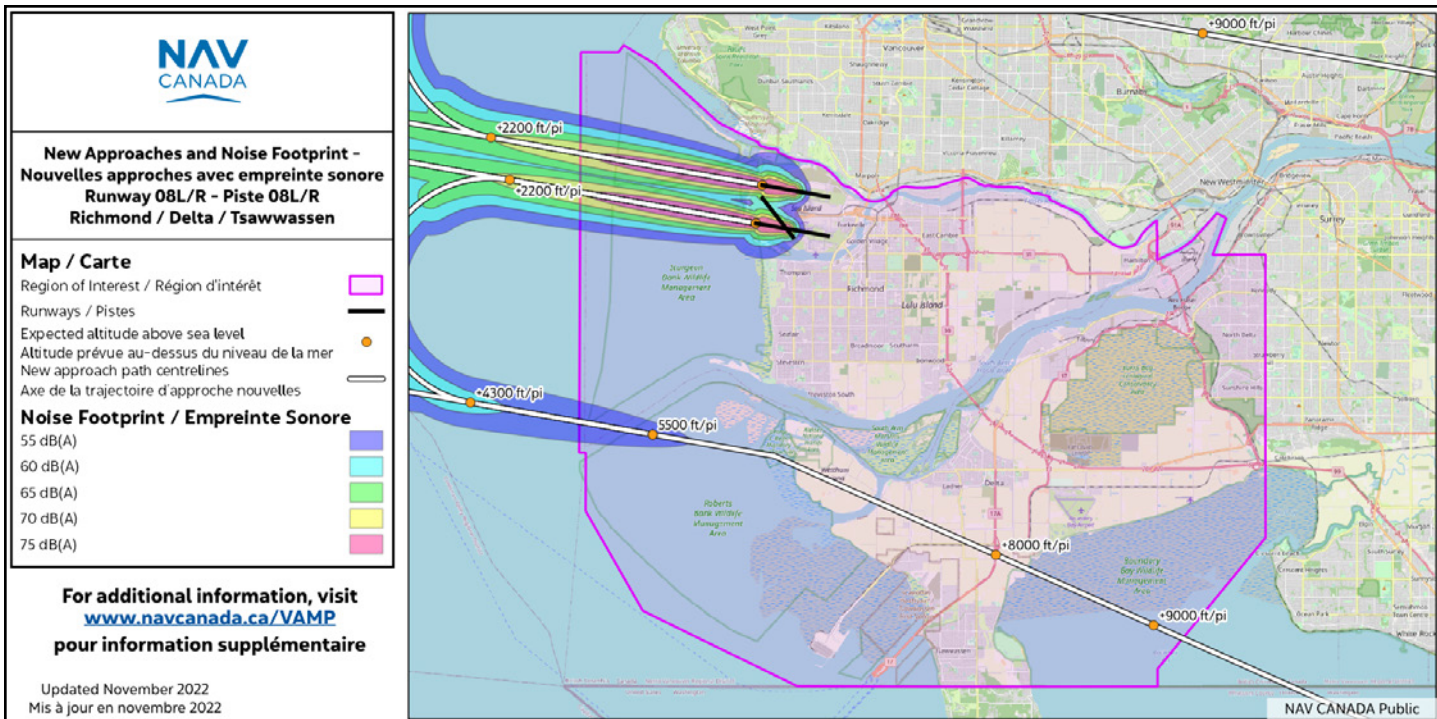
When operating outside certain categories of controlled airspace, aircraft operating under Visual Flight Rules (VFR) are not always required to be in contact with air traffic control. Because these aircraft operate at the pilot's discretion along non-defined highly variable routes, they have also been excluded from noise modeling.

The design of instrument approach procedures must meet stringent national and international standards to meet a high level of safety and all efforts were made to mitigate noise whenever it was safe and technically feasible. Despite incorporating a number of noise mitigation measures into the proposal, it is important to note that entirely avoiding overflight of residentially populated areas is simply not possible and that some residents may observe aircraft operating more regularly in certain areas than they had before. Most areas surrounding the airport will continue to observe many of the aircraft operations that they do today, whether they are associated with arrivals or departures.

The images below show the location of the downwind segment and the curved path from downwind to the final approach along with the noise "footprint" of a Boeing 737-800—a commonly used aircraft at YVR—conducting the arrival and approach procedure. Maximum sound level—expressed in decibels as dB(A)—is shown at various intensities using colours. Single-event noise level metrics represent the maximum noise level at a receptor location, considering a particular set of aircraft operations.



# COMMUNITY-SPECIFIC MAPS:





# COMMUNITY-SPECIFIC MAPS:

