



**MatSu Valley Planning for Transportation MPO
Metropolitan Planning Area Boundary Development Report
June, 2023**

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A Metropolitan Planning Organization (MPO) is an organization created to carry out the transportation planning process within a metropolitan area. The MPO is the Policy Board, designated by a State Governor, that carries out a “continuing, cooperative, and comprehensive” (3C’s) performance-based multimodal transportation planning process, including the development of long- and short-range plans. This process is done in cooperation with State and public transportation providers and under the guidance of a robust public participation plan. Federal legislation passed in 1962 requires that any Urbanized Area (UZA) with a population greater than 50,000 shall establish an MPO. “Urban” is defined by development density within or outside municipal limits, meaning that unincorporated areas surrounding municipalities can also be defined as part of an urbanized area.

This report describes the process by which the Matanuska-Susitna Borough (MSB) met the federal requirement to define a Metropolitan Planning Area contiguous with the new ‘Wasilla/Knik-Fairview/North Lakes, Alaska’ Urbanized Area identified in the 2020 Census.

It is meant to provide technical assurance for stakeholders throughout the approval process of the associated Metropolitan Planning Organization, and can hopefully serve as a reference to future local governments who are seeking a robust process which can be managed with the typical resources and staffing available to a rural municipality on the cusp of urbanization.

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Acronyms

AMATS	<u>A</u> nchorage <u>M</u> etropolitan <u>A</u> rea <u>T</u> ransportation <u>S</u> olutions The MPO for the Municipality of Anchorage
DCCED	The Alaska <u>D</u> epartment of <u>C</u> ommerce, <u>C</u> ommunity, & <u>E</u> conomic <u>D</u> evelopment
DOL	The Alaska <u>D</u> epartment of <u>L</u> abor and Workforce Development
ISER	<u>I</u> nstitute of <u>S</u> ocial and <u>E</u> conomic <u>R</u> esearch A public policy research institute affiliated with the University of Alaska.
MPO	<u>M</u> etropolitan <u>P</u> lanning <u>O</u> rganization
MPA	<u>M</u> etropolitan <u>P</u> lanning <u>A</u> rea The region in which an MPO creates plans and distributes funds
MVP	<u>M</u> atSu <u>V</u> alley <u>P</u> lanning for Transportation The MPO for the Matanuska-Susitna Borough
TAZ	<u>T</u> raffic <u>A</u> nalysis <u>Z</u> one A unit of geography commonly used in transportation planning models
TDM	<u>T</u> raffic <u>D</u> emand <u>M</u> odel A transportation planning model simulating a region’s traffic network which includes a forecasted spatial population distribution
UZA	<u>U</u> rbanized <u>A</u> rea A designation by the Census Bureau indicating that measured settlement densities in a region have surpassed a ‘rural’ designation.

1. Problem Statement

“At a minimum, the MPA boundaries shall encompass the entire existing urbanized area [...] plus the contiguous area expected to become urbanized within a 20-year forecast period for the metropolitan transportation plan.”

- 23 CFR § 450.312(a)(1)

A Metropolitan Planning Area (MPA) is the region served by an MPO. The creation of an MPA boundary can be considered in two parts. The first part, a definition of the minimum boundary, is a technical process defined by specific metrics established by the Census Bureau such as houses per square mile and ‘Hop’ and ‘Jump’ distances. As described in the statute above, the process requires at least one 20-year population forecast with a spatial distribution component.

Once the minimum boundary is predicted, an MPO may consider expanding the boundary to allow for a comprehensive transportation planning process and the distribution of federal funding to the transportation projects which serve the urbanizing population. MPO funding can only be distributed to projects inside of the MPA, so an effective boundary may be drawn to include traffic generators such as remote trailheads, popular parks, and schools even if those destinations are in regions with low residential density outside of the required minimum boundary. An effective MPA boundary may also expand beyond the minimum requirement to align with existing administrative boundaries like local assembly districts or road service areas. An effective boundary can also simplify future planning if it encompasses an entire road or crosses it at an intersection or physical landmark, rather than along Census Block borders or at arbitrary points. Local politics and community attitudes can also be expected to play a role.

The final boundary, which includes the minimum area supported by the population forecasting process plus the additional areas agreed upon by policy makers, establishes the Metropolitan Planning Area for the MPO once approved by the Governor’s office.

2. Defining a Minimum Boundary

2.1. Population Forecasting

2.1.1. Selections

At the time of this exercise, the Matanuska-Susitna Borough does not produce any population forecasts internally. Presumably like many rural and urbanizing municipalities, when population forecasts are needed the MSB relies on products produced by the state and federal government, academic and non-governmental institutions, and private consulting firms.

To begin the population forecasting process, MSB staff attempted to collect all available population forecasts for the Mat-Su Borough produced from 2005 onward. Email communication with the institutions known to regularly produce forecasts (particularly the Alaska Department of Labor, *DOL*, and the University of Alaska’s Institute of Social and Economic Research, *ISER*) attempted to ensure that none were missed. Thirteen distinct forecasts were identified, some of which included high, medium, and low growth scenarios. Care was taken to track the assumptions associated with each forecast; some were explicitly created for economic studies representing conditions after completion of large hypothetical infrastructure and business projects.

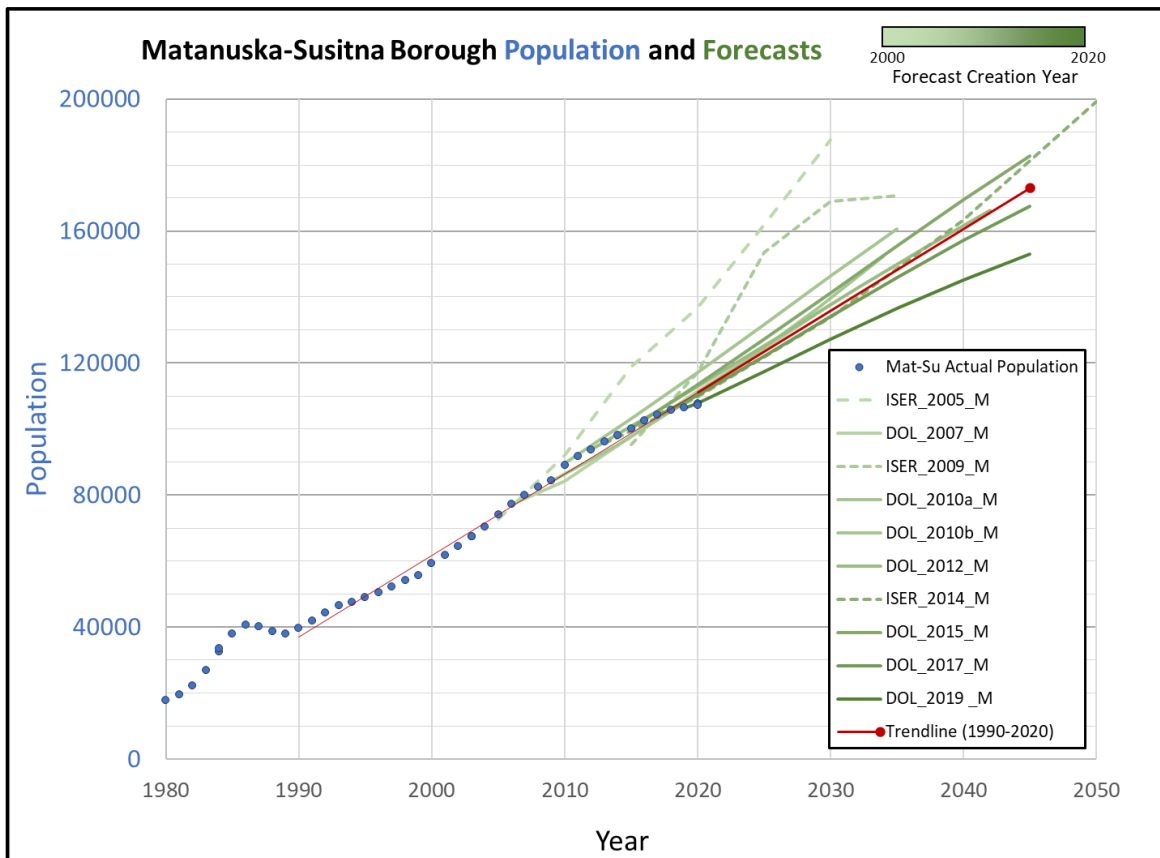


Fig. 1 – Measured Mat-Su Borough population vs. time, to 2020, is shown as blue point data. Ten Ma-Su Borough population forecasts, produced by the DOL and ISER between 2005 and 2019, are shown as green lines, and a linear trendline from 1990-2020, projected to 2045, is shown as a red line.

The growth of the Mat-Su Borough, from a population of 6,500 residents to 107,000 in the 50 years between 1970 and 2020, is remarkable. However, it is also notable that forecasted growth has consistently been lowered over time. Alaska Department of Labor (DOL) predictions of the 2035 MSB population, which were created using consistent assumptions, have reduced from roughly 161,000 in the 2010 forecast, to 146,000 in the 2017 forecast, to 136,000 in the most recent 2019 forecast.

Ultimately a shortlist of four Borough forecasts produced between 2014 and 2021 were presented to the Pre-MPO Policy Board to select one as a basis for the minimum MPA Boundary. Two forecasts were produced by the Alaska Department of Labor, one by the public policy institute ISER, and one by private economics consultants Woods & Poole. On April 20, 2022, the Policy Board directed staff to use the 2019 Department of Labor forecast, which predicts a population of 153,086 for the entire Mat-Su Borough in 2045. That population increase equals a growth of 45,505 additional residents from the 2020 Census to 2045.

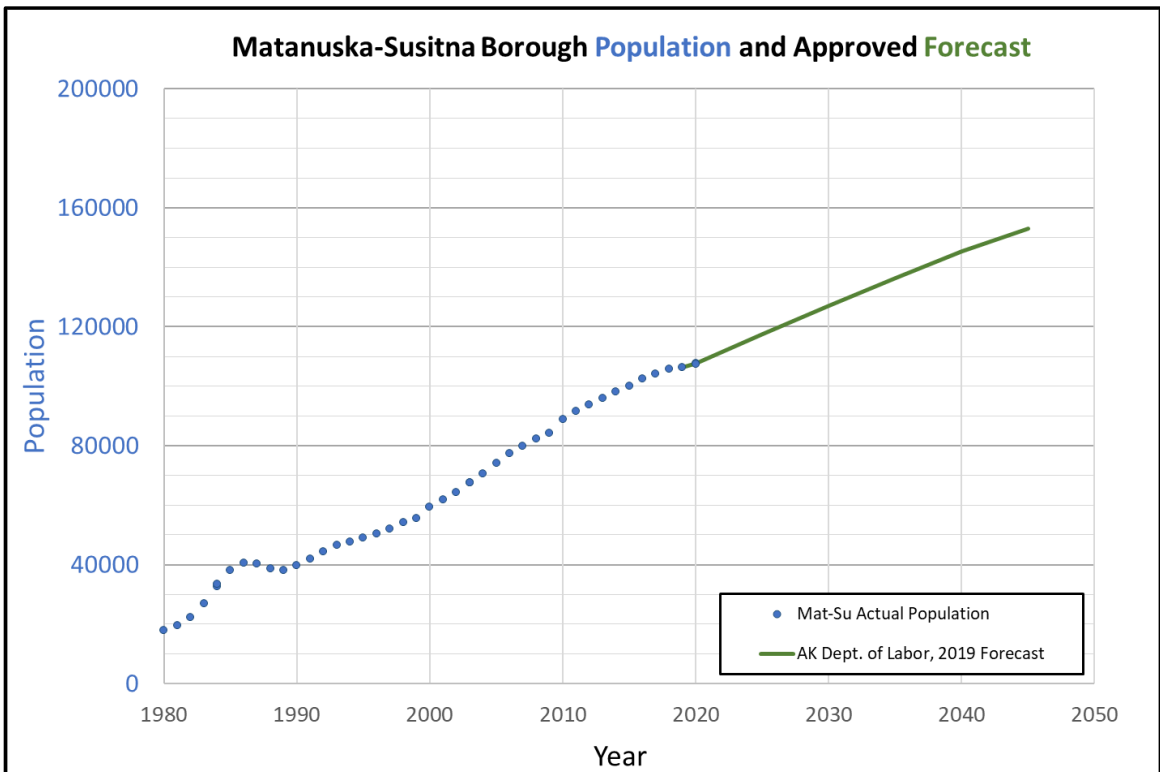


Fig. 2 - Measured Mat-Su Borough population vs. time, to 2020, plus the 2019 Alaska Department of Labor forecast approved by the Pre-MPO Policy Board for use in MPA boundary definition process. The forecast predicts 153,086 Borough residents by 2045.

Department of Labor projections “do not consider the population effects of potential structural changes to the economy, such as those that might occur with transportation infrastructure development or with large-scale industrial development.” That assumption is consistent with the assumption of the MPA boundary development process that there will not be a major transformation in the local economy within the next twenty years.

2.2. Spatial Distribution

2.2.1. Geometry

2.2.1.1. AMATS TAZ Polygons

The area of interest for this MPO boundary development project was defined as the Borough territory covered by a 2013 Anchorage Metropolitan Area Transportation Solutions (AMATS) Travel Demand Model, for reasons discussed in **Section 2.2.2, The Initial Plan: AMATS Model Adjustment**. That decision was driven by an intended boundary development methodology which was later revised, but the area of interest was preserved. AMATS is the existing MPO for a region including Anchorage and Eagle River.

The Borough territory covered by the AMATS model is divided into 249 Traffic Analysis Zone (TAZ) polygons, shown in purple on the map below.

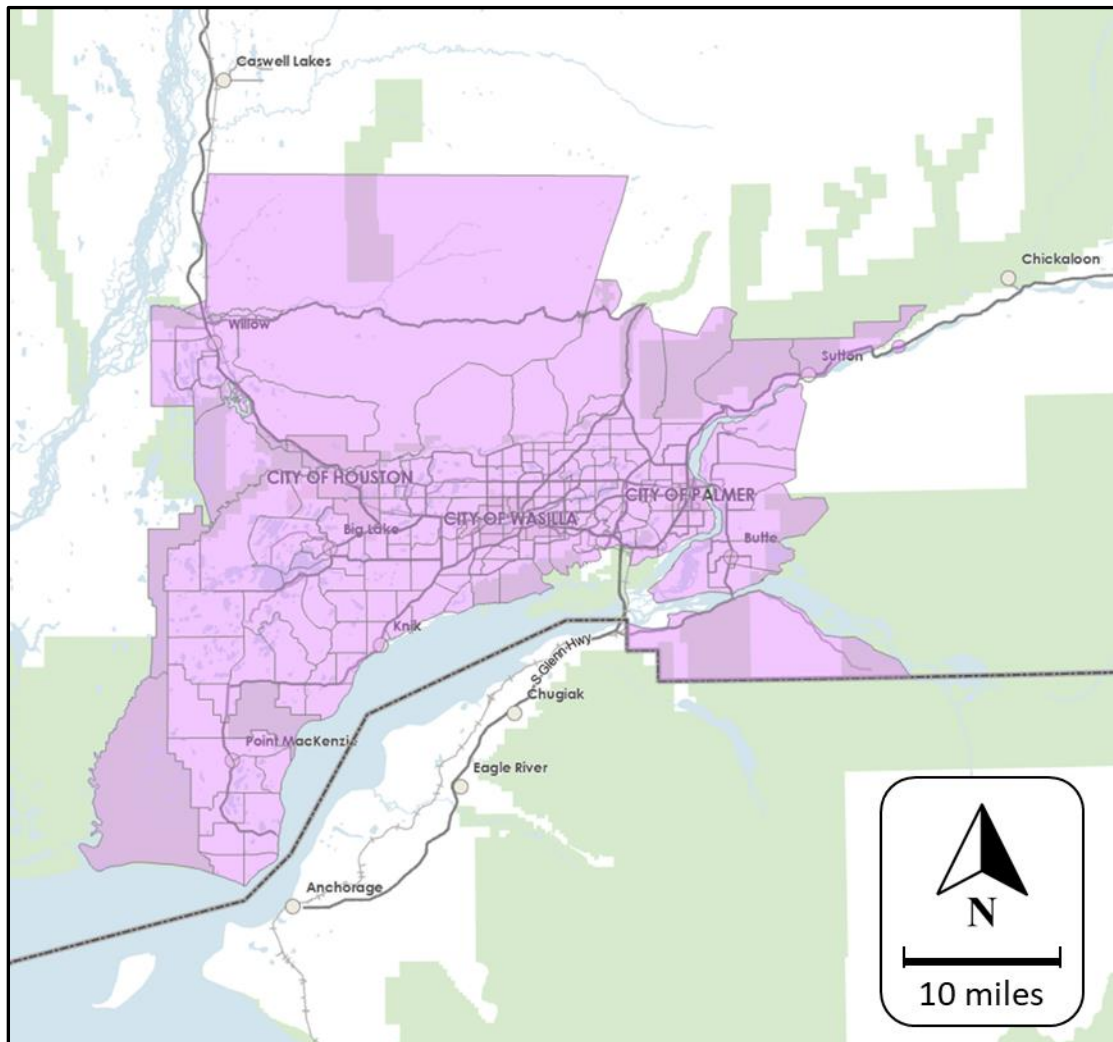


Fig. 3 - TAZ Polygons within the Mat-Su Borough from the AMATS 2013 Travel Demand Model are shown in purple. This area defines the area of interest for the MPA boundary development process.

2.2.1.2. Census Blocks

Census Block boundaries are the defining spatial elements of both Urbanized Areas and minimum Metropolitan Planning Areas. As mentioned in the previous section, the area of interest for this MPO boundary development exercise was defined based on TAZ polygons from a Travel Demand Model. In order to convert a spatially distributed population forecast for the area of interest into the Block-based metrics required to follow Census Bureau criteria, a total of 1792 Census Blocks covering the area of interest were extracted from 2020 Census data. Those polygons are shown in green on the map below, in comparison to the TAZ polygons in purple.

As can be seen by comparing the two datasets, selecting 2020 Census Blocks which intersected with TAZ polygons produced some large non-overlapping areas, particularly along the northern edge of the area of interest. This is not a major concern because the distribution methodology considered privately owned land, and the peripheral areas of Census Blocks which are not overlapped by TAZ polygons have little private land ownership.

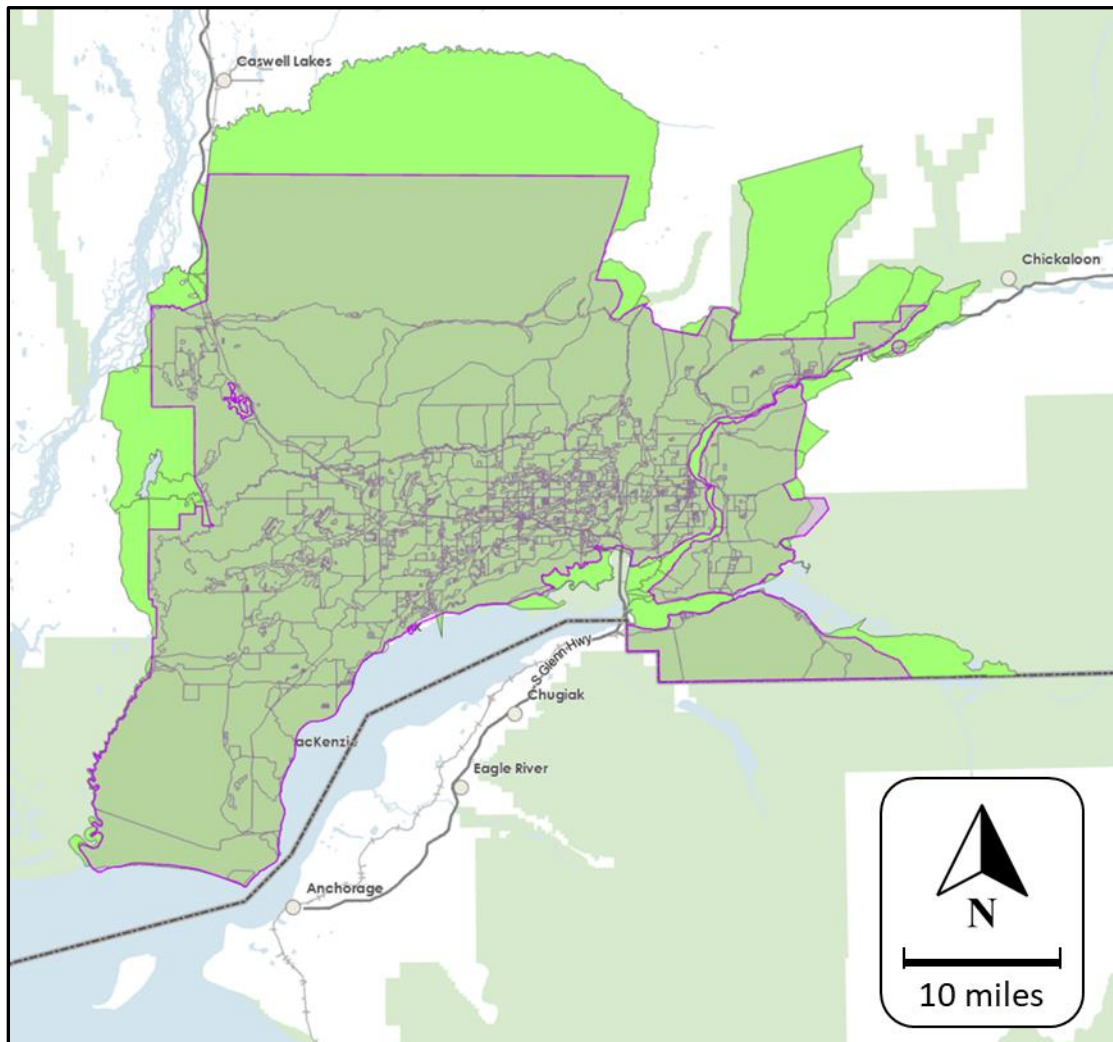


Fig. 4 - 2020 Census Blocks are shown in green for the region of the Borough covered by 2013 AMATS TAZ polygons, shown in purple.

2.2.1.3. Cadastral Parcels

The third spatial dataset which was incorporated into this project was Cadastral Parcel property data exported on June 17, 2022 from the Mat-Su Borough public GIS data website, <https://data1-msb.opendata.arcgis.com/>

The standard attributes available in the public Cadastral Parcel dataset were supplemented with a set of attributes known as Constrained Lands flags, which describes various potential constraints to development for each parcel in the Mat-Su Borough. The Constraints attributes were developed by the Borough Planning Division in 2022 for use in projects related to land development. Not all attributes were used during this analysis.

Category	Constraint
Natural	Water
	Floodplain
	Wetlands
	Elevation
	Remoteness
Development and Designation	Right of Way (ROW)
	Legislatively Designated Areas
	Parks & Rec.
	SPUDs [Special Use Districts]
	Agricultural Restrictions
	Wetland Bank
	Public Facilities
	Currently Built Residential
	Currently Built Other
Ownership	City
	State (Non-Disposable Interest)
	Federal
	MSB
	Cooperative

In the methodology used to define a minimum MPA boundary for this project, which is described in **Section 2.2.5, Process**, forecasted future population growth was distributed onto cadastral parcels which were flagged as available for future development based on properties such as private ownership and lack of current buildings. The distributions were then summed up by TAZ or Census Block to test whether an area passed the threshold for 200 Houses per Square Mile (HPSM) required to be included in the minimum MPA.

2.2.2. The Initial Plan: AMATS Model Adjustment

At the beginning of this project, the 2013 AMATS Travel Demand Model was the only population forecast available for the area with a spatial distribution component. The initial plan by Borough staff was to mathematically adjust the population forecast included in the AMATS model in order to match the selected Department of Labor 2019 population forecast.

The total necessary adjustment appeared to be minor. The 2013 AMATS TDM forecasted a summed 2040 population of roughly 151,000 residents living within the TAZ polygons located within the Borough. The 2019 Department of Labor forecast of roughly 153,000 residents for the entire Borough in 2045 is equivalent to roughly 143,000 residents in a comparable area covered by the AMATS forecast. So roughly a -5% adjustment to the forecasted population for Borough territory included in the 2013 AMATS model would produce a match to the total forecasted population in the selected Department of Labor forecast.

However, on examining the AMATS model it was found that the spatial distribution of that population as predicted in 2013 was significantly different than actual settlement patterns observed from 2013-2022. By 2022, actual population growth in northern and eastern peripheral regions (e.g. the Palmer-Wasilla Fishhook, Lazy Mountain, and the Butte) had already exceeded the total forecasted growth in those areas predicted by the AMATS model by 2040. Meanwhile, actual growth lagged significantly behind a linear rate of predicted growth in the southeast. The forecasted growth in the southeastern corner of the area of interest reflected assumptions prevalent in 2013 that large engineering projects such as industrial development of Port MacKenzie would draw new residents to that area. Those projects still show no signs that they will be completed within the next 15-20 years.

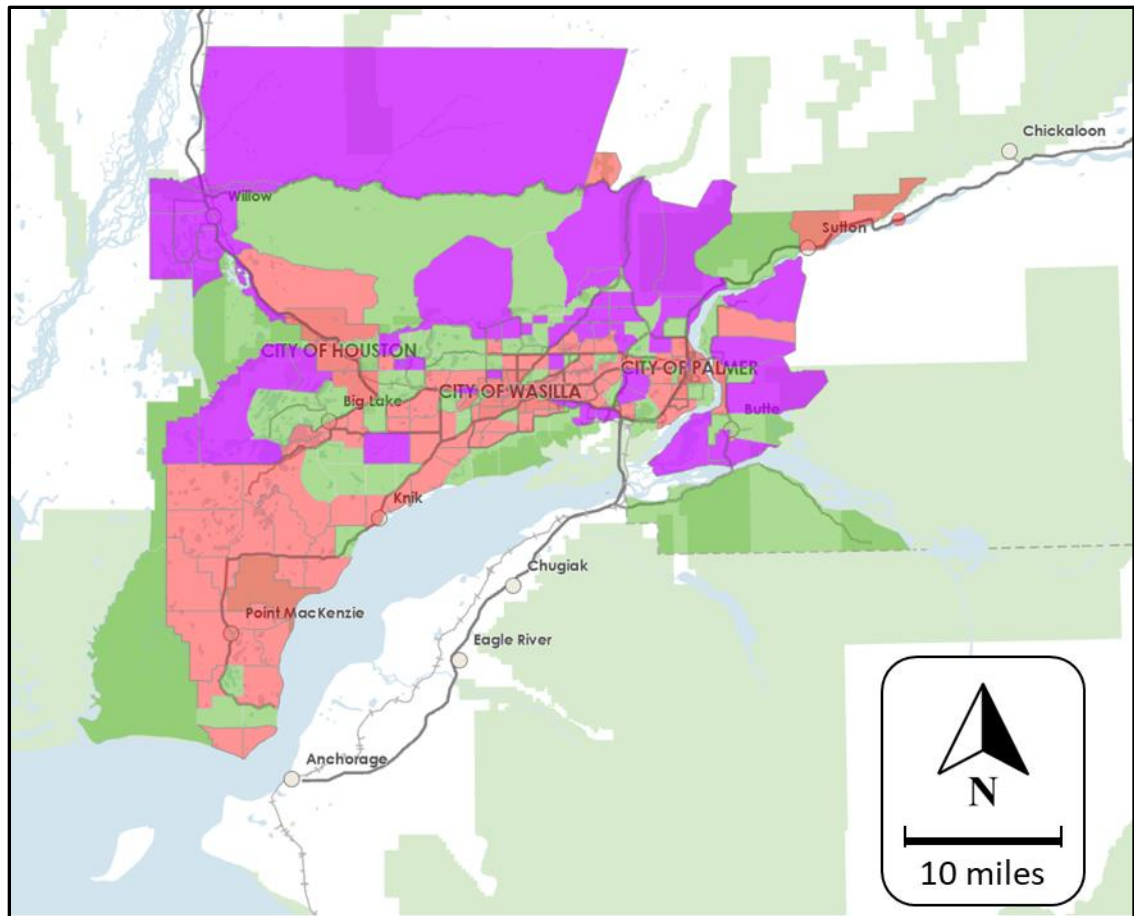


Fig. 5 - TAZ polygons, shaded using actual 2013-2022 residential construction data from the Borough's Assessment Division. By May 2022, TAZ polygons shaded purple had exceeded the total residential growth predicted by 2040 in the AMATS TDM. Polygons shaded red indicate areas where actual residential construction lagged behind forecasted construction, assuming a linear growth rate, and polygon shaded green were roughly in line with forecasted construction rates.

Borough staff concluded that the differences in forecasted versus observed actual growth from 2013-2022 had deviated too far to allow the AMATS 2013 model to be used with minor adjustments. No simple forecast adjustments could redistribute forecasted growth from the regions growing slower than the model expected to the regions growing beyond model expectations. The effort and skills required for any robust attempt to redistribute the AMATS 2013 forecast to match observed growth would be comparable to building a new TDM.

2.2.3. Population Forecast Adjustments

The initial intent for the spatial forecasting process to determine the minimum MPA boundary was to update the 2013 AMATS TDM to match the selected 2019 Department of Labor population forecast. That Department of Labor forecast, along with most other available forecasts, offer a single total population prediction for the entire geographic area of the Borough. In order to apply that forecast to the area of interest of the AMATS TDM, the Department of Labor forecast must be adjusted to subtract the fraction of the total Borough population living outside the area of interest.

The fraction of the total Borough population living inside the area of interest was estimated using the annual population estimates produced by the Alaska Dept. of Commerce, Community, & Economic Development (DCCED). DCCED population estimates are provided at the community level. At the time of writing, DCCED population estimates are available online through the [DRCA Data Portal](#).

At its initialization year in 2013, the AMATS TDM models a population of 89920 in the portion of the Borough which it covers. DCCED data from 2013 estimates that 89258 Borough residents lived inside that same area of interest, compared to 6816 living outside the area of interest. DCCED data therefore agrees well with the AMATS initialization state, and provides the information necessary to calculate the fraction of Borough residents living in the area of interest. 93% of Borough residents in 2013, or 89258 of 96074 residents, lived inside the area of interest defined by the available AMATS model. That fraction was consistent with data available for other years from 2011 - 2022. For any adjustment of Borough-wide population data to the area of interest, 93% was used as the adjusting factor. Using that factor, the Department of Labor's 2019 forecast of a Borough-wide population of 153086 residents by 2045 is equivalent to a population of 142370 in the area of interest.

As discussed in the previous **Section 2.2.2, The Initial Plan**, the initial plan was to adjust the final population of each TAZ polygon in the AMATS TDM by the same percentage in order to sum to the selected forecast. This initially appeared feasible: a relatively minor -5.5% adjustment to the AMATS 2040 forecast, totaling 151242 residents in the area of interest, would produce an outcome equal to 142370 residents in the area of interest, which would be in line with a total Borough population of 153086 (the target 2045 population in the selected Department of Labor forecast), and a historic 7% split of Borough residents who live outside of the AMATS polygons. However, simply subtracting 5.5% from each TAZ polygon produced a model which did not correspond to reality. Current measured populations in many areas of the Borough already significantly exceed the total forecasted growth predicted by the adjusted 2013 TDM. Measured population growth in other regions lagged far behind the growth predicted in 2013, with no reasonable expectation of catching up. No reasonable approach could be found to produce a forecast matching the predicted total population by individually adjusting the forecasts in each TAZ polygon. After discussions and consideration, this approach was abandoned.

	Population Estimates		Population Forecasts		
	2013		2040	2045	
	AMATS	DCCED	AMATS	ADOL_2019	Adjusted AMATS
Sum AMATS TAZ in MSB	89920	89258	151242		142370 ³
Other MSB		6816			
MSB Total		96074		153086	153086 ²

Data Source:	DCCED Actuals (Estimated)
	AMATS Forecast
	ADOL_2019 Forecast
	Calculation

Calculations

1. DCCED data showed 93% [= 89258 / 96074] of the total population living inside of communities included in the AMATS Region of Interest.
2. The goal of this exercise is to create a 2045 population projection of the region covered by AMATS TAZ polygons which is proportional to a 2045 total Borough population of 153086, from the 2019 Department of Labor projection selected by the MPO Policy Board.
3. Therefore an adjusted TDM population of 142370 [= 153086 * 0.93] is consistent with the selected Department of Labor forecast of the total Borough population in 2045, and with DCCED-derived ratio of 93% of Borough residents living inside of TAZ polygons.

**DCCED-Identified communities within the Mat-Su Borough,
by location inside versus outside the AMATS TDM and MPO Boundary project area of interest.**

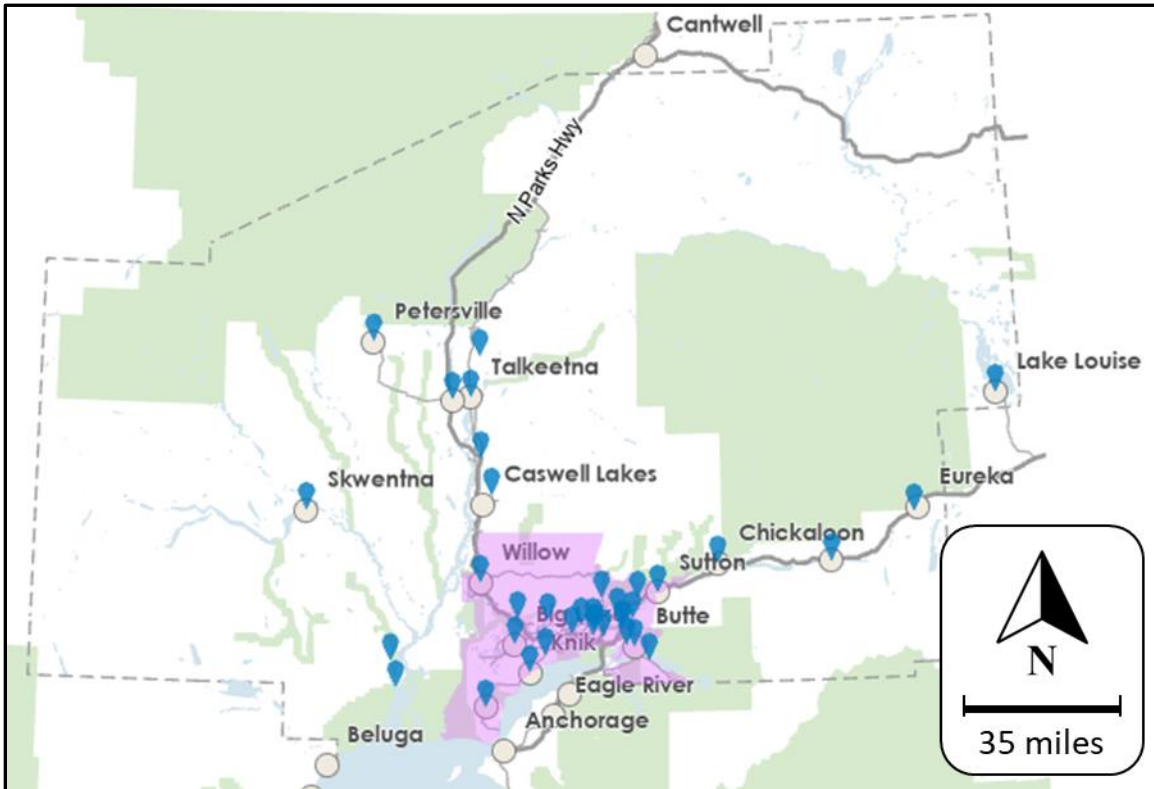


Fig. 6 - DCCED-Identified communities within the Mat-Su Borough, as blue pins, shown against the 2013 AMATS TAZ polyons defining the area of interest for the MPA boundary definition process, in purple.

Tbl. 1 - Matanuska-Susitna Borough communities, by location inside or outside of the area of interest.

MSB Communities Inside the Area of Interest		MSB Communities Outside the Area of Interest
Big Lake	Lakes	Alexander Creek
Buffalo Soapstone	Lazy Mountain	Caswell
Butte	Meadow Lakes	Chase
Circle View Stampede	North Lakes	Chickaloon
Farm Loop	Palmer	Eureka Roadhouse
Fishhook	Point MacKenzie	Glacier View
Gateway	South Lakes	Lake Louise
Houston	Sutton-Alpine	Petersville
Knik	Tanaina	Skwentna
Knik River	Wasilla	Susitna
Knik-Fairview	Willow	Susitna North
		Talkeetna
		Trapper Creek

2.2.4. Reframing the Problem

Without the option of adjusting the AMATS 2013 TDM and without any other spatially distributed population forecasts, it was back to the drawing board for the MPO boundary methodology. A concept started to coalesce around the basic assumption that **all land to be used for residential construction until 2045 is already in private hands**, i.e. owned by individual residents or corporations rather than City, Borough, State, Federal, Tribal, Mental Health Trust, or Cooperative ownership. A large amount of land within the Borough is owned by a public entity, and parcels are slowly sold into private ownership and developed for residential or commercial use. However, in most cases it is likely to take more than 20 years for the full process of a large public parcel to be earmarked for sale, sold, purchased, planned for development, subdivided into smaller parcels, constructed upon, and sold into residential ownership.

The second core assumption was that a forecast should **assume that historical growth patterns will continue**. That is not a safe assumption for many planning exercises, but several qualities of the MPO process and the Mat-Su Borough make it reasonable in this case:

- First and foremost, the MPO governance process minimizes penalties for being wrong. The process requires re-examining the boundary following every decennial census, and also allows for boundary updates between censuses if deemed necessary. The ability to revise the boundary at any time reduces the consequences of over-prediction or under-prediction, and incentivizes forecasting the initial boundary based on ‘most-likely’ cases as opposed to attempting to consider a wider variety of fringe scenarios.
- Second, the Mat-Su Borough has demonstrated significant inertia in continuing the same basic settlement pattern over the past decades: sprawling growth of single-family residences typically on 1-acre lots due to septic system constraints. Past forecasts for various planning exercises have frequently assumed large impending development projects would significantly change settlement patterns, but for over 40 years nearly all predicted “game-changing” developments have never actually come to fruition. The relative lack of municipal water and sewer services, higher density housing, and major new commercial nodes can be sources of frustration in other planning contexts but for the sake of this project provide a silver lining of making midterm growth patterns more predictable.
- Finally, this assumption also helps keep the spatial distribution model consistent with the assumptions of the Department of Labor population forecast which was selected for this project. Department of Labor projections “do not consider the population effects of potential structural changes to the economy, such as those that might occur with transportation infrastructure development or with large-scale industrial development.”

2.2.5. Assumptions

This section serves to catalogue the basic metrics used in this project and briefly consider how sensitive the overall analysis is to errors in each metric.

Defining Private Ownership

The Cadastral Parcel layer maintained by the Mat-Su Borough's GIS department includes an attribute titled 'GENOWN' which categorizes land ownership. Only parcels with a GENOWN = 'Private' status were counted as land available for residential construction for the MPO boundary definition process. This excludes certain entities, such as the State of Alaska Mental Health Trust and Native Corporations.

The following notes were copied from the [GIS Data Dictionary](#) (version last updated Feb. 14, 2022)

Cadastral Parcels Layer - GENOWN Definitions (p.48-49)

MENTAL HEALTH – Property held in interest by the Mental Health Land Trust administered by the Alaska Department of Natural Resources.

BOROUGH – Property owned by the Mat-Su Borough.

CITY – Property owned by the Cities of Houston, Palmer, or Wasilla

FEDERAL – Property retained by the United States of America.

NATIVE CORP – Property owned, at least in part, by Alaska Native Regional Corporations or Village Corporations.

PRIVATE – Properties owned by private individuals, corporations, or trusts.

STATE – Properties owned by the State of Alaska, excluding those administered as part of the Alaska Mental Health Land Trust.

PUBLIC UNIVERSITY – University of Alaska lands.

COOPERATIVE – Matanuska Electric Association or Matanuska Telephone Association lands.

NA – Right of Way, water, or other area which falls between parcel polygons.

NO DATA – Areas where insufficient data is available. These areas may have been surveyed but likely do not have tax account numbers and do not appear on the Mat-Su Borough tax roll.

OWNERSHIP MISSING - The tax account exists in the Assessments database as an actual parcel, but the ownership information has not been filled in.

TAXID MISMATCH – The tax account number in the shapefile does not match the tax account number on the assessment roll.

Household Size: 2.6 Residents per Household

For this exercise the assumed mean residents per household was set at 2.6. That was based roughly on the U.S. national average; the current Borough average is 3 residents per household.

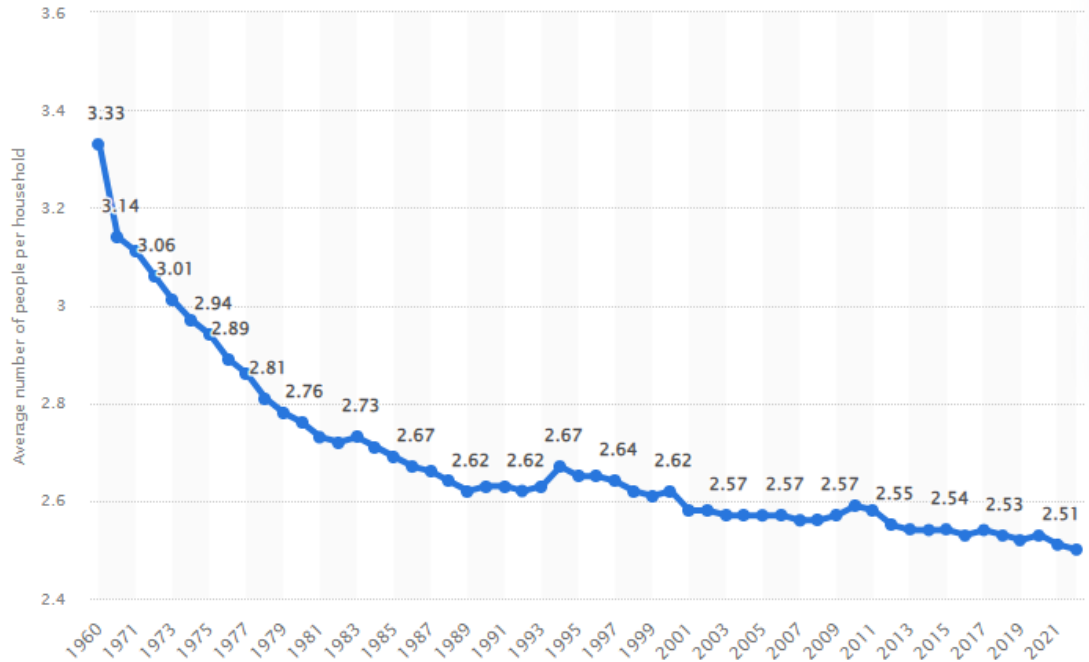


Fig. 7 - "Average size of households in the U.S., 1960-2022." Erin Duffin, December 12, 2022. [Statista.com](https://www.statista.com)

Considering the Borough has slightly larger households than the national average, this metric is more likely to be slightly underestimated than to be slightly overestimated.

For a constant number of forecasted additional residents, underestimating the number of people per household would result in a forecast of more total households and more developed land. The urbanization threshold is defined as 200 households per square mile for fringe areas known as "low-density fill" which are included in the minimum MPA. Dividing a forecasted +43000 residents into households of 2.6 residents rather than households of 3 residents would overestimate future housing requirements by 2200 households. In the absolute highest-spread scenario where any additional households are clustered and spaced at exactly 200 HPSM in peripheral areas, this would result in 11 additional square miles being included in the MPA. In comparison, the draft minimum MPO boundary produced by this exercise covers 120 square miles. A likely forecast error of less than 11 square miles, or less than 9% of the MPA, did not justify more effort to attempt to more accurately predict the average number of residents per additional household.

“Business as Usual” Density: 1.5 acres per Subdivided Lot

As described in **Section 2.2.5, Process**, for any future development on privately owned unbuilt parcels over 5 acres in size, it was assumed that the parcel would be subdivided into 1.5 acres per household. This reflects roughly a 1-acre lot with realistic room for right of way, utilities, etc. The 1-acre lot size prevalent in the Mat-Su Borough is related to minimum lot size required for a septic system.

There are multiple plausible scenarios for significant errors potentially overestimating or underestimating this metric.

A scenario with significant future expansion to water and sewer systems could open significant amounts of land to multi-family residential development, or single-family development on half-acre or quarter-acre lots. If expansion projects were started in the near-term future they could plausibly be completed by 2030 and effect development patterns for a significant portion of the forecast period, from 2030-2045. Increased core area housing density related to water and sewer development would reduce future sprawl and likely result in this forecast significantly overestimating the MPA boundary. However there is currently no indication that there is substantial new political willpower to pursue such infrastructure development.

One-acre lot sizing is the most common pattern of current subdivision activity, and a developer does have substantial financial incentives to maximize the number of sellable lots. However, subdivisions are frequently planned to produce larger parcels for a more affluent or spacious neighborhood. Developers also have the option to create denser spacing regardless of sewer availability, by placing up to 4 housing units on one acre with a shared septic system.

Error in the assumed average lot size has a complex effect on the error in the forecasted minimum MPA boundary. If actual average lot size is lower than the 1.5 acre metric, residential development will be concentrated and the forecasted MPA boundary will be larger than necessary. If the actual average lot size is more than 1.5 acres but less than 3.2 acres, the forecasted MPA will be undersized for actual growth because new households would require 2-3x as much area while still qualifying as urbanized. However, development above 3.2 acres per lot could exclude those areas from the MPA because continuous neighborhoods of larger than 3.2-acre parcels would not meet the urbanization threshold for 200 households per square mile. The Borough government does not currently exercise much control over zoning and land use, and each future subdivision anywhere in the Borough could plausibly be developed into any parcel size from 0.25 acres per household (4 units, 1-acre shared septic) to 3.2+ acre per household rural lots.

“Business as Usual” Settlement Nodes

For the purposes of this exercise, it was assumed that no major new commercial, industrial, or transportation developments would be completed and have a substantial impact on settlement patterns before 2045. Knik Arm Bridge and major expansions of industrial activity at Port MacKenzie are two examples of large projects which have been predicted for decades in various planning exercises, but still show no signs of completion within the forecast period for the MPA.

Especially due to the option of revising the MPA at any time in the future, Borough staff decided to disregard any major proposed projects until there is substantial evidence they will be completed and operational. The MPA can always be adjusted once cement is poured and ribbons are cut.

It does seem likely that smaller organic expansions of current activity will influence settlement patterns in certain directions, as opposed to an even spread in all directions from the current urbanized area. An example of this is the Palmer/Wasilla Fishhook area and its neighboring Hatcher Pass and Government Peak Recreation Area (GPRA) attractions. GPRA is currently the most-visited recreational trailhead in the Borough, and Hatcher Pass is a major recreational draw with a lodge and a modest developing ski park. A continuation of current growth based on existing traffic generators in this region could very plausibly lead to a complete shift from current rural status to urbanized status with substantial commercial nodes by 2045.

Residential vs. Commercial Development: Ratio of 20:1

Not all future construction in the Mat-Su Borough will serve residential uses. To more realistically predict population densities in built-out areas, it should be assumed that some fraction of currently vacant land will be developed for commercial purposes.

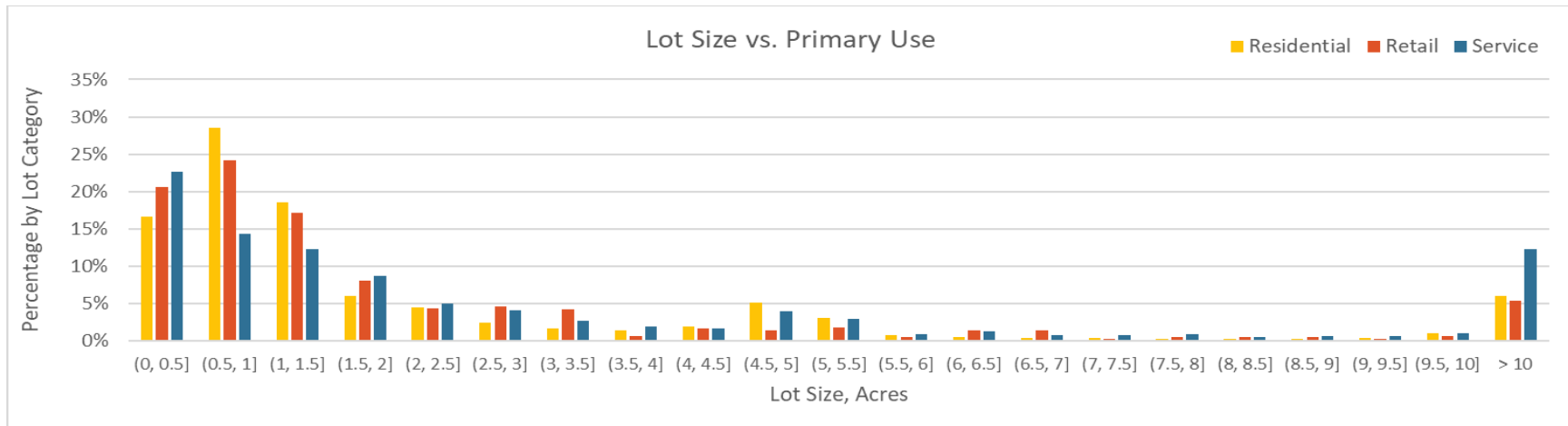
Based on construction data from the Borough Assessments Division, the last 10 years of construction produced 19 residential buildings per commercial building. Based on Building Use Codes available in the Cadastral Parcels data, the entire Borough has 25 parcels developed exclusively for residential use for every 1 parcel developed for commercial use.

For this forecasting process, a ratio of 20:1 was selected as an intermediate estimate between the 19:1 ratio seen in the last decade's construction and the 25:1 ratio seen in total development to date.

Although it is reasonable to assume that future commercial construction will not be uniformly distributed across all census blocks, this exercise did not include an effort to weight areas more likely to see commercial growth (e.g. those at major intersections). It is reasonable to assume that any future commercial nodes will develop near already urbanized areas, inside the MPA boundary.

Potential correlations between parcel size and residential vs. commercial use were tested and found to be insignificant. For parcels less than 10 acres, no particular parcel size is strongly correlated with a preferential use. The analysis is shown on the following page.

Mat-Su Borough Parcel Development Analysis



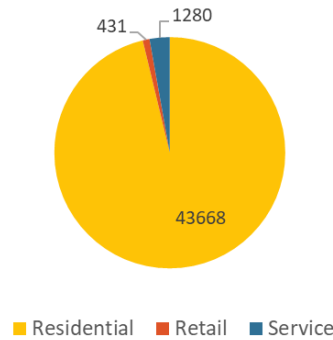
The top bar chart shows the distribution of lot sizes within each category. For example, the leftmost two yellow bars show that 15% of all residential lots in the MSB are 0 to 0.5 acres and nearly 30% of residential lots are 0.5 to 1 acres in size.

There is no significant difference in the distribution of lot sizes: for instance, half-acre and smaller lots are not avoided by business owners. The only lot size which appears significantly more attractive to any particular type of use is lots greater than 10 acre, which are preferentially used for services (including medical, educational, government).

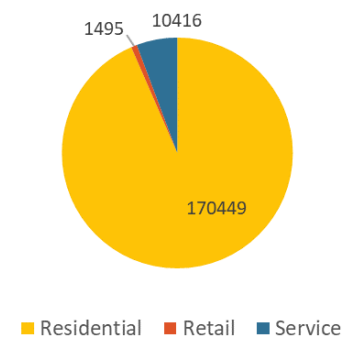
Although there is no difference in distribution, the pie charts on the left show that lot use within the Mat-Su Borough is overwhelmingly residential. So while roughly 15% of residential lots are 0 – 0.5 acres, and 20% of commercial lots are 0 – 0.5 acres, residential lots outnumber commercial lots at a ratio of 25:1



Primary Use by Number of Lots



Primary Use by Acreage



2.2.6. Process

1. Prepare Subset of Cadastral Parcels for Area of Interest

Cadastral parcels having their centers in a TAZ polygon in the area of interest were saved in an isolated GIS layer with the following data appended for each parcel:

- Development constraint data
- Construction activity data from 2013-2022
- Identification with either a TAZ polygon ID, or a Census Block FIPS number

The resulting layers were named Parcel_Assess_Block and Parcel_Assess_TAZ, and contain data for 60,192 cadastral parcels covering the area of interest and representing the state of land ownership on June 17, 2022.

2. Update TAZ Polygons and Census Blocks to 'Current' Development State

The native 'current' state of the TAZ polygons from the AMATS TDM is 2013, while the 'current' state for the Census data is 2020. To begin this exercise, both layers were updated to a consistent 'current' state representing June 2022, which was also consistent with the cadastral parcel data. The updates and all further work was tracked in two Microsoft Excel spreadsheets, one grouping cadastral parcels by AMATS 2013 TAZ polygons and the other grouping parcels using 2020 Census Blocks.

New home construction between 2013 and 2020, summed by TAZ polygon, was added in the TAZ spreadsheet to the number of households included in each TAZ polygon at the AMATS initialization state. This provided a directly comparable state with the 2020 Census Block data.

New home construction between 2020 and June 2022, summed either by TAZ polygon or by Census Block, was then added in both spreadsheets. This provided a state of existing construction which was comparable to the cadastral parcel data in June 2022, which represents the 'current' state and the initialization of the forecast in this MPO boundary development process.

3. Categorize Remaining Privately Owned, Unbuilt Land

The 60,192 cadastral parcels covering the area of interest in June 2022 were filtered to extract all privately owned parcels, without any residential or commercial construction. The final spatial forecast also excluded parcels with agricultural restrictions, as discussed in **Section 2.3.2.**

For the purposes of this exercise those private, unbuilt, non-agriculturally restricted parcels were then sorted into three categories:

- Parcels smaller than < 5 acres (13092 total)
- Parcels larger than 5 acres and undergoing platting actions in June 2022, as defined in the Borough's GIS layer which in 2022 was hosted at https://maps.matsugov.us/map/rest/services/Planning/Platting_Cases/ (473 total, representing 12680 acres). A large tract of land in the Government Peak Recreation Area was undergoing a platting action at that time, but was excluded due to certainty that it would not be developed into residential land.
- All remaining parcels larger than 5 acres and not currently undergoing platting actions (2973 total, representing 80989 acres). Parcels with known agricultural restrictions were excluded by having their acreage set to 0.

Each parcel was then assigned in both spreadsheets to the TAZ polygon or Census Block which its center was located in. When summed, the data represents the number of parcels and acreage of land available for future residential construction within any given polygon or block.

4. Distribute Forecasted Additional Population

At this stage in the process, both spreadsheets reflect the 2022 construction state of the Mat-Su Borough, plus categorized land available for future residential construction, all groups either by TAZ polygon or Census Block.

The number of additional residents forecasted to require housing from 2020 to 2045 was calculated as 42320, based on a 2020 Census Population of 107581 and a 2045 forecasted population of 153086 for the entire Borough, and a 93% adjustment factor to the area of interest. The column for home construction from 2020 to June 2022 was estimated to accommodate 1692 residents included in the forecasted 42320.

The Census Bureau's definition of 'urbanization' for 2020 urbanized areas is defined by thresholds of housing density (houses per square mile), as opposed to resident density (people per square mile) which was used in 2010. To provide for direct comparison to Census Bureau metrics, both spreadsheets primarily calculated additional houses forecasted to be built in each TAZ polygon or Census Block by 2045 to accommodate the expected population. Housing density could then be calculated by the sum of the total existing plus

forecasted households divided by the area of the block or polygon. As described above in **Section 2.2.5, Assumptions**, all new households were expected to accommodate 2.6 residents per household and all parcels greater than 5 acres were expected to be subdivided into 1.5 acre parcels per additional household.

Rather than producing a single deterministic forecast, this project produced a series of scenarios distributing the forecasted additional population growth across the available parcels in various ways.

For example, if a particular scenario assumed that 50% of available small parcels would be developed by 2045, then the total number of houses expected to be built on those parcels would be calculated as follows:

$(13092 \text{ available parcels}) * (20/21 \text{ parcels expected for residential vs. commercial development}) * (50\% \text{ of available parcels forecasted to be developed}) = 6616 \text{ total small parcels developed by 2045. That development would then be expected to accommodate } (6616 \text{ households}) * (2.6 \text{ persons per household}) = 17317 \text{ additional persons.}$

The remainder of the forecasted population growth would then be distributed across large parcels with and without platting actions using other assumptions about percentages of land developed, such that the total accommodated population matched the forecasted population growth. Once the entire forecasted population was distributed, an Excel formula would filter out the IDs of the TAZ polygons or Census Blocks which had reached the key threshold of 200 houses per square mile, defined by the Census Bureau as 'Low Density Fill.'

5. Overlay Scenarios

Four scenarios of the distribution of future construction were ultimately developed, each grouped by both TAZ polygon and Census Block to calculate households per square mile. Those scenarios were designed to cover boundary cases such as 'maximum sprawl' and 'maximum infill,' and more realistic distribution patterns. It was observed that all scenarios, from the ones intended to simulate the most concentrated growth to the ones intended to simulate sprawl, were producing similar outcomes of which regions of the area of interest would reach urbanization.

The following pages show the results of each scenario, including which regions met the threshold for Low Density Fill (200 Houses per Square Mile) when grouped by TAZ Polygon and Census Block. Comparing how the two different geometries influence the area defined as 'urbanized' for the exact same distribution scenario shows the extent to which the definition of area influences density calculations. That effect would be less visible if the scenarios had only been calculated on one set of polygons.

To begin drawing the draft boundary, all scenarios on both TAZ and Census geometries were overlaid as transparencies. Regions of the Borough which are most likely to urbanize under multiple different scenarios would then be highlighted by the overlap of multiple transparent layers.

2.2.7. Scenarios

Scenario 1 – ‘Maximum Infill’

Small Parcels: 100% infill at 2045, 20:1 residential:commercial parcel development residents +32400

Current Plats: 38% infill at 2045, 20:1, 1.5 acres per house (accounts for ROW, etc.) residents + 8200

Remaining: [No additional housing required]

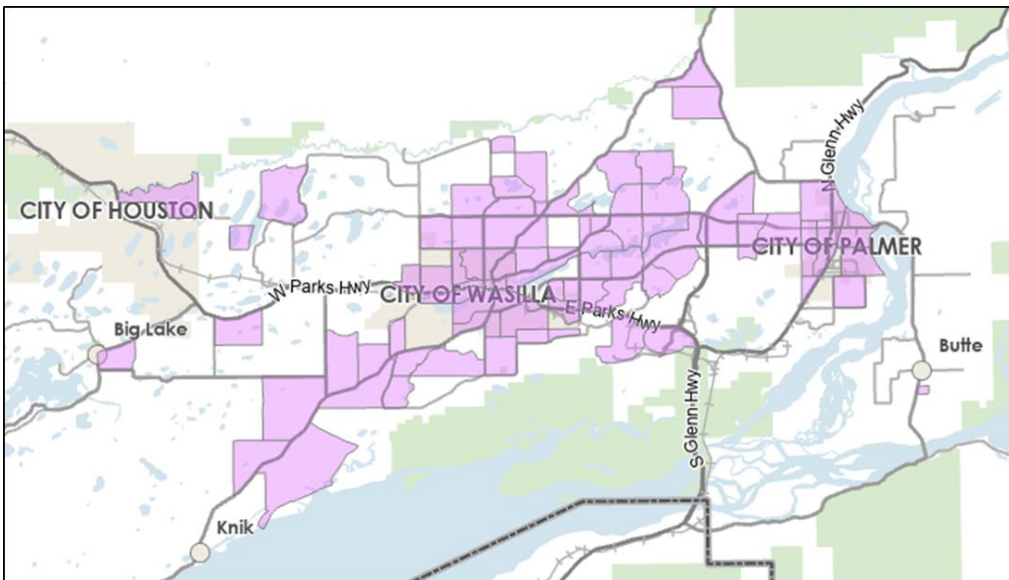
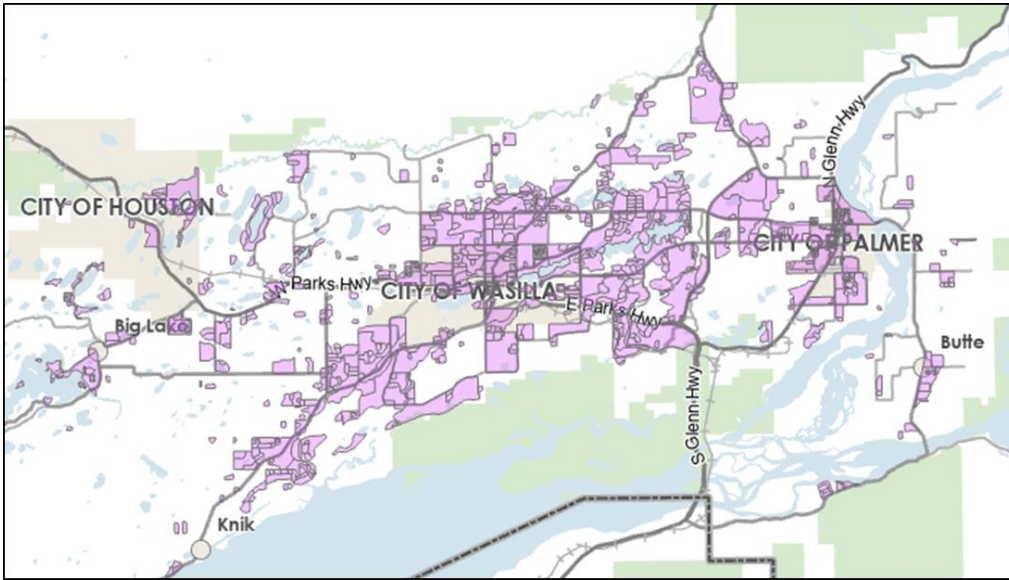


Fig. 8A and B - Urbanized polygons under Scenario 1, by Census Block (top) and AMATS TAZ polygon (bottom)

Scenario 2 – ‘Maximum Sprawl’

Small Parcels: 20% infill at 2045, 20:1 residential:commercial +6500 residents
Current Plats: 20% infill at 2045, 20:1, 1.5 acre lots +4200 residents
Remaining: Weighted by acreage +30000 residents

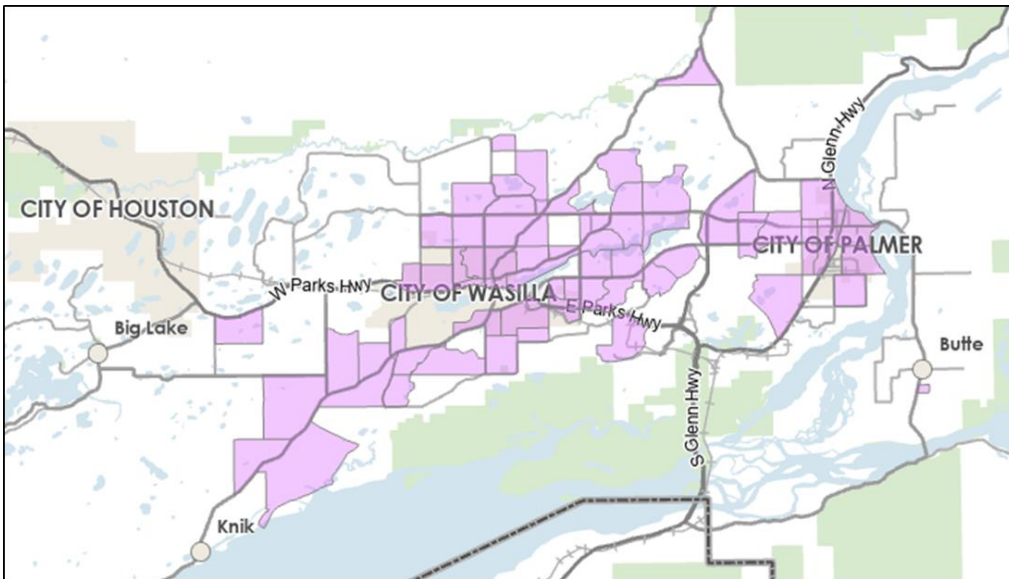
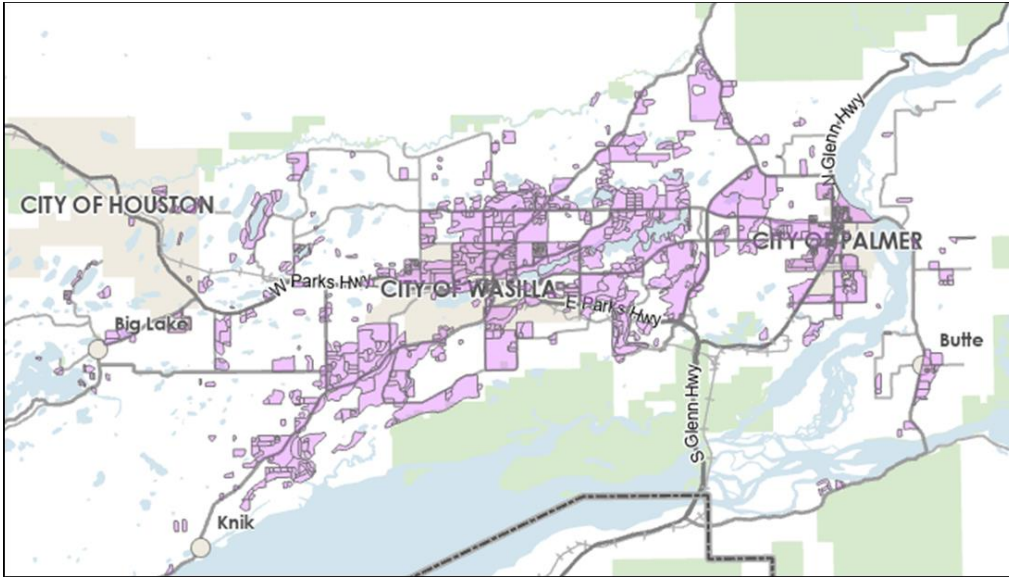


Fig. 9A and B - Urbanized polygons under Scenario 2, by Census Block (top) and AMATS TAZ polygon (bottom)

Scenario 3 – ‘Fill Popular Areas’

Small Parcels: 70% infill at 2045, 20:1 residential:commercial	+22700 residents
Current Plats: 70% infill at 2045, 20:1, 1.5 acre lots	+14600 residents
Remaining: Weighted by acreage and 2013-2020 activity	+3300 residents

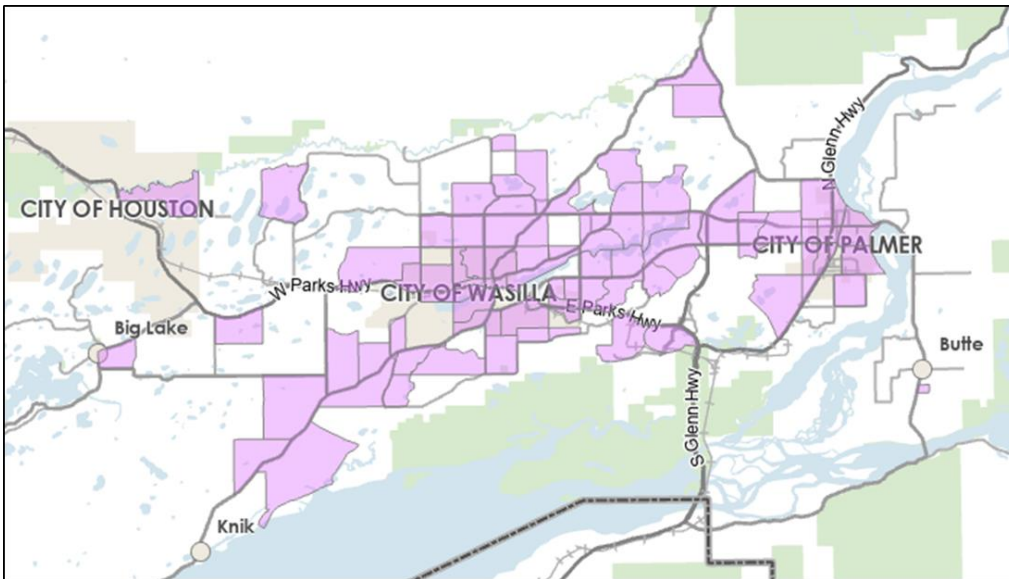
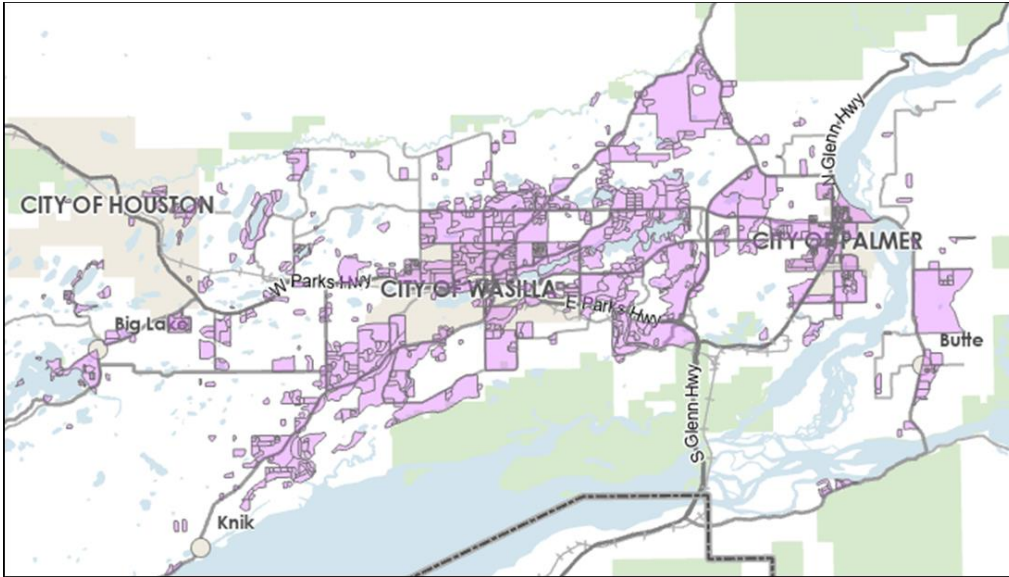


Fig. 10A and B - Urbanized polygons under Scenario 3, by Census Block (top) and AMATS TAZ polygon (bottom)

Scenario 4 – ‘Fill Popular Areas’

Small Parcels: 40% infill at 2045, 20:1 residential:commercial	+13000 residents
Current Plats: 40% infill at 2045, 20:1, 1.5 acre lots	+8400 residents
Remaining: Weighted by acreage and 2013-2020 activity	+19300 residents

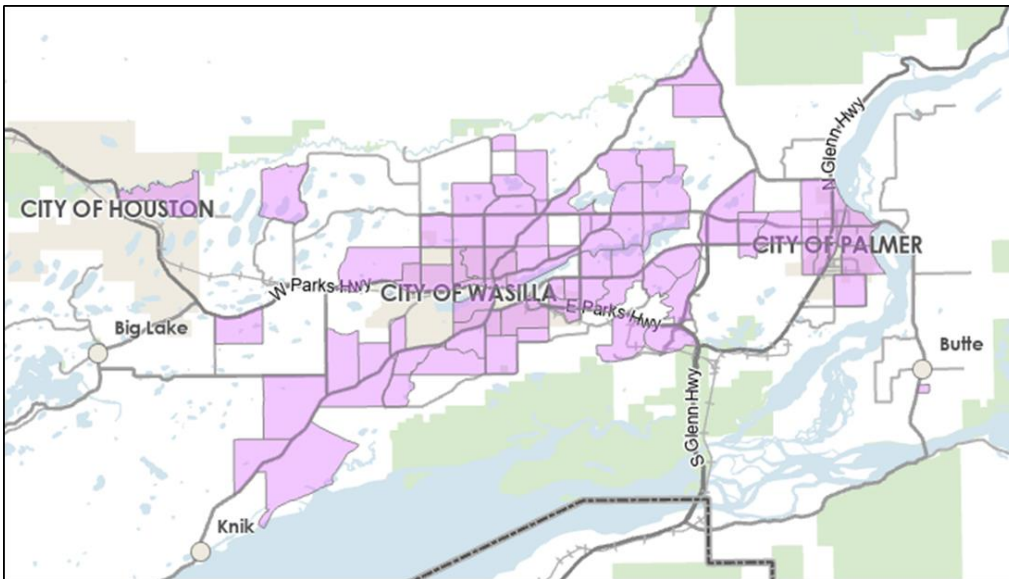
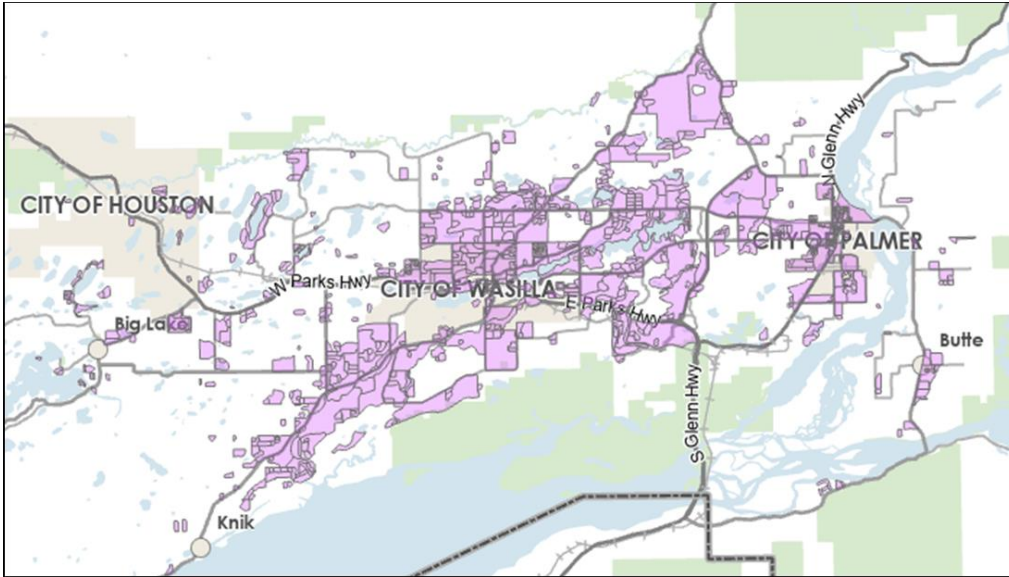


Fig. 11A and B - Urbanized polygons under Scenario 4, by Census Block (top) and AMATS TAZ polygon (bottom)

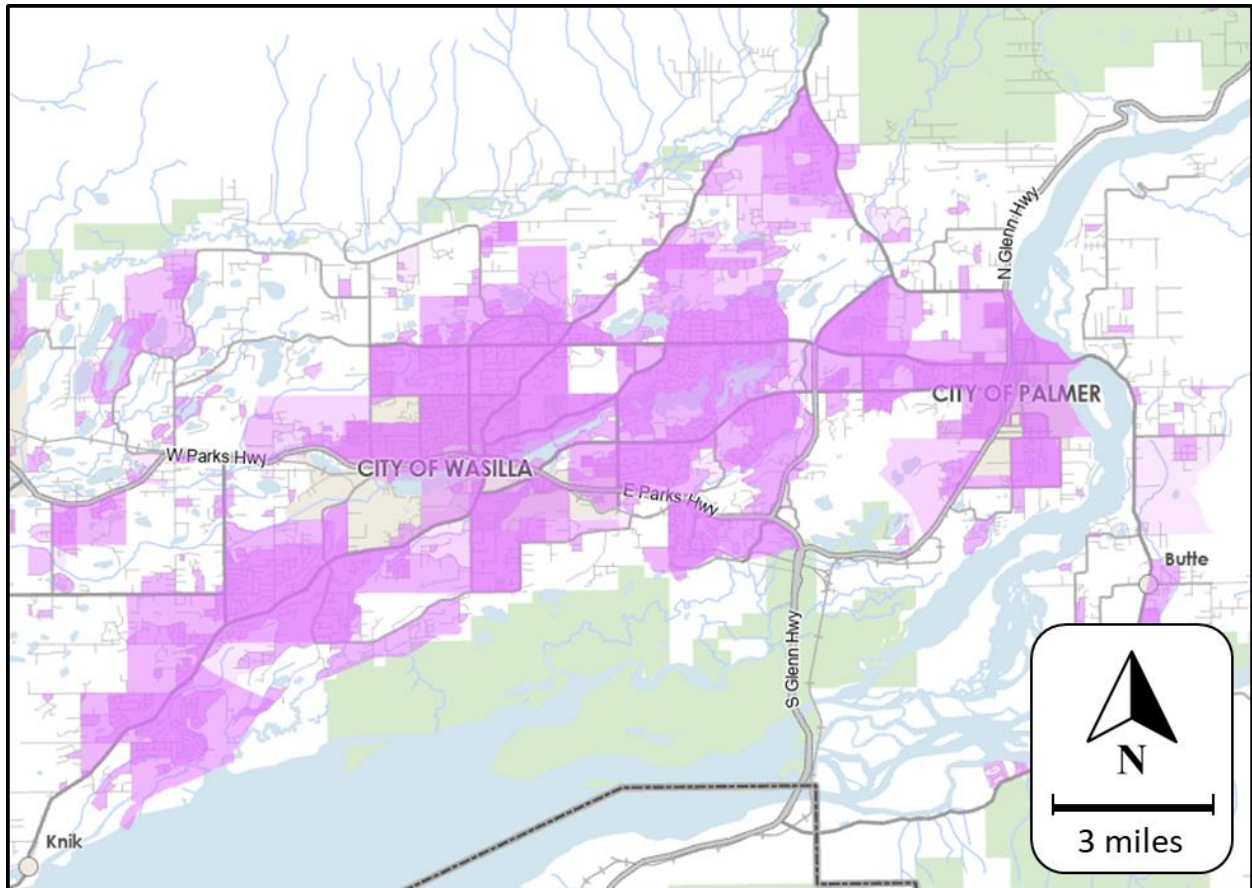


Fig. 12 - Overlaid results from all population distribution scenarios, including Census Block geometries and AMATS TAZ polygon geometries. The increasing opacity as multiple scenarios overlay is an indicator that a particular area is likely to urbanize under any development scenario.

2.3. Other Assurance

2.3.1. Impact of Wetlands

Summary: Wetlands , particularly within the core area of the Borough, were not found to be a significant barrier to development and were therefore included in available land for future residential construction. Extensive development of wetland parcels is already visible.

In the context of construction and development, the presence of wetlands is most often associated with additional regulation and permitting through the Army Corps of Engineers. This is associated with an increased cost and a perceived decrease in desirability. Throughout this MPA boundary definition process, multiple stakeholders suggested that wetlands should be excluded or somehow given a penalty to the likelihood of future residential construction.

The presence of wetlands was not included as a factor in forecasting future development during the initial drafting process for the minimum MPA boundary. That decision was based on three factors:

- An observation that there was relatively little wetland acreage in the most urbanized core area of the Borough expected to form the majority of the MPA
- An expectation that only considering land in private ownership would naturally exclude most land not capable of supporting any construction. As a very general rule of thumb with many exceptions, the fact that a parcel is privately owned tends to indicate some level of confidence that it can accommodate a building.
- Finally, the technical difficulty of differentiating between Wetland and Non-Wetland acreage was judged to be too complex for the value it might add to the forecast. Attempting to split privately owned, unbuilt parcels into Wetland and Non-Wetland polygons had the potential to create multiple complex geometries which would not reflect how property is subdivided in reality.

In order to do due diligence that not differentiating between wetland and non-wetland acreage is an acceptable generalization for this boundary development process, the set of 13092 small (≤ 5 acres), privately owned, unbuilt parcels used during the forecast process was tested. Using GIS software, those parcels were Clipped to a layer identifying [Cook Inlet Wetlands](#), which produced polygons representing all areas of those parcels which were also covered in wetlands. See **Appendix II** for more details about the wetlands layer and its subcategories.

	Wetland Acreage (Small, Private, Unbuilt Parcels)	Total Acreage (Small, Private, Unbuilt Parcels)	Percentage
Area of Interest	4208	17268	24%
Draft Minimum MPA	848	5617	15%

The Clipping exercise revealed that 15% of the available total ‘small parcel’ acreage available for construction within the draft minimum MPA boundary (as shown in **Section 2.5**) includes some amount of wetland area. Upon visual examination of the overlap regions, it was found that wetland presence had absolutely no influence on the development of neighboring parcels. Wetland acreage therefore continued to be included in the boundary development methodology.

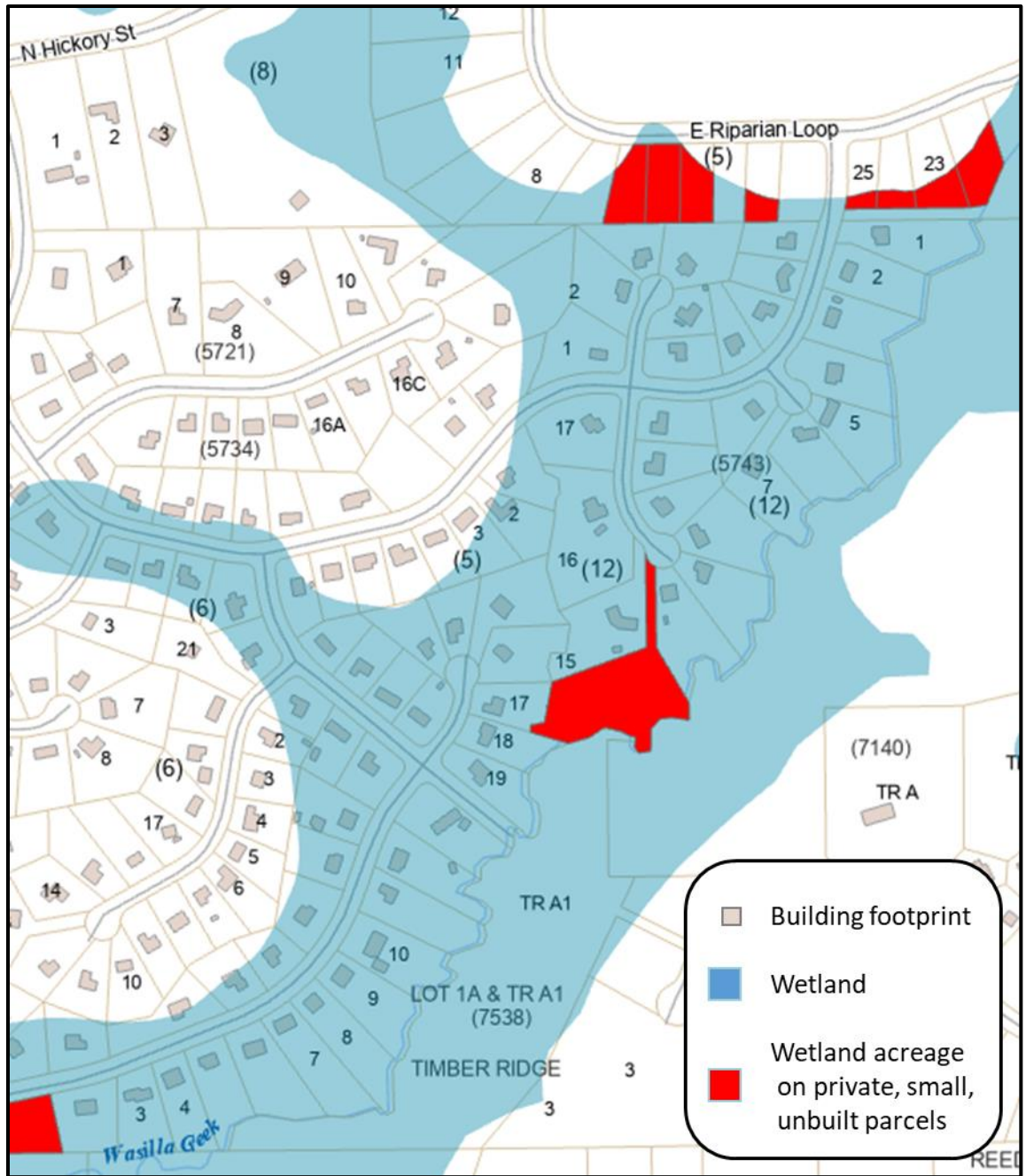


Fig. 13 - Neighborhood construction on a Discharge Slope wetland draining into Wasilla Creek. The extensive construction within the wetland boundary indicates that construction on the few remaining unbuilt parcels is unlikely to be impeded by the presence of wetlands. Note that the building footprint layer (OpenStreetMap) may not reflect recently constructed buildings; parcels which overlap wetlands and appear to be unbuilt on the OpenStreetMap layer, but which did not produce a red overlap polygon, are identified to contain buildings on the authoritative Borough Cadastral Parcels layer.

2.3.2. Impact of Agriculture Restrictions

Summary: Parcels with known legal agricultural restrictions were excluded from available land for development. Parcels with private or informal restrictions were included.

The Mat-Su Borough has a history of agricultural development, and has introduced several sets of legal covenants and restrictions in an effort to preserve farmland from subdivision and construction. Other existing agricultural tracts have protections ranging from formal private conservation easements to the informal priorities of the families which own the parcels and which can vary from generation to generation.

Ag-restricted parcels were initially not excluded from land considered available for development. That decision began as a quick time-saving measure while producing a draft boundary for discussion purposes in December 2022, prior to release of the 2020 Census Data. The decision was justified on the basis that Ag-restricted parcels without any commercial or residential buildings within the urbanizing portion of the Borough total several thousand acres in a category of several tens of thousands of acres of large, unbuilt parcels not undergoing platting actions. Similar housing density results could be expected when distributing the forecasted population growth across that category, whether or not agricultural parcels were included.

However, during the MPA boundary definition process, multiple stakeholders recognized Ag Restricted parcels on the maps produced to display the first draft minimum boundary, particularly in the Fishhook area. They offered a sensible recommendation to exclude the parcels when producing a final draft minimum boundary. In early April, 2023, all scenarios were repeated while excluding parcels identified as 'Ag-Restricted.' That information was sourced from a Mat-Su Borough Constrained Lands layer, hosted at https://maps.matsugov.us/map/rest/services/LandManagement/LandManagement_MSBM_anagedLands/MapServer/0 in 2022. As predicted, the repeated scenarios produced similar results to the initial ones.

The variety of legal and informal arrangements for protecting agricultural land is a hurdle to finding accurate data for protected parcels. After repeating the forecast scenarios while excluding Ag-restricted parcels based on the Borough's best information, a manually updated layer also tracking agricultural land was received from a contact at that Alaska Department of Natural Resources. That layer revealed several hundred additional acres of agricultural land inside the MPO boundary which were not properly excluded in the Borough's layer. During the public feedback process, multiple stakeholders with personal connections to landowners of agricultural land also offered insights into certain landowners' current aspirations for their land, and their willingness to allow it to be developed into residential or commercial property. That additional information was considered when manually adjusting the edges of the boundary, but the distribution scenarios were not updated.

Although the population distribution scenarios did not exclude all agricultural acreage, there are no instances where acreage of previously unnoticed agricultural land influenced the edge of the final draft or final proposed boundary. However, the lack of comprehensive datasets covering agricultural land restrictions is a blind spot in the Mat-Su Borough government's awareness of local land use, and more accurate information should be compiled before the next boundary update process.

2.4. Initial Draft Boundary and Urbanized Area Designation

The initial scenarios (prior to excluding any Ag-restricted land as described in **Section 2.3.2**) were overlaid in June 2022 and used to create a rough boundary, labeled the initial draft minimum MPA boundary. This boundary was primarily produced as a visual for discussion, not following a rigorous methodology including any regions which were forecasted to hit urbanization in a particular number of scenario outcomes. Certain regions of relatively higher opacity (relatively more scenarios indicate urbanization) are outside of the initial draft boundary, while other regions with less opacity (relatively fewer scenarios indicate urbanization) are included.

On December 29, 2022, the Census Bureau released the 'Wasilla/Knik-Fairview/North Lakes, Alaska' Urbanized Area. The inclusion of certain discontinuous census blocks can be seen, following the Census Bureau's rules regarding 'hop' and 'jump' distances. The inclusion of a neighborhood near Schrock Road located within a 1.5 mile 'jump' from the core of the urbanized area was a particularly good reminder to more carefully consider which neighborhoods could be linked by jumps. In general, however, the initial draft boundary encompassed the existing urbanized area as expected, and provided confidence in the process.

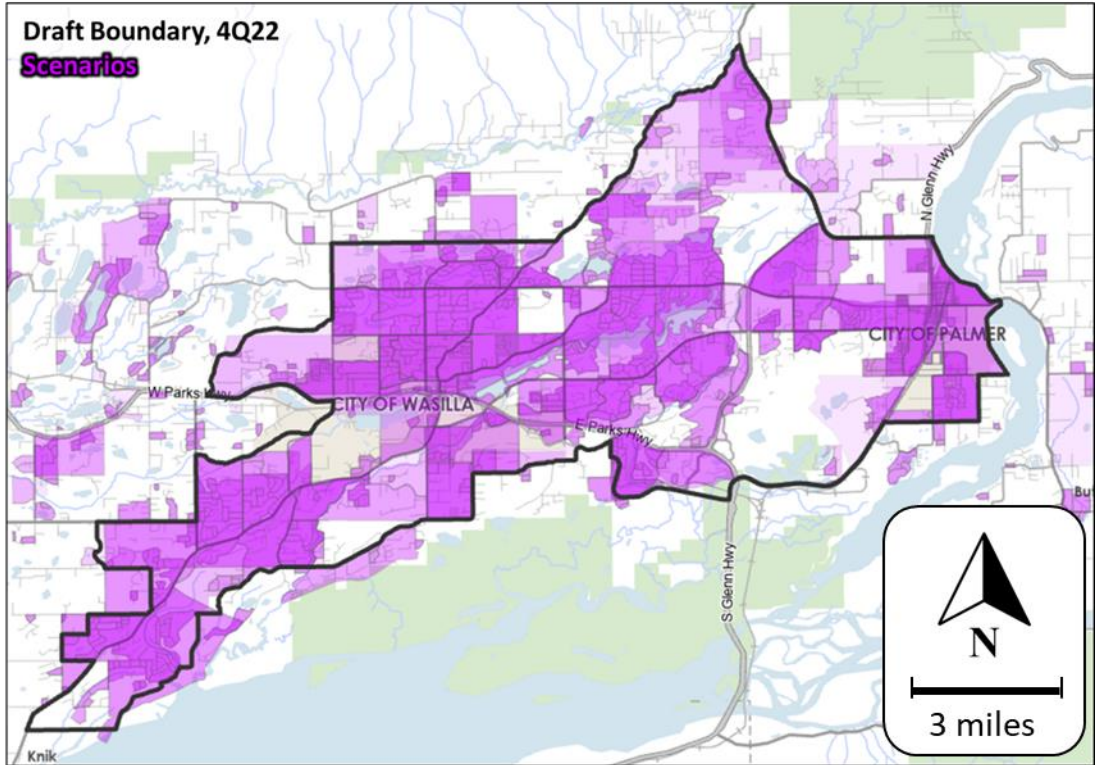


Fig. 14 – Early draft minimum MPA boundary, as a black line, overlaying scenario results. Drawn for discussion purposes before release of the Urbanized Area on December 29, 2022.

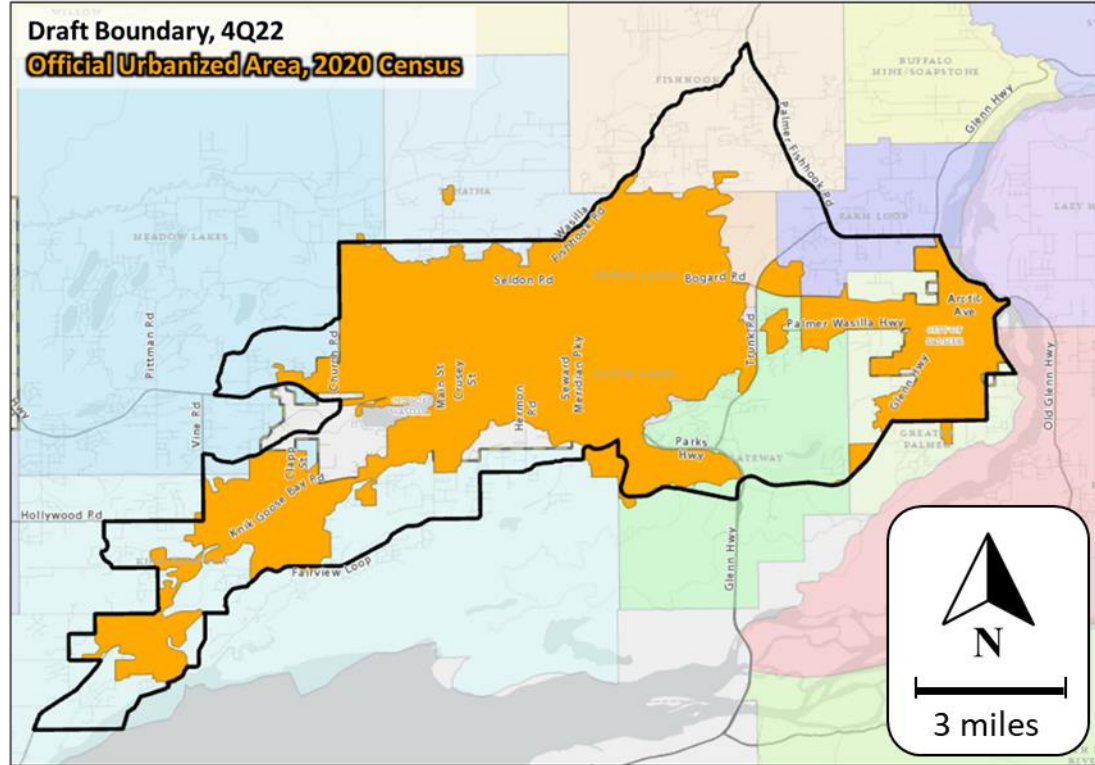


Fig. 15. – Early draft minimum MPA boundary compared to the Urbanized Area, in orange. Background colors represent a set of administrative areas known as Road Service Areas.

2.5. Final Draft Minimum Boundary

“At a minimum, the MPA boundaries shall encompass the entire existing urbanized area [...] plus the contiguous area expected to become urbanized within a 20-year forecast period for the metropolitan transportation plan.”

- 23 CFR § 450.312(a)(1)

Following the release of the 2020 Census data and the Urbanized Area definition on December 29, 2022, Borough staff conducted a neighborhood-by-neighborhood review of the initial draft boundary. The boundary was modified to more rigorously follow scenario outputs of regions likely to urbanize, and to consider the possibility of ‘hops’ or ‘jumps’ connecting outlying neighborhoods along short stretches of roads through regions of lower development. Parcel sizes in various neighborhoods were a key factor, as continuous neighborhoods of households on 3.2 acres will not be able to reach the Low-Density Fill threshold of 200 houses per square mile. Such neighborhoods will therefore never be considered urbanized unless grouped into a Census Block with denser neighborhoods or unless Census Bureau metrics change in the future.

The map below represents the final draft minimum boundary for the Mat-Su Borough MPA. The remaining sections of this document describe the considerations which led certain peripheral rural regions to be included in the final boundary in addition to the legal minimum.

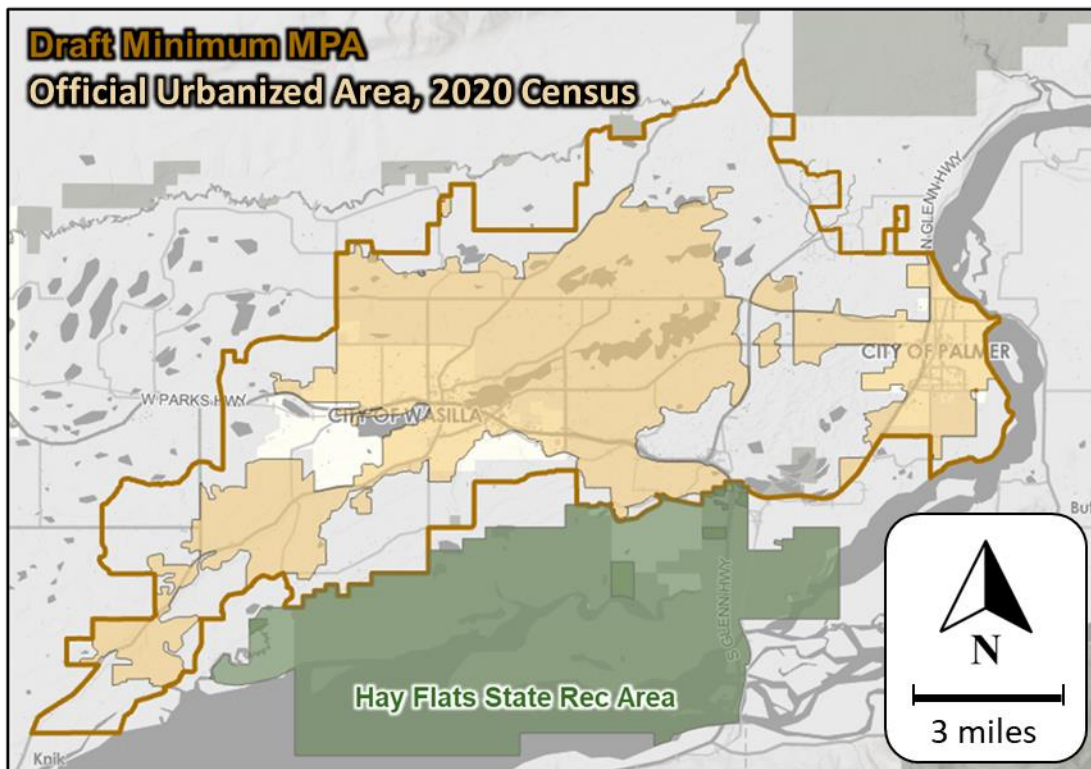


Fig. 16 – Final draft minimum MPA boundary, following release of the Urbanized Area and a review of each neighborhood along the boundary.

3. Public Feedback

Feedback on the draft minimum boundary was collected from multiple rounds of outreach targeting both the general public, and members of the public with specific subject matter knowledge. A key goal of public outreach was to record support and recommendations for specific areas outside of the minimum MPA boundary to include in the final recommended boundary.

- February 28th 2023 – Developers Meeting records
- March 28th 2023 – Public Meeting records
- March 2023 – Public Survey records

All recorded comments are captured in **Appendix I.**, and are summarized on the next pages by general region along the minimum MPA boundary.

Tbl. 2 - Summary of suggestions which appeared in internal, stakeholder, and public feedback, and the recommended outcome.




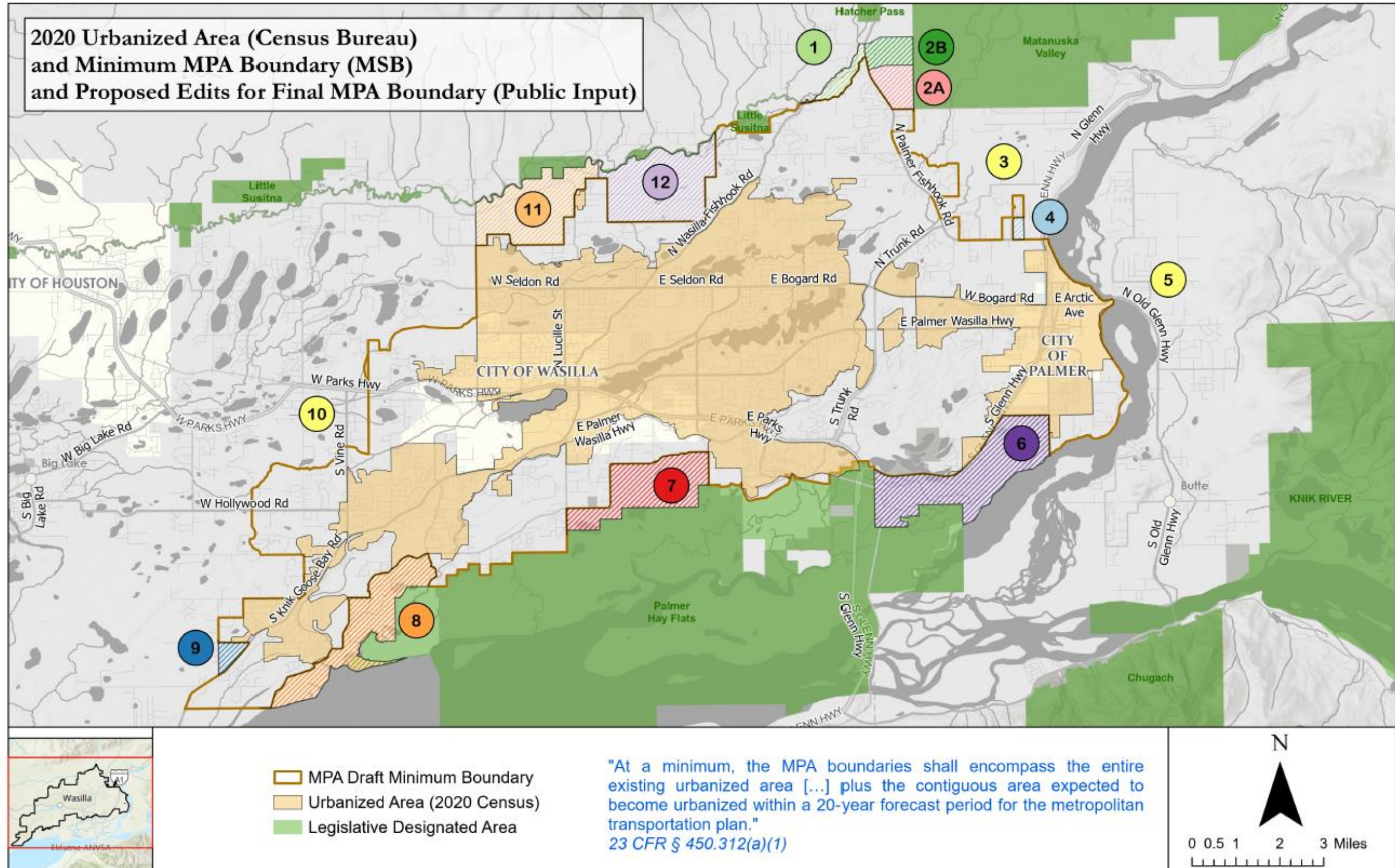
	ShortName	Description	Government 	Subject Matter Experts 	Public 	Results:
1	GPR/Edgerton Parks	Include the portion of Edgerton Parks Rd from N Palmer Wasilla Fishhook Rd to the Little Susitna River bridge, which has a proposed improvement project; produce a more visually regular MPA boundary when combined with Change 2B	Suggestion / Recommendation	No Comment	Suggestion / Recommendation	Recommended
2A	Fishhook/Moose Range Access	Add Wendt Rd and the portion of N Sun Valley Rd used to access the Moose Range trailhead, a major traffic generator	✓ Consensus Support	No Comment	Suggestion / Recommendation	
2B	Fishhook/Moose Range Access	Add the remainder of the N Sun Valley Dr neighborhood to produce a more visually regular MPA boundary	Suggestion / Recommendation	No Comment	Suggestion / Recommendation	
3	Farm Loop/Soapstone	General due diligence. Check whether census blocks in the Farm Loop and Soapstone neighborhoods could connect to the MPA through Hops and Jumps.	✗ Consensus Opposed	No Comment	Suggestion / Recommendation	Not Recommended The Soapstone neighborhood includes continuous averaging 4 acres, Farm Loop contains many parcels with Agricultural Restrictions.
4	Jana Dr	Add Jana Dr. (0.13 mi) to produce a more visually regular MPA boundary near the N Ryder Dr and N Monte Carlo Ln neighborhood	Suggestion / Recommendation	No Comment	Suggestion / Recommendation	Recommended
5	Butte/Lazy Mountain	General due diligence. Check whether census blocks in the Butte or Lazy Mountain neighborhoods could connect to the MPA through Hops and Jumps.	Neutral / Due Diligence	✗ Consensus Opposed	✗ Consensus Opposed	Not Recommended Current population density along the Old Glenn Hwy does not currently justify including census blocks east of the Matanuska River.
6	Outer Palmer	Change MPA Boundary to follow the Matanuska River. Administrative efficiency; includes gravel pits, future Mat-S Visitor Center, and Matanuska Townsite.	✓ Consensus Support	✓ Consensus Support	✓ Consensus Support	Recommended
7	Fairview Loop	Change MPA Boundary to follow the Palmer Hay Flats State Recreation Area Administrative efficiency; adds all of Fairview RSA roads to the MPA	✓ Consensus Support	✓ Consensus Support	✓ Consensus Support	Recommended
8	Settlers Bay	Change MPA Boundary to follow the Palmer Hay Flats State Recreation Area and Knik Arm Administrative efficiency	✓ Consensus Support	✓ Consensus Support	✓ Consensus Support	Recommended
9	S Alix Dr	Adds S Alix Dr used to access Redington High School and Dena'ina Elementary, major traffic generators	✓ Consensus Support	No Comment	Suggestion / Recommendation	Recommended
10	Meadow Lakes	Various proposals and requests for general due diligence to check whether the MPA boundary should extend further west along the Parks Hwy to include Meadow Lakes neighborhoods.	✗ Consensus Opposed	Suggestion / Recommendation	Suggestion / Recommendation	Not Recommended A small bulge in the Draft Minimum Boundary was removed to produce a more visually regular MPA boundary, exclude all of Meadow Lake Sports Complex, and align with current property lines.
11	Schrock Rd	Extend MPA Boundary northwest to include Schrock Rd	✗ Consensus Opposed	Suggestion / Recommendation	Suggestion / Recommendation	Not Recommended This area is not likely to urbanize and does not contain major traffic generators.
12	E Carney Rd/ESage Rd	Extend the MPA Boundary north to the Little Susitna River between Schrock Rd and N Wasilla Fishhook Rd	Neutral / Due Diligence	Suggestion / Recommendation	Suggestion / Recommendation	Not Recommended This area is not likely to urbanize and does not contain major traffic generators.

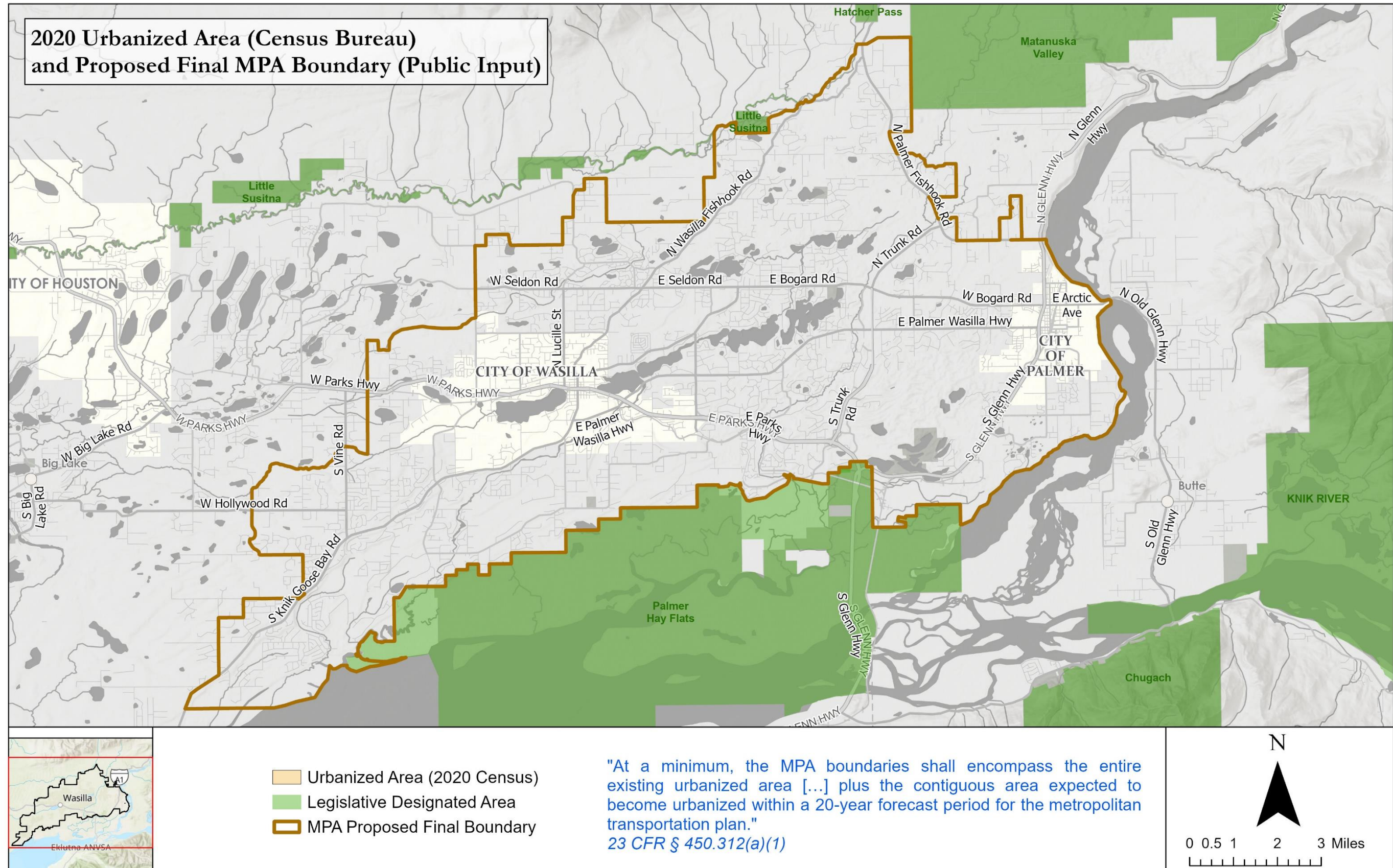
Fig. 17 – Proposed edits for the final MPA boundary, collected from internal review and public outreach.



Sources: Esri, USGS, Matanuska-Susitna Borough GIS, State of Alaska, Esri, HERE, Garmin, SafeGraph, EA0, METI/NASA, USGS, EPA, NPS

4. Final Boundary Definition

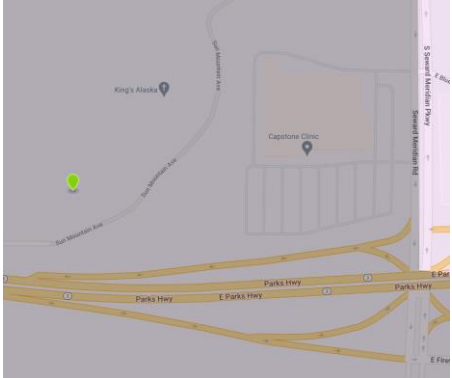
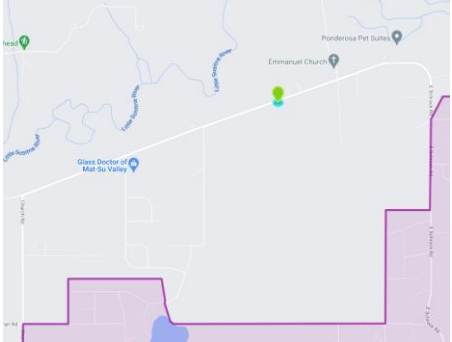
Fig. 18 - Final recommended MPA boundary.

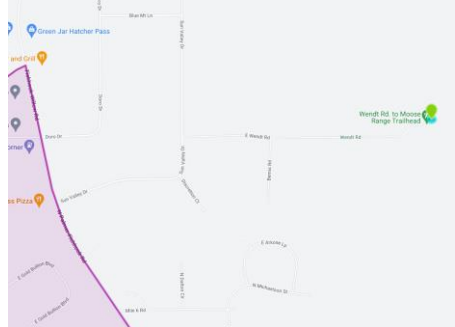




Sources: Esri, USGS, Matanuska-Susitna Borough GIS, State of Alaska, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

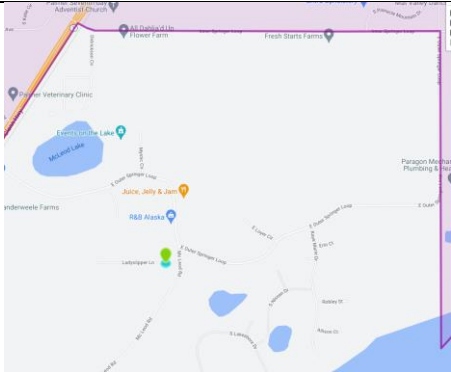
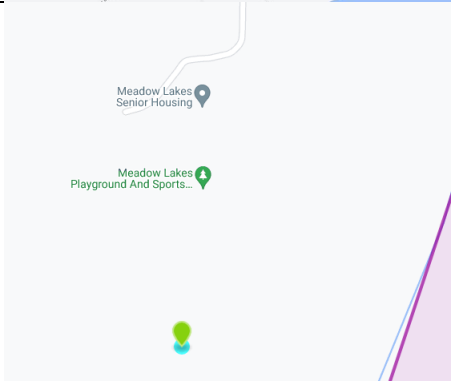
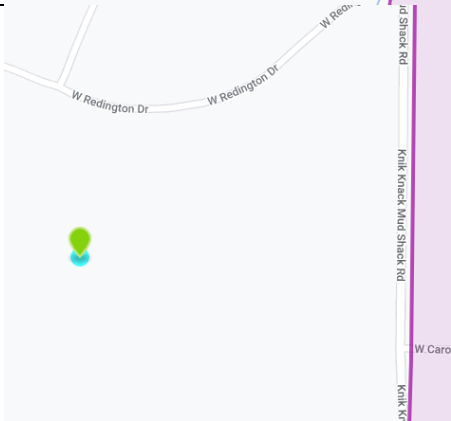
5. Appendix I – Public Comments and Responses

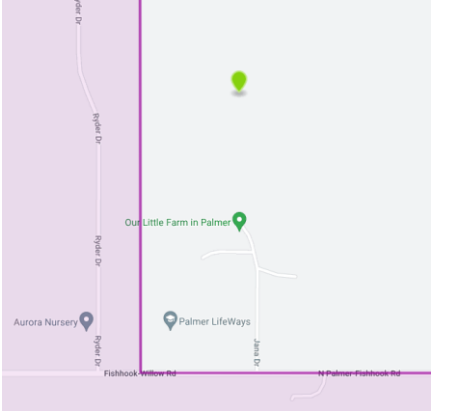
Tbl. 3 - All comments received during the public feedback process.

Comment	Comment	Location	Response
<p>1</p>	<p>TRANSPORTATION HUB- the old Sears/Walmart location- Use this location as a bus station/rail system/transportation hub for users of connectivity to all of the Matsu. Its location creates a flow of transportation on and off main roads and Parks Highway. Then, create future plans and upgrades to the nearby intersection. We need to improve and support public transportation</p>		<p>Great suggestion and we will include a discussion of this in the Metropolitan Transportation Plan.</p>
<p>2</p>	<p>Might want to include all of Shrock Road since most of it is in already.</p>		<p>May be useful for planning access. This is a state-owned road. Check on the ag land status (Gerrit).</p>

<p>3</p>	<p>I think the boundary should be expanded to include Wendt Road parking area for the Moose Range.</p>		<p>Wendt Road is narrow and there are existing biking and walking pressures already. The RSA does not currently have any plans to upgrade this road for bike and pedestrian access. Makes sense to extend the boundary to include this area</p>
<p>4</p>	<p>Map editing error.</p>		<p>This error has been corrected.</p>
<p>5</p>	<p>Why is this a discontinuous island for urbanization in a residential neighborhood?</p>		<p>The U.S. Census identified a jump that they identified as urban. This must be included in the boundary of the MPO.</p>

<p>6</p>	<p>Add this area? Otherwise, it's an island that's not included in an area where everything else is.</p>		<p>This area north of the hay flats will be included if the hay flats are used as the southern boundary of the MPA. This would also make it so a lot of the RSAs will have their roads included in the boundary.</p>
<p>7</p>	<p>Why not just a straight line here?</p>		<p>Including this area is not necessary as it is primarily agricultural land and they connect to areas that are not going to be included in the MPA.</p>
<p>8</p>	<p>These two pieces seem isolated. Either exclude them or include more of the area around them.</p>		<p>These areas are identified as urban in the census but the other land surrounding it is mostly agricultural and will not likely be developed. Alternatives will be developed and analyzed.</p>

<p>9</p>	<p>Consider using the Matanuska River as the southern boundary, and therefore include this area.</p>		<p>It is logical to use the Matanuska River as the southern boundary. This adjustment will be made.</p>
<p>10</p>	<p>Consider including the Meadow Lakes Sports Fields and public trail system.</p>		<p>The roads that connect to that area are not included in the minimum boundary. Nearby lands are industrial as opposed to residential.</p> <p>Projected development does not show that this area will meet urbanized status within the next decade. This area can be reconsidered for inclusion in 10 years at the next Census and MPA boundary update.</p>
<p>11</p>	<p>Right next to these schools, should include them since they generate most of the traffic in this neighborhood.</p>		<p>Schools are major traffic generators in this area. Knik Knack Mud Shack Road and Alex Drive will be included to improve access to the school facilities.</p>

<p>12</p>	<p>Reroute traffic flow- Parks Highway is becoming too congested. Wasilla is only continuing to grow, let's treat it the way it is, as a "City", create a couple of new passage roads/main roads for commuters to travel around Wasilla and use the highway as a means to get you to the "city center". I'd say for Knik Road commuters start somewhere near the flats, maybe the Nelson Road area and connect it into Knik Road. And then, a new route to just "get through" Wasilla, definitely something like a pass-through road, you'd need to research the traffic patterns to get a good idea of this.</p>		<p>Great feedback for the MTP. There is a Parks Highway Alternative PEL study right now where these discussions are occurring.</p>
<p>13</p>	<p>Any farmland that is not in a permanent farmland protection status should be considered for inclusion in the Metropolitan Planning Organization, especially those close to Palmer.</p>		<p>The Musk Ox farm will never be developed. The Spring Creek Farm also has a conservation easement. The conservation easements are not all documented at this time. There are several farms that have a protected status within the Mat-Su. Each area will be considered on an individual basis for potential inclusion in the MPA.</p>

Comment Number	Comment	Response
14	Rapid growth & increased traffic is happening in the Fishhook community. The core area around Turner’s Store needs to be included as an urban area, especially with the number of detached 4-plexes in the area as well as increased traffic for recreation. The Fishhook Comprehensive Plan should be considered regarding the community’s future since one of the key land use goals in the Comprehensive Plan is to maintain the rural lifestyle of the area.	This area is already included. The area to the north may be developing and we will look at including that area when we reevaluate the boundary in ten years.
15	I’m interested in ideas about shared infrastructure in the Government Peak Recreation Area/Hatcher Pass Village area.	This boundary formation exercise will not be discussing potential shared infrastructure ideas.
16	Does the creation of the Metropolitan Planning Organization bring an increase in extra funds?	The State receives a PL (Metropolitan Planning Fund) fund that is divided among all the MPOs in the state. A new MPO does not garner additional federal PL funds. Through consultation with the MPOs, the state will determine Mat-Su Valley Planning for Transportation’s (MVP) share. The PL funds for Federal Fiscal Year 2024 is estimated at \$430,000.
17	What is the definition of urbanized?	Continuous neighborhoods where a Census block has 200 houses per square mile are considered urbanized. In the case of the Mat-Su, areas with about 3.2 acres per household qualify as urbanized. This is less dense than many would picture as ‘urban.’
18	Do you want to talk about choosing the population forecast?	The Steering Committee, on April 12 th , 2022, recommended the use of the 2019 DOL (Department of Labor) Forecast for future growth, and this was approved by the Pre-MPO Policy Board on April 20 th , 2022. Please see the background Mat-Su Borough Forecast Memo dated February 25, 2022 .

Comment Number	Comment	Response
19	Did we back out properties with agriculture restrictions and development rights in trusts from the model?	The model did not include larger parcels that are not undergoing platting action. Most of the forecast didn't include those lands.
20	Did we calculate for the extension of water and sewer service?	The forecast assumes 'business as usual' type of development for the Mat-Su. Water and sewer would likely have the effect of concentrating population more strongly into areas where these services are available. Water and sewer would likely have the effect of concentrating population more strongly into areas where these services are available.
21	Does having the boundary delineated help with federal funding for water and sewer services?	Relocation of existing utilities can be funded with a Highway project if the project construction interferes with their existing location. Upgrades or new utilities are the responsibility of the utility provider if they desire that work to be incorporated into a Highway project.
22	Federal funds are limited, and we have to compete Statewide.	Recommend not selecting the entire borough as the Metropolitan Planning Area (MPA) because MVP only expects to receive about \$10 million annually. Areas outside the MPA can compete for transportation funds in the statewide program.
23	Do mega projects come out of the pot of money? 40 million, Glenn Highway, Moose Creek Bridge?	Projects on the National Highway System are funded in the State Transportation Improvement Program (STIP) through another funding source, the National Highway Performance Program (NHPP), which is allocated by the state.
24	Does this boundary match Municipal Separate Storm Sewer System (MS4) match the Metropolitan Planning Organization?	No, not unless the decision to do so is made. The boundary for the Metropolitan Planning Area (MPA) must include the area that is expected to be urbanized in the next twenty years while that is not a

Comment Number	Comment	Response
		requirement for the Municipal Separate Storm Sewer Systems (Ms4) boundary.
25	Do the funds have the same requirements and restrictions once we are a Metropolitan Planning Organization? If DOT builds it what is the difference?	Federal highway projects must be developed using the requirements under Title 23. DOT&PF will design and construct the projects under those design and construction standards. This will occur whether the project is an MPO-led project or a DOT-led project.
26	Federal roads have 8' shoulders where Mat-Su Borough has 2' shoulders. Will this drive up the cost?	DOT does not have 8' shoulders for all roads. The typical section is determined by many factors including the functional class of the roadway. However, any projects funded with federal dollars must follow Title 23 for project development and tends to increase the cost of the project.
27	How many Metropolitan Planning Organizations are not profit organizations?	In 1962, most Metropolitan Planning Organizations were run by the State. In 2016, there are approximately 31% independent MPOs and 69% hosted but very few by the State.
28	There is non-federal share (match) requirement for planning and capital projects? Can state funds be used?	Yes, state funds are eligible to be used as the non-federal share, or match. Typically, local funds are used as match and provided by the owner of the facility. Typically, the non-federal share portion is 9.03% on most plans and projects. The amount of match and who must pay is determined by the DOT&PF Policy and Procedure: Local Match for CIP . Who pays the match is determined by several factors including the functional class of the road, and ownership and maintenance of the road after construction.

Comment Number	Comment	Response
29	Are there any projects that are not eligible under the federal program? Smaller Projects? Paving? Rehabilitation? Paving? Drainage? We spend a lot of money on maintenance and dirt roads cost more to maintain than paved.	Creating a Preventive Maintenance Program is a cost-effective way to address rehabilitation and smaller improvement projects. You can package 4-6 simpler projects into one project to achieve economies of scale. This has been one of the most valuable programs to the member communities of the Fairbanks MPO.
30	How often do we update the boundary map?	A re-evaluation of the MPA is required after every Census, which is conducted every ten years. Boundary modifications may be made more frequently but require a modification to the Operating Agreement.
31	If it's the same \$10 million, why aren't we doing these projects already?	Currently, the only way to receive CTP (Community Transportation Program) project funds is through the competitive process run by the State for inclusion in the STIP (Statewide Transportation Improvement Program). The current area CTP projects in the STIP include Wasilla Fishhook Road/Main Street, Knik Goose Bay Road, Vine to Settlers Bay, Vine Road Improvements, Hemmer Road Upgrade and Extension, Hermon Road Extension and Upgrade, Seldon Road Ext Phase II, Seward Meridian Road, PH II, Trunk Road Extension South,
32	How was it decided who would have a seat at the table? Is the goal to have a demographic representation, Do you think 2 seats is enough?	The MPO Steering Committee recommended on September 13 th , 2022 to the Pre-MPO Policy Board for a 7-seat board with government-only representation. After several discussions at the Pre-MPO Policy Board, they decided on the current board membership on February 21 st , 2023.
33	Representation isn't in line with the percentage of roads.	The minimum representation on the Policy Board is the Mat-Su Borough, the City of Wasilla and the State

Comment Number	Comment	Response
		of Alaska Department of Transportation and Public Facilities. Representation on the Policy Board is not dictated by the state or federal government and is at the discretion of the MPO.
34	Who is making the decisions on behalf of the MPO?	The Pre-MPO Policy Board is making the recommendations to include in the Operating Agreement that will be signed by all Policy Board members with final authority by the Governor. Once the Operating Agreement is approved, the Policy Board, as outlined in that agreement, is the decision-making authority.
35	Do the Tribes have funds? Do the tribes have as much interest in funding roads if they don't have roads in the area?	The tribes receive Indian Reservation Road funds that can be used as match for Federal Highway Funds.
36	There is a concern that the Policy Board will be a non profit, and seats on the board are not elected officials as some of the participant are non-profits.	In the effort to have a comprehensive planning environment while developing the MPO, the local agencies decided to have a larger, more inclusive board of stakeholders making the MPO formation decisions. Federal law does not dictate who sits on the Policy Board of a small Metropolitan Planning Organization. Thus, it is not limited to elected or governmental officials. Who ultimately sits on the Policy Board is up to the local stakeholders which currently include some non-governmental agencies. However, that group has decided that only governmental agencies will sit on

Comment Number	Comment	Response
		the final, official Metropolitan Planning Organization Policy Board.
37	Is most of the work done by the steering committee, i.e. making recommendations, formal?	The Steering Committee meets monthly at a set scheduled time and follows Roberts Rules of Order in making recommendations to the Pre-MPO Policy Board. The Pre-MPO Policy Board may agree with the recommendations or modify them as they seem fit, using Roberts Rules of Order as their process. The Steering Committee meets monthly at a set scheduled time and follows Roberts Rules of Order in making recommendations to the Pre-MPO Policy Board. The Pre-MPO Policy Board may agree with the recommendations or modify them as they seem fit, using Roberts Rules of Order as their process.
38	It looks like steering will roll into technical committee and policy board.	There are two distinct groups: The Steering Committee and Pre-Policy board. The Steering committee will roll into the Technical Committee (governments and transportation-related organizations) and the Pre-Policy Board (officials and non-profits) seats will change to Policy Board once formal. The final membership list of positions on the Technical Committee and Policy Board will be included in the Operating Agreement and Bylaws for approval by the Governor.
39	Were projected, Master planned communities and subdivisions considered. South of Fairview, Glacier View etc.	Yes
40	Extend Boundary South to Hay flats, Parks Hwy Alternative Corridor might come through this area. (South of Fairview Loop)	This is a logical boundary.

Comment Number	Comment	Response
41	Include Sky Ranch and Outer Springer area. Would make sense for the boundary to go to edge of development to the south and not exclude small areas. (South of Inner Spring)	The boundary will likely be expanded to the Mat-Su River to the south.
42	Extend west boundary crossing Parks Hwy west of Sylvan. (Western Boundary)	The boundary will be reevaluated in ten years when we consider extending the boundary to Sylvan. With limited funding, project priorities will more likely be in the core area of the MPA as opposed to in Meadow Lakes. The western boundary should abut the Meadow Lakes Sports Complex.
43	Should consider the density of the Meadow Lakes area and eventual potential for meeting the criteria. Consider development in the Meadow Lakes area. Builders could mine peat and make buildable lots. (Northwest)	Yes, we will consider that density as it grows in the next ten years and be reevaluate.
44	Consider the OSHP, traffic volumes and road classification/function when drawing the boundary.	The OSHP overlay was used in the analysis.
45	Consider Mental Health Trust Land as a constraint where development is not imminent. (Western Boundary)	We have considered the land ownership factor when drawing the initial boundary and did not consider Mental Health Trust land as developing in the next twenty years. Only private land is being considered developable in the near term.
46	Consider using the Little Susitna as a Northern Boundary for administrative convenience. (North Boundary)	We have discussed using the Little Susitna as the northern boundary on the section line north but that picks up quite a few large parcels that are not meeting the urbanized criteria.
47	Boom in development East of the Fishhook Triangle and limited by the lack of connectivity to the Soapstone area. (NE Boundary)	There are a lot of new subdivisions in this area that have not been built as well as major collector roads that have not yet been constructed. All of the Soapstone neighborhood is still in a rural standard and is not projected to become urbanized before the next Census/boundary update.
48	Consider recreational draws such as GPRA and Moose Range and the need for access. (Northern Boundary)	Access to recreational areas such as GPRA and the Moose Range is being considered in the boundary

Comment Number	Comment	Response
		development process since these are major traffic generators in the Mat-Su. Alternatives are being explored.
49	Does this tie into social issues? i.e., school busing, maintenance, housing etc.	This is strictly transportation and transit planning.
50	Anchorage and Fairbanks are MPO's do they get the same amount of money?	Anchorage (AMATS) is a large MPO whereas Fairbanks (FAST) is a small MPO similar sized to MSB. The funds are based on a formula with consultation of the MPOs.
51	If FAST gets \$600K what about the \$10 million?	The \$600 is for the planning and the \$ 10 million comes in the form of surface transportation block grants etc. The \$ 10 million is for capital projects (construction).
52	How far back does the MPO program go?	The first MPOs were started in 1962. The purpose was to let local communities have input on transportation planning and use of federal transportation funds in their communities.
53	Have we considered looking at agriculture lands?	Restricted versus unrestricted agricultural lands are being considered in the boundary development process. Large restricted agricultural parcels are not anticipated to impact the population distribution significantly.
54	Does this address the impacts of urban designation for USDA funding?	We have no control over the urban designation from the U.S. Census Bureau. MPOs must consider a 20-year projection in establishing its boundary. Each federal program uses the urban census designation according to its own regulations.
55	Is funding tied to the urban area?	Federal funding is based on a formula in the Infrastructure Investment and Jobs Act (IIJA) and is broken down by population size categories. The MPO

Comment Number	Comment	Response
		will only be able to expend funds within the metropolitan planning area (MPA) boundary. Additionally, there are many more discretionary and competitive funding programs available now through the IJA than before.
56	Is there a reason not to make the MPA too large.	The areas outside the MPO still have access to CTP funds that are available in other rural areas of the state. It is important to make sure that available MPO funds are well matched to the MPA area to best address urban transportation issues and associated performance measures.
57	Would we expand the MPA to capture RSAs or adjust RSAs to match?	It might make sense to adjust the RSA boundaries due to funding. It may also make sense to include an entire RSA for continuity purposes. One needs to consider road powers and the current method of bonding projects and how well the RSA services the transportation needs of the area. Boundaries may and will change, both RSA and MPO boundaries.
58	(The Model) appears to be 1-acre single family lots. Is this reactionary or directing where growth happens?	The model assumes business as usual and backed out commercial ratios at 1/20 of all projected development.
59	Have you looked at high-density housing?	If high-density development happens within the urban area, it would reduce the outward growth of the area. It is a challenge to guide land use in the MSB. Without sewer and water services, density is limited. Residents can't find affordable housing where the jobs and services are.
60	The boundary that is decided would hold until the next census?	Generally, yes, however, it may be adjusted if there is a major change in development patterns.

Comment Number	Comment	Response
61	Could we have 2 MPOs due to distinction between Palmer and Wasilla and get 2 x the funds.	The Mat-Su does not have the population to create two MPOs. The purpose of an MPO is to coordinate federal transportation funds to match local priorities across an urbanized area. Urbanized areas often extend across jurisdictional boundaries, so the MPO helps different levels of government and adjacent governments coordinate since transportation infrastructure (roads, trails, bike paths, transit lines) also cross those jurisdictional boundaries.
62	Do we anticipate this boundary moving west with development in the Meadow Lakes area?	Due to several large undeveloped parcels, this area is not very likely to be considered urbanized within the next 10 years. This extension could be considered at the next Census/boundary update.
63	Consider leaving recreational areas and trailheads out due to public support and alternate funding sources.	This is a major consideration in the boundary development process.
64	Include areas south of the Glenn Hwy. (Sky Ranch etc.) due to potential for water sewer service. (Southeast)	It would be logical to include this area and simplify the inclusion of nearby RSA roads as well. The boundary will be extended to include Sky Ranch and adjacent areas with potential for water and sewer service, using the river as the boundary.
65	Keep the MPA area concentrated to focus funds where there is the most need.	This is a major consideration in the boundary development process.
66	There is a lot of development South of Schrock. Consider making Schrock north boundary. (North)	It is not estimated that this area will meet the urban criteria in the next twenty years.
67	Large farm parcels around Carney Road area are in 3rd generation and are likely to be subdivided. (North Central)	This was considered in the boundary development process and is not expected to develop enough to be considered urbanized before the next Census in ten years. This area can be reevaluated for inclusion at the next Census/boundary update.

Comment Number	Comment	Response
68	Large parcels south of Fairview Loop (Davis Rd. area) are being developed. (South Central)	The southern boundary will be extended to run along the Palmer Hay Flats boundary. This aligns the MPA with RSA boundaries and makes sense administratively.
69	There are large areas of multifamily north of the Fishhook triangle and we should look at these. (North)	This area is not expected to become urbanized before the next Census (in ten years) and is quite far from the existing urbanized boundary. It can be reevaluated for inclusion in the future.
70	Would Edgerton area connect to area if growth creates hop and jump? (North)	Our analysis indicates that the Edgerton area would not connect under the current definition of hops and jumps. This area can be reevaluated for inclusion in the future if sufficient growth occurs.
71	Have we looked at new driveway permits to gauge growth that wasn't captured in the 2020 census? (MPA)	Driveway permits have not yet been looked at for the boundary development process. Assessments and new building construction data has been considered, which likely captures the same growth-related data/patterns.
72	Consider traffic volumes as related to density and need for upgrade. (MPA)	Traffic volumes will be considered, to the extent they are available, when analyzing needs and deficiencies in the network.

6. Appendix II – Definition of Wetlands

'Wetlands' as defined by the Mat-Su Borough for consideration in **Section 2.3.1, Impact of Wetlands**, follow the classification scheme used by the Army Corps of Engineers and described in [Wetlands of Cook Inlet Basin, Alaska: Classification and Contributions to Stream Flow](#) (Gracz, 2017). All classifications except for 'DISTURB' and 'LAKE' produce a Wetland Constraint if they are present on a parcel.

Included in Wetland Constraint:

- **Depression** – “peatlands in closed basins underlain by till or other slowly-permeable unconsolidated deposits” (p.46)
- **Discharge Slope** – “freshwater wetlands fed by groundwater discharging through mineral substrates at pronounced slope breaks” (p.42)
- **Drainageway** – “peatlands formed in the meltwater channels that drained formerly extensive glaciers” (p.57)
- **Floating Island** – “unmoored peat mats floating on the surface of lakes; only 7 polygons have been mapped as Floating Islands” (Gracz, p.49)
- **Headwater Fen** – “small peatlands above or near treeline formed in open basins at the headwaters of first-order streams” (Gracz, p.50)
- **Kettle** – “peatlands formed in open-basin depressions associated with glacial moraines” (Gracz, p.51)
- **Lakebed** – “peatlands formed on extensive glacial lakebed deposits.” (Gracz, p.54)
- **Riverine** – “rivers and streams and their adjacent valley bottoms” (p.38)
- **Spring Fen** – “peatlands in closed-basin depressions [...] fed by groundwater originating from a nearby source where precipitation exceeds evapotranspiration, such as in the surrounding mountains. This uncommon setting exists between Anchorage and Wasilla in the rain shadow of the Chugach Mountains.” (Gracz, p.59)
- **Tidal** – “Wetlands influenced by marine tides” (p.33)
- **Tidal / Drainageway** – Tidal influence dominates. (p.38)
- **Drainageway / Tidal** – Freshwater influence dominates. (p.38)
- **VLD Trough** – “peatlands located in the valleys between the series of approximately 25 very large dune (VLD) features in the Meadow Lakes area” (Gracz, p.61)
- **Wetland / Upland Complex** – “wetlands cover more than 30% of the area, but are intermingled with uplands at a resolution too fine to delineate separately at the nominal mapping scale” (Gracz, p.63)

Excluded from Wetland Constraint:

- **DISTURB** – “the wetland class is unrecognizable [for example where] fill obscures the original vegetation, soils, and hydrology of the wetland.” (Gracz, p.63)
- **LAKE** – non-wetland surface water