2180 2nd Ave
Whitehorse, YT
867.332.1864
3pikas.com

MEMO

DOWNTOWN DEVELOPMENT CAPACITY ASSESSMENT

PROJECT:	Downtown Development Capacity Assessment
RE:	Results of Inventory and Assessment (Final)
FROM:	Matthias Purdon, 3Pikas
DATE:	July 22, 2021

1 BACKGROUND

The City of Whitehorse retained 3Pikas to develop an inventory of under-utilized sites in the downtown area and create an estimate of the full build-out capacity of these sites. This project is intended to help inform the City of Whitehorse 2040 Official Community Plan update.

The downtown development capacity assessment project provides a more comprehensive accounting of development capacity downtown for residential purposes, with an emphasis on multi-unit residential capacity. This project was completed with input from the City of Whitehorse Planning staff and included a review meeting during the data collection and inventory stage (June 7, 2021), as well as an interim review of mapping outputs.

2 APPROACH

2.1 DATA COLLECTION

The project was initiated, and GIS data layers and the latest LiDAR data and imagery were compiled. In addition, base maps were prepared for the study area that included relevant publicly available information as well as information provided by the City of Whitehorse, including:

- Parcel information (including zoning for each parcel);
- Recent development permit data; and
- Heritage and contaminated sites information.

2.2 INVENTORY OF POTENTIAL SITES

An inventory of vacant sites and infill opportunities was developed in the GIS (see maps in Appendix A). The parcel layer was queried, and sites that did not allow residential uses and sites with known contamination were eliminated.

Other parcels were eliminated from the analysis (i.e., not suitable) based on having one or more of the following attributes:

- Existing roadways and laneways (several unused laneways were retained);
- Zoning that does not permit housing development (e.g., Environmental Protection);
- Established public buildings (e.g., Whitehorse Elementary School, Legislature, etc.); and
- Heritage sites.

The remaining sites were ranked low, medium, and high based on their potential for multi-unit residential development. The ranking is based on the sum of the following representative values:

Site Development: (0, Fully Developed); (1, Partially Developed / Underutilized); (2, Undeveloped vacant land)[1]

Contamination Status[2]: (0, Contaminated); (1, No known contamination)

Potential = Site Development + **Contamination**: (3, High), (2, Medium), (1, Low).

The extent of the site development was determined based on aerial imagery interpretation and the qualitative review of the parcel layer. Local knowledge and Google Street View were used to verify the results. A site visit was undertaken to verify the accuracy of the interpretation and revise and input missing sites if necessary (photos in this report were taken during this site visit).

Draft maps were provided to the City of Whitehorse Planning staff and notes, and highlighted areas missed in the aerial photo interpretation, were provided. These areas were ground-truthed during the site visit completed June 19, 2021, by bike.

---

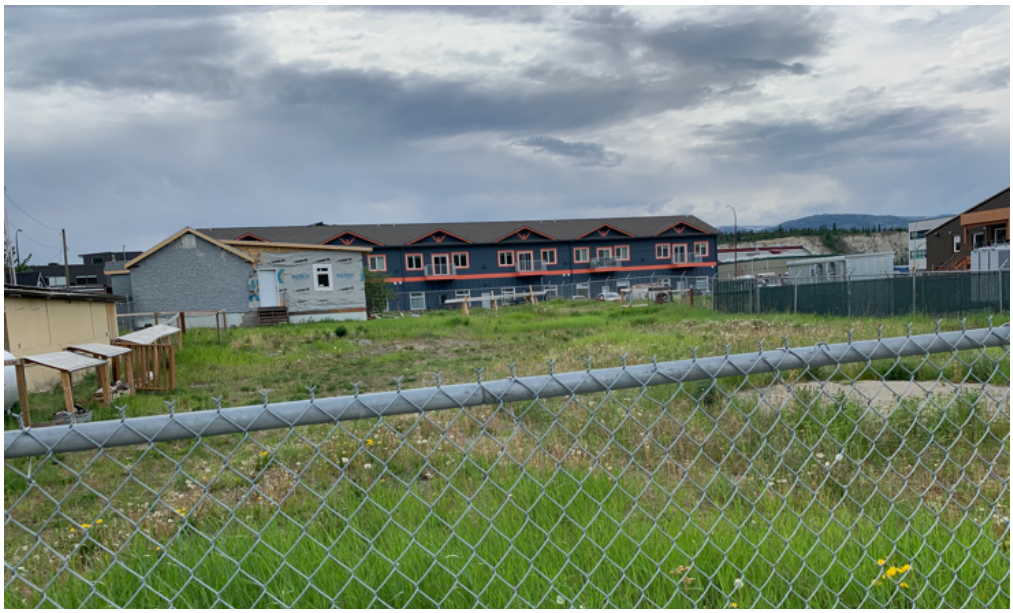
[1] Individual lots 100% devoted to parking lots were considered vacant for the purposes of this analysis. If a large lot contained over approximately 50% parking areas the area would be considered 'Partially Developed' (e.g., Superstore lot).

[2] Severity of contamination and remediation needs were not assessed.

Parcels where new residential unit development permit information was available were given a low potential rating based on there being a new structure on the property that would be less likely to be re-developed in the near or medium term.

Peaked roof buildings not covering the whole site were given a Site Development rating of 1 based on the assumption that the site was underutilized compared to its maximum buildout potential and more likely to be an aging structure (see Photo 2).

PHOTO 1 VACANT LOT ON FRONT STREET NEAR STRICKLAND AVENUE



2.3 DETERMINING DEVELOPMENT POTENTIAL

The development potential of the parcels was determined for the low, medium, and high potential sites using the densities summarized in Table 1 below.

TABLE 1: ASSUMED MAXIMUM UNIT DENSITIES

Size of Lot (m^2)	Zoning - Description	# Units per Lot
<150	All Zones - Too small for multi-unit development unless consolidated	0
150-200	Commercial[3] - Very small	1
200-350	Commercial - Small Lot	2
350-600	Commercial - ~Standard Lot	7
>600	Commercial - Large Lot	20
350-500	Residential Downtown - ~Standard Lot	4
Netted Out known no-development areas		0

The number of units per lot for commercial zoned areas in column 3 was determined through an analysis of recent development permits, as well as phone interviews with Anthony Zedda (KZA) and Erica Heuer, two local developers with extensive experience developing multi-unit residential spaces in infill areas downtown.

Small Multi-unit Commercial

Seven (7) units was considered the maximum density for 'standard' lots (+/- 100m^2 of the ubiquitous 50 by 100-foot / 463m^2 lot downtown) without changes to the zoning bylaws, in particular the requirements for onsite parking and amenity use. This is somewhat above the average determined through building permits analysis, which was approximately 5 units.

Large Multi-unit Commercial

Building permits analysis of multi-unit residential development of large lots (6 since 2011) provides an average of 30 units. However, given the small sample size and variability within the sample size (6 units above commercial spaces up to 48 nationally subsidized affordable units), a conservative value of **20 units** was applied for the large lot maximum. Note that the data analysis can be adjusted to provide outputs for different maximum unit density scenarios.

[3] Downtown Commercial Zones allowing multi-unit residential include: CM1 CM2, CS, CMW, CNC1, CNC2, CPG, CC.

Residential Downtown

The current maximum allowable number of units on Residential Downtown zoned lots is 4. However, because it is assumed that any previously developed lot already has at least one unit on it, the development potential for developed lots is assumed to be **3 units** (4 units max. – 1 unit existing = 3 units net increase in lots), while **undeveloped RD lots are assumed to be 4 units**.

Note that this added layer of analysis was not applied to commercial-zoned lots because an assumption regarding the baseline number of units would be substantially less accurate due to the development pattern on these lots (e.g., multi-unit condo/appartments and ground-floor commercial with appartments / suites above).

3 RESULTS & LIMITATIONS

The results of the analysis are summarized in Table 2. Most significantly, the maximum capacity of areas identified as having high development potential (i.e., appropriate zoning, vacant site, no contamination) is determined to be **918 units** (106 lots) based on current zoning controls, parking requirements, and development trends in Whitehorse. High development potential lots constitute about 5% of the lots downtown. The medium development potential is determined to be **3,503 units** (359 lots). Medium development potential lots constitute about 28% of the lots downtown. The low development potential is determined to be **3,396 units** (344 lots). Low development potential lots constitute about 33% of the lots downtown. The development potential at full build-out (High, Medium, Low) consists of **7,817 units**.

TABLE 2: DEVELOPMENT CAPACITY

Development Potential	Total Area (m^2)	Percentage	Average Lot Size (m^2)	Max Unit Capacity	# of Lots
High	74,197	5%	688	918	106
Medium	406,440	28%	767	3,503	359
Low	472,652	33%	1,320	3,396	344
Not Developable	473,523	33%	3,136	-	-
Total	1,426,812	100%	5,911	7,817	799

3.1 DISCUSSION

Contamination: An additional three vacant parcels (3181 3rd Ave; 2086 2nd Ave; 2240 2nd Ave) could achieve high potential if they were successfully remediated. This would move 47 units from the medium stream to the high development potential stream.

Consolidation of small lots: Some small lots (e.g., Block 8 lots 13-17, B) could be consolidated in such a way as to boost the development capacity by achieving a lot size that would accommodate larger multi-unit buildings. Unused or underutilized laneway parcels transect some of these blocks.

Forecasting growth: There is significant variation in the potential growth and likelihood of lots being developed downtown. Yukon and the City of Whitehorse have seen significant growth over the past ten years, and the Yukon Bureau of Statistics is forecasting a continued upward trend.

Using the updated Yukon Bureau of Statistics (YBS) "Preferred" (most likely) growth scenario, by 2040, Whitehorse will add 10,500 more people for a total population over 40,720. This would amount to a 19.46% increase in population – a 2% increase over the past ten year-trend. With an average of 2.4 people per household, 10,500 people would need an additional 4,375 new units.

Permit data also shows an upward trend in the number of units built in the past ten years, which corroborates the population numbers. Building permit data shows that 710 units were built between 2011 and 2020, an average of 71 units per year. However, 2020 saw a notable increase from the year over year average with 113 units reported in the 2020 development permit data (52 units / 59 percent increase from the average).

The previous trend in the building permit data, along with the historical and projected population growth, indicate that much growth is likely to occur in the downtown. In addition, given the recent dramatic rise in supply partly driven by the COVID pandemic and low-interest rates, a higher rate of development is likely to occur in the short term (2-3 years) and much of the lots having high development capacity could be developed and absorbed by the market. Medium to long-term growth forecasting will require additional analysis. In a post-pandemic world, a medium to long-term development growth forecast should be based on robust socioeconomic models that should explore different future scenarios of GDP, rent, wages, inflation, demographics, policy, and investment. Another method would be to match growth estimates to spatially explicit analysis, which uses the year of construction and floor to area ratio as a potential primary driver of change.

3.2 LIMITATIONS

The following limitations apply to the development capacity analysis presented in this memo:

- The analysis above does not consider the baseline or existing number of units for the medium and low development potential sites. Data to determine the baseline was not readily available. Vacant, high potential sites obviously have no units built on them currently, so it would be fully net positive if they were to be developed.

- In many cases, re-development of underutilized sites will remove one or two units, which results in a lower net increase in units when re-developed. Further field investigation and cataloging work to characterize existing residential development, particularly in the residential areas on both sides of 6th Avenue would address this limitation.

- Confidence in findings: The analysis is based primarily on aerial imagery interpretation, local knowledge, and targeted field investigation. Systematic ground-truthing of the data was not carried out. Ground truthing would increase confidence in the findings and provide an opportunity to correct missing quantitative (e.g., number of existing units, contamination & remediation) and qualitative (e.g., the status of buildings, current use for parking) information to the data.

PHOTO 2: EXAMPLE OF UNDERUTILIZED RD ZONED LOT WITH AN AGING STRUCTURE

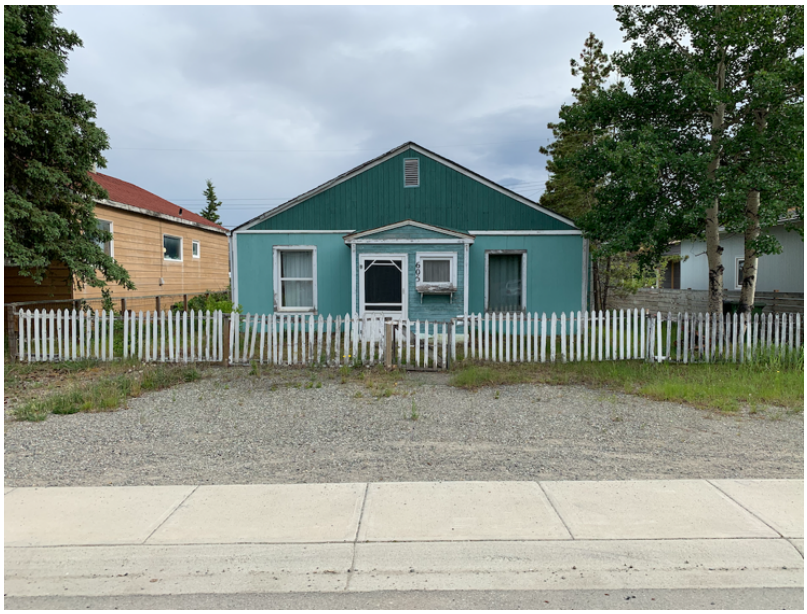
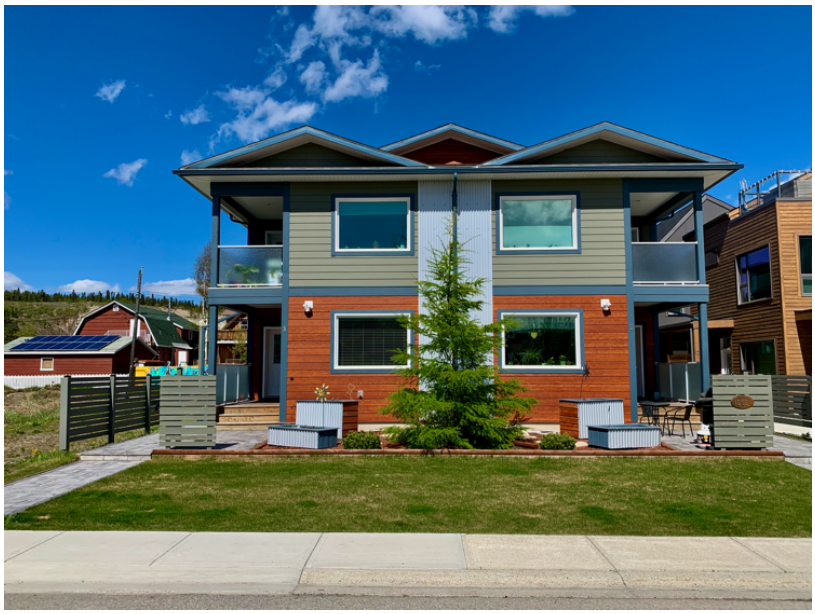


PHOTO 3: NEW MULTI-UNIT DEVELOPMENT DOWNTOWN BUILT ON PREVIOUSLY VACANT LOT (608 JARVIS STREET, RD)



4 CLOSING

We are pleased to present the results of the downtown development capacity assessment. We look forward to reviewing and discussing the work and the next steps with the City of Whitehorse Planning team soon.

3PIKAS

PREPARED BY:

Matthias Purdon, M.A
Land Use Planner
3PIKAS

REVIEWED BY:

Simon Lapointe, RPP, MCIP
Principal + Senior Planner
3PIKAS

5 APPENDIX A – DEVELOPMENT CAPACITY MAPS

PROJECT:

DOWNTOWN DEVELOPMENT CAPACITY ASSESSMENT

CLIENT:

Whitehorse
THE WILDERNESS CITY

DOWNTOWN NORTH

LEGEND

DEVELOPMENT POTENTIAL

- Not in Scope
- Low
- Medium
- High

Contaminated Sites

1:3,000

0 25 50 75 m

REVISIONS:		
1	2021/06/15	DRAFT FOR DISCUSSION
2	2021/06/17	DRAFT FOR DISCUSSION
3	2021/06/22	DRAFT
PREPARED BY: MP		REVIEWED BY: SL

3Pikas

DATE: 2021 / 06 / 17

3PIKAS.COM

PROJECT:

DOWNTOWN DEVELOPMENT CAPACITY ASSESSMENT

CLIENT:

Whitehorse
THE WILDERNESS CITY

DOWNTOWN CENTRE WEST

LEGEND

DEVELOPMENT POTENTIAL
- Not in Scope
- Low
- Medium
- High

- Heritage Sites
- Contaminated Sites

1:3,000

0 25 50 75 m

REVISIONS:

1	2021/06/15	DRAFT FOR DISCUSSION
2	2021/06/17	DRAFT FOR DISCUSSION
3	2021/06/22	DRAFT

PREPARED BY:	REVIEWED BY:
MP	SL

3Pikas

DATE: 2021 / 06 / 17
3PIKAS.COM

DOWNTOWN CENTRE EAST

PROJECT:

DOWNTOWN DEVELOPMENT CAPACITY ASSESSMENT

CLIENT:

Whitehorse
THE WILDERNESS CITY

LEGEND

DEVELOPMENT POTENTIAL
- Not in Scope
- Low
- Medium
- High

- Heritage Sites
- Contaminated Sites

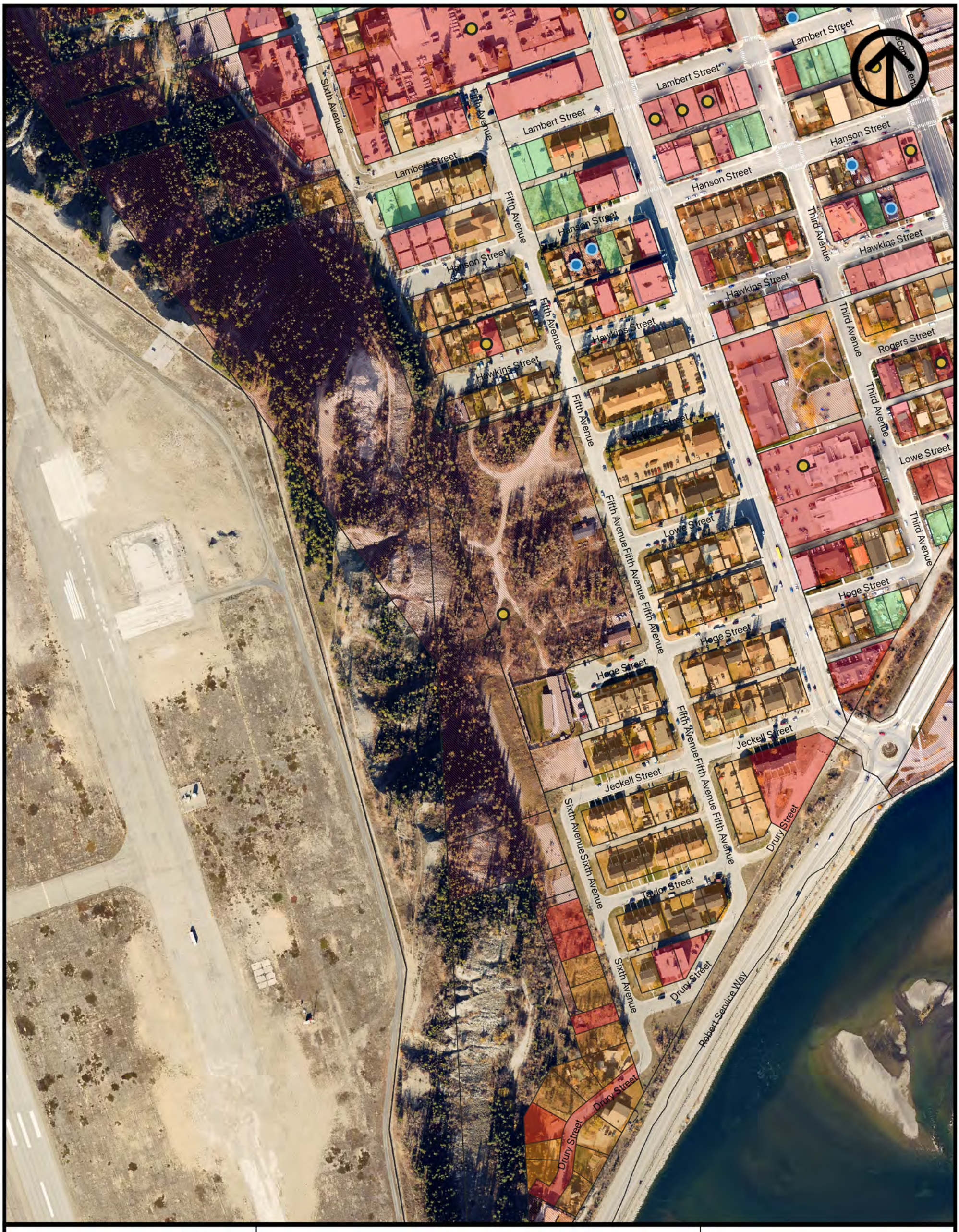
1:3,000

0 25 50 75 m

REVISIONS:		
1	2021/06/15	DRAFT FOR DISCUSSION
2	2021/06/17	DRAFT FOR DISCUSSION
3	2021/06/22	DRAFT
PREPARED BY: MP		REVIEWED BY: SL

3Pikas

DATE: 2021 / 06 / 17
3PIKAS.COM



PROJECT:

DOWNTOWN DEVELOPMENT CAPACITY ASSESSMENT

CLIENT:

Whitehorse
THE WILDERNESS CITY

DOWNTOWN SOUTH WEST

LEGEND

DEVELOPMENT POTENTIAL
- Not in Scope
- Low
- Medium
- High

- Heritage Sites
- Contaminated Sites

1:3,000

0 25 50 75 m

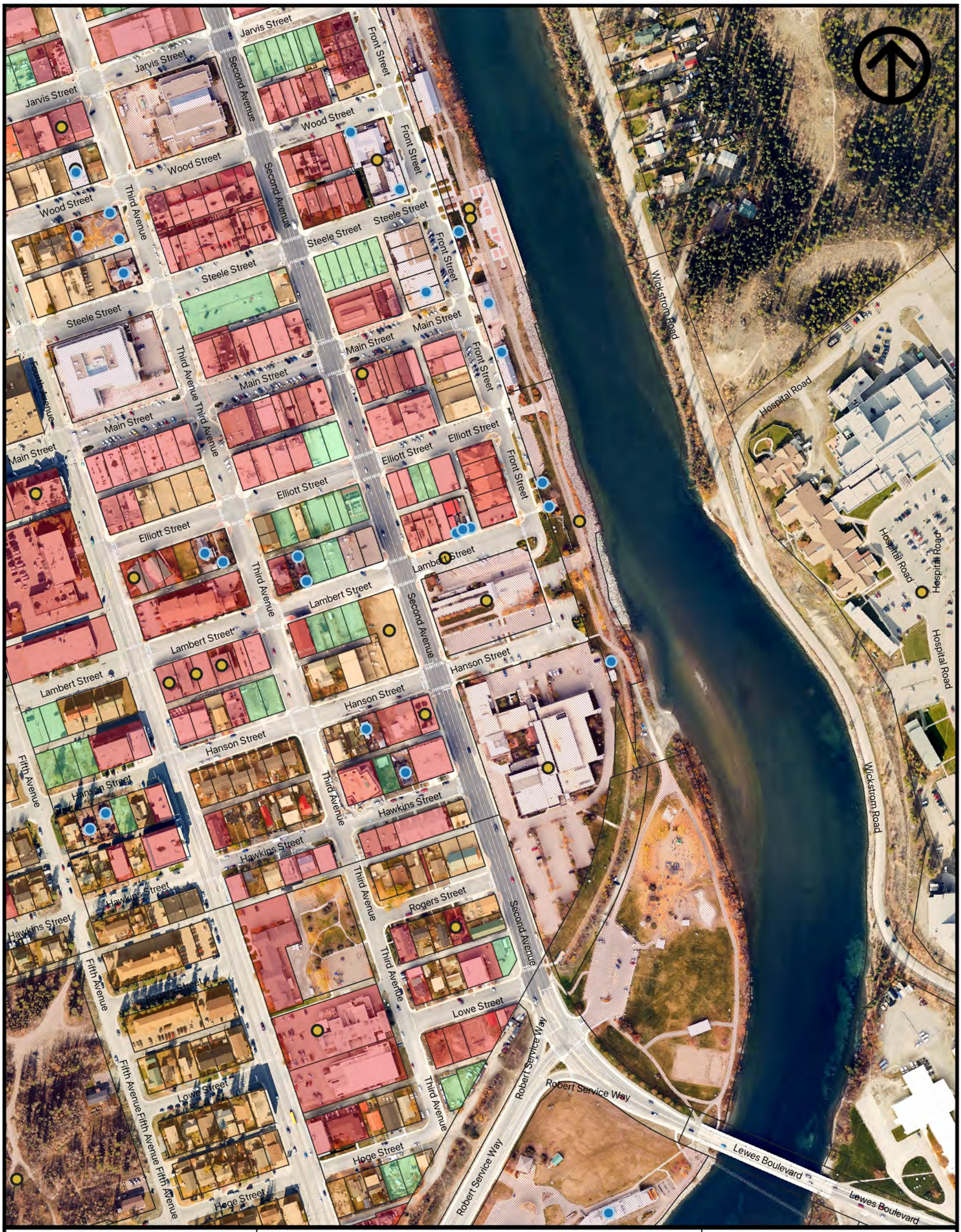
REVISIONS:

1	2021/06/15	DRAFT FOR DISCUSSION
2	2021/06/17	DRAFT FOR DISCUSSION
3	2021/06/22	DRAFT

PREPARED BY:	REVIEWED BY:
MP	SL

3Pikas

DATE: 2021 / 06 / 17
3PIKAS.COM



PROJECT:

DOWNTOWN DEVELOPMENT CAPACITY ASSESSMENT

CLIENT:

Whitehorse
THE WILDERNESS CITY

DOWNTOWN SOUTH EAST

LEGEND

DEVELOPMENT POTENTIAL
- Not in Scope
- Low
- Medium
- High

- Heritage Sites
- Contaminated Sites

1:3,000

0 25 50 75 m

REVISIONS:

1	2021/06/15	DRAFT FOR DISCUSSION
2	2021/06/17	DRAFT FOR DISCUSSION
3	2021/06/22	DRAFT

PREPARED BY:	REVIEWED BY:
MP	SL

3Pikas

DATE: 2021 / 06 / 17
3PIKAS.COM