PROPENSITY MODEL

The Propensity Model Dashboard surfaces how many of your station's new active users are predicted to become Passport members in the current month, along with the viewing behaviors and characteristics driving those predictions. By scoring every new active user based on their watch behavior, the model allows stations to run targeted, timely outreach rather than broad, untargeted campaigns.

The dashboard also includes an Audience Segmentation component, which groups your viewer base into distinct communities based on actual watching behavior. Using unsupervised machine learning, the model identifies natural clusters of viewers who share similar tastes across genre, subgenre, mood, and theme. The goal is to help stations move beyond treating all viewers the same and instead develop outreach, content promotion, and conversion strategies tailored to the specific communities that make up their audience. Note that these components are subject to change.

HOW THE MODEL WORKS

The audience segmentation model runs in four steps:

Step 1: Gathering Viewing Habits
The model looks at what users have been watching and pairs that activity with detailed show-level information, including basic genre, as well as AI-generated subgenre, mood, and theme tags.

Step 2: Grouping the Audience
A machine learning algorithm analyzes all viewing data to find natural communities, grouping together users who share highly similar tastes across all four levels of content detail.

Step 3: Creating Labels
Once clusters are formed, each community is assigned a concise label and description based on its dominant viewing patterns. These descriptions identify the primary genre and the proportion of viewing time associated with that genre. For example: "Drama – 85% of viewing time."

Step 4: Applying Relative Importance Weighting
Because nearly all PBS viewers watch some drama, raw genre data would collapse most users into a single large cluster. To surface meaningful differences, the model applies relative importance weighting, normalizing drama's dominance so that other genre preferences such as history, documentaries, and science can distinguish clusters from one another.

DASHBOARD FILTERS

Three filters control what is displayed across the entire dashboard. Apply these before interpreting any metrics.

METRIC	WHAT IT SHOWS	FILTER TYPE
Station Filter	Auto-applied for station users — all data shown reflects your station's users only.	*Auto*
Month	Filters predictions and statistics to the selected month.	*Manual*
Predicted Class	Toggle between users predicted to convert (True) and users predicted not to convert (False). Most use cases will focus on Prediction: True.	*Manual*

DASHBOARD METRICS

These metrics describe the overall population of new active users reflected in the dashboard for the selected month and filters, as well as how that population is engaging with PBS content.

METRIC	WHAT IT SHOWS	SOURCE
Total Users	Unique users who visit the PBS website or app in the selected month.	*GA4*
Users Predicted to Convert	How many users the model predicts will become Passport members by the end of the selected month.	*Propensity Model*
Users Predicted Not to Convert	How many users the model predicts will not convert during the selected month.	*Propensity Model*
Avg Days Since Last Content View	Average days since users' last visit with a content view across all platforms.	*Propensity Model*
Avg Active Days Per Week (Last Month)	Average number of days per week users engaged with PBS content in the last month.	*Propensity Model*
% With Profile	Percentage of users who have created a PBS profile (free registered account).	*Propensity Model*
% Visited Passport Page	Over the last 6 months, percentage of users who visited a Passport-related page (URL or screen containing 'Passport').	*Propensity Model*
Avg % Local Content	Over the last 6 months, average ratio of local-tagged content watched vs. all content watched, averaged across all users.	*Propensity Model*
Avg Minutes Watched by Genre	Over the last 6 months, average minutes watched per genre across all users.	*Propensity Model*
Avg Minutes Watched by Device	Over the last 6 months, average minutes watched by device type (web, mobile, OTT, other) across all users.	*Propensity Model*
Avg Minutes Watched	Average total minutes of PBS content watched, broken into 7 / 30 / 60 / 90-day buckets.	*Propensity Model*
Avg % Shows Watched Completed	Average percentage of a show's available episodes that users watched to completion, across all users and content in the selected period.	*Propensity Model*

Each segment your station sees will have a name and description generated by the model. Because segments are built from actual viewing behavior rather than preset categories, the specific segments and their names may differ from station to station and may evolve over time as viewing habits change. Key things to understand about how segments are defined:

- **Genre alone is not the only driver.** Subgenre, mood, and theme all contribute. Two viewers who both watch drama may land in different segments based on whether they prefer historical dramas vs. contemporary family dramas, or contemplative vs. high-tension content.
- **Drama is normalized, not excluded.** The model accounts for the fact that nearly all PBS viewers watch drama to some degree. Drama viewing is weighted down so it does not overwhelm other distinguishing traits.
- **Local content is treated as its own category.** Local programming is tagged and surfaced as a distinct content type, allowing the model to identify viewers who are primarily driven by local content.
- **Segment sizes vary.** Some communities will be large; others will be small but highly engaged. A smaller segment with strong donation propensity may warrant more outreach investment than a larger but more passive one.

TOP 10 IMPORTANT MODEL ELEMENTS

This view shows the ten user behaviors and traits carrying the most weight in the model's scoring for the selected month. Examples include creating a PBS profile, visiting a Passport page, or watching on a specific device type.

Key notes on interpreting this list:

- The model draws from over 50 features. The top 10 list may change month to month as new predictions are generated.
- Some signals (e.g., profile creation, Passport page visits) are more directly actionable than others (e.g., device type, marketing source).
- Focusing station outreach and content promotion efforts on the top actionable signals may help increase conversions over time.

QUICK ACTIONS

- **Who are your likely converters?**
  Use the Predicted Class filter set to True to see how many users the model has flagged as likely converters. Compare these predicted segments against your own donor or outreach lists to inform targeted campaigns before or during a pledge drive.
- **Why is % With Profile low?**
  Profile creation is often a strong conversion signal. Consider campaigns that encourage free account sign-up as a first step toward Passport membership.
- **Why is % Visited Passport Page low?**
  Users who have not encountered the Passport offer are less likely to convert. Review whether Passport promotion is prominent in your content and station communications.
- **Who are your high local content viewers?**
  Users with a high ratio of local content viewing may represent an untapped conversion segment. Consider messaging that connects local content to Passport membership benefits.
- **Where are your largest unconverted segments?**
  Look for clusters with high viewer counts but low Passport membership rates. These are your highest-priority conversion targets.
- **How should you tailor messaging by segment?**
  Use segment names and descriptions to inform how you frame Passport appeals. A History and Documentary cluster will respond differently than a Drama Devotee cluster.
- **Which local content viewers should you prioritize?**
  If a local content cluster is present in your station's data, assess its size and donation behavior. This group has a direct relationship to your station's unique programming investment.
- **What should you review monthly?**
  Review the Top 10 Model Elements monthly. As the feature rankings shift, adjust outreach priorities to align with what the model is currently weighting most heavily.
- **How do you act on predicted converters?**
  The dashboard shows predicted conversion volume but does not provide an exportable list of individual users. To identify and reach specific prospects, use the Prospect Report.

KEY TERMS

Total Users	Unique users who visit the PBS website or app in the selected month. This is the population the model scores.
Predicted Class: True	Users the model predicts will convert to Passport members by the end of the selected month.
Predicted Class: False	Users the model predicts will not convert during the selected month.
Feature Importance	A ranking of which user behaviors and traits have the most influence on the model's conversion prediction for a given month.
% Local Content	The ratio of local-tagged episodes watched vs. total episodes watched, averaged across all users in the selected filter.
Passport Page Visit	Counted when a user's URL or screen name contains 'passport.' Some custom station Passport URLs may not be captured.
PBS Profile	A free registered PBS account. Profile creation is often an early signal of intent to convert.
Cluster / Segment	A group of viewers identified by the model as sharing similar viewing tastes across genre, subgenre, mood, and theme. Each cluster is given a plain-English name and description.
Unsupervised Machine Learning	A modeling approach where the algorithm finds natural patterns in data without being given predefined categories. The model discovers the clusters; humans did not define them in advance.
Relative Importance Weighting	A technique used to normalize drama viewing, which is common across nearly all PBS users, so that other genre preferences can meaningfully differentiate clusters.
Genre	Broad content category (e.g., Drama, History, Science and Nature, Documentary, Arts and Music).
Subgenre / Mood / Theme	Deeper AI-generated content tags that provide more granular classification within each genre, used alongside genre to define cluster membership.
Local Content	Programming tagged as local to a specific station. Tracked as a distinct content type within the segmentation model.

DATA NOTES

- **Data refreshes monthly on the second day of each month,** reflecting the previous month's activity. For example, May 2026 data will be available on June 2, 2026.
- **Model runs monthly at the start of each month,** scoring all qualifying new active users based on the prior month's watch activity. Predictions will track close to actual conversions but won't match exactly, as the model won't catch every converter.
- **Passport page visit tracking is counted only when the URL or screen name contains "passport."** Stations with custom Passport URLs that do not include this word will have underreported visit rates.
- **Segments are not fixed.** As audience habits evolve, clusters may shift, split, or look different from one quarter to the next. Smaller viewer bases may also produce fewer or broader clusters.
- **Genre tagging is ongoing.** Not all programs are fully tagged with subgenre, mood, and theme data, and some episodes may have incorrect or missing genre attribution due to GA4 logging issues. As coverage improves, segment definitions may shift.
- **Local content tagging is in progress.** Programs are being tagged individually, with a station-level local tag applied in the interim to ensure local content is captured as a distinct cluster input.