

# Validation & Test Scenarios

**Application:** Wealth Planner v22 **Certification Date:** January 19, 2026

The following test suites validate the logic, tax accuracy, and survivor handling of the application.

## Test Suite 1: Baseline Logic

- **Test 1.1:** Standard Couple (Happy Path). Verify assets grow, expenses inflate, and transition to retirement works.

## Test Suite 2: Stress Testing

- **Test 2.1:** The "Broke" Scenario. Confirm portfolio hits \$0 and stays at \$0 (no negative balances).
- **Test 2.2:** Market Crash. Verify -15% return reduces principal correctly.

## Test Suite 3: Tax Engine Accuracy

- **Test 3.1:** High Tax (CA). Verify ~8% state tax impact.
- **Test 3.2:** No Tax (TX). Verify 0% state tax.

## Test Suite 4: Event Logic

- **Test 4.1:** Windfall. Verify lump sum cash inflow at specific age.
- **Test 4.2:** Big Spend. Verify lump sum outflow and tax gross-up.

## Test Suite 5: Advanced Timing

- **Test 5.1:** Spouse Gap. Verify Spouse SS triggers based on Spouse age (e.g., User is 77 when Spouse 67 income starts).

## Test Suite 6: Version 22 Features (New)

*Objective: Validate Survivor Logic and State Exemptions.*

### Test 6.1: The Widow Scenario

- **Inputs:**
  - User Age 60, Spouse Age 60.
  - **Spouse Plan Until: 75** (User plans to 95).
  - SS: User \$3000, Spouse \$2000.
- **Validation:**

- At Age 75: Income is User + Spouse (\$5000/mo). Tax is "Married".
- At Age 76: Income drops to **\$3000** (Survivor Benefit / Max of the two).
- At Age 76: Tax Status changes to **Single**. Standard Deduction drops.

### Test 6.2: NC Tax Exemption

- **Inputs:**

- State: **North Carolina**.
- Income: Only Social Security (\$50,000).
- Portfolio Withdrawals: \$0.

- **Validation:**

- **Total Tax** should be **Federal Only**.
- State Tax line item should be **\$0** (because NC exempts SS).
- *Contrast:* Change state to another 4.75% state (without exemption) and verify State Tax > \$0.

### Test 6.3: Future Tax Model

- **Inputs:**

- Tax Year Model: **2030**.

- **Validation:**

- Run a scenario with withdrawals.
- Compare tax paid vs "2026 Model."
- **Result:** 2030 Model should show **Lower Tax** for the same income due to inflation-adjusted (widened) brackets.

### Certification Statement

*Version 22 has passed all 6 Test Suites, confirming the accuracy of the multi-year tax engine, survivor benefit calculations, and state-specific tax logic.*