Model Performance Metrics:
1- Multiple Linear Regression
Linear regression model applied to the dataset.

1-1-Evaluation Metrics:
MSE=10059525.716622159
MAE=1820.996476510666
R2=0.9108595703918305
1-2-Cross-Validation Results:
Mean cross validation test score: 0.17937827185733396
Mean cross validation train score: 0.907992832296129
Standard deviation in cv scores: 0.6116306629961016
2- Ridge regression:
The ridge regression model applied to the dataset.

2-1-Evaluation Metrics:
MSE=11305020.750448104
MAE=1906.9502517969547
R2=0.8998228708974764
2-2-Cross-Validation Results:
Mean cross validation test score: -0.8426050079251223
Mean cross validation train score: 0.9026701191934151
Standard deviation in cv scores: 2.443067784665445
3- Gradient Boosting Machines:
Gradient Boosting Regressor applied on the normalized data.

3-1-Evaluation Metrics:
MSE=4246017.906021098
MAE=1145.9909525630992
R2=0.9623747807870019
3-2-Cross-Validation Results:
Mean cross validation test score: 0.23718857442322427
Mean cross validation train score: 0.9442163359965724
Standard deviation in cv scores: 0.42081404036714865
4. Random Forest

4-1-Evaluation Metrics:
MSE=4448820.016800931
MAE=1145.9952714285714
R2=0.9605776913625486
4-2- Cross-Validation Results:
Mean cross validation test score: 0.23871470950619286
Mean cross validation train score: 0.9430095101005664
Standard deviation in cv scores: 0.5056310732557691
5. Support Vector Regression Model (SVR)
SVR model applied to the normalized data.

5-1-Evaluation Metrics:
MSE=125901292.44938798
MAE=4208.299780020598

R2=-0.11564855176201205
5-2- Cross-Validation Results:
Mean cross validation test score: -0.1972783418931082
Mean cross validation train score: -0.09710670835987818
Standard deviation in cv scores: 0.06234745815481293
5-4-Conclusion

Based on the above metrics results, Random Forest and Gradian Boosting are the best models among the ones compared. They have the highest R^2. However, the high values of MSE and MAE suggest that the actual predictions may still be quite far from the actual values. To make the process more accurate I want to use feature selection in the next step.
6-Features:

The Random Forest model and the Gradient Boosting model exhibit the same feature importance. Therefore features for both selected models include:
 -GeoType_Citywide
 -GeoType_Borough
 -no2/Mean ppb
 -pm/Mean mcg/m3
 -Year
7- Hyperparameters:

7-1- Random Forest
 max_depth: 10
 max_features: sqrt
 min_samples_leaf: 1
 min_samples_split: 2
 n_estimators: 200
 -Best R2 Score: 0.9458677126090802
 -Test Score: 0.9545611167355407
 -Mean Squared Error on test set: 5127792.369216146
 -R2 score on test set: 0.9545611167355407
7-2- Gradient Boosting
  learning_rate: 0.1
  max_depth: 5
  min_samples_leaf: 1
  min_samples_split: 2
  n_estimators: 100
  subsample: 0.8
 -Best Score: 0.9527920253948207
 -Test Score: 0.950376183226798
 -Mean Squared Error on test set: 5600063.441260577
 -R2 score on test set : 0.950376183226798